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Medair Health Project in Bekaa Valley – Lebanon

Health and Nutrition Knowledge, Practices and Coverage Household Survey Analysis 2019

Part 2 – 2016 to 2019 Comparison Report

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Medair Health Project – Lebanon
Health and Nutrition Knowledge, Practices and Coverage
Household Survey Analysis 2019
Part 2 – Comparison Report: 2016-2019

4 December 2019

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Declaration of Conflicts of Interest

The independent consultant data analysts are not and never have been employees of Medair and have no familial or financial relationships with any Medair staff other than the contractual relationship in relation to this consultancy. We declare no conflict of interest exists.
Medair staff designed the survey tool and conducted data collection.

Glossary of Acronyms

The following acronyms and terms are used in this report.

ANC	Antenatal care
AoI	Area of Intervention (the 5km radius surrounding each of the SDCs assisted by Medair)
ARI	Acute Respiratory Infection
CHVs	Community Health Volunteers
EU-MADAD	European Union regional trust fund in response to the Syria crisis
FP	Family Planning
Government of Canada-IHA	International Humanitarian Assistance
IAMP 56	Inter-Agency Mapping Project
IBM SPSS	A statistical analysis software package produced by IBM
KPC	Knowledge, practice, coverage
MoPH	Ministry of Public Health
MoSA	Ministry of Social Affairs
MS	Microsoft
NCD	Non-Communicable Diseases
NGO	Non-Governmental Organization
ODK	Open Data Kit (digital survey software programme)
ORS	Oral Rehydration Solution
PNC	Postnatal care

1. Project Background and Context[1]

The Background

In 2019 the Syria crisis entered its eighth year with almost 1 million registered and as many as 550,000 unregistered Syrian refugees continuing to reside in Lebanon, a third of whom live in the Bekaa Valley (UNHCR Data Portal, July 2019). The protracted nature of this conflict has seen the number of refugees residing in Lebanon remain relatively stable since 2014 and the number is not expected to decrease in the immediate future. Syrian refugees make up as much as a quarter of Lebanon's total population, with 80% of these refugees being women and children. The presence of refugees in such high numbers has strained the political, economic and social stability of the country, stretching basic services and systems that have weakened the host authorities' capacity to respond to the increased needs, especially in education, water supply and healthcare. Difficult living conditions exacerbated by extreme weather, poor sanitation and hygiene situation in refugee settlements have a strong impact on the public health situation of the refugees and has increased the risks of outbreaks of communicable diseases.

The Project

Since 2014 Medair has been supporting Ministry of Social Affairs (MOSA) Social Development Centers (SDC) implementing a project to improve refugees' and affected host communities' access to primary health care (PHC) services. Medair, in close collaboration with MOSA, currently supports six clinics in Central, West and North Bekaa, with a focus on mother and child health, in addition to mental health and psychosocial support. Medair supports clinics through the provision of human resources, medicines, equipment, capacity building and supportive supervision to each of the clinics.

Community Health Volunteers (CHVs) in the SDC catchment area deliver a community health promotion package and have been trained on relevant health topics including exclusive breastfeeding, family planning, essential maternal and newborn care, early marriage, lice and scabies treatment and referral systems. Community midwives provide antenatal care, postnatal care and family planning. CHVs and community midwives carry out household visits, community outreach in Informal Settlements within SDC catchment areas, as well as meeting refugees and vulnerable host communities in community shared places.

[1] Adapted from Terms of Reference (ToR)

2. Purpose and Scope of the Comparison Report[2]

Medair conducted its first KPC survey of the Syrian refugee population residing in Lebanon in December 2016. Medair has repeated the survey each year since, with the purpose of providing robust data that will inform Medair, MoSA, MoPH and other NGO programming and provide a strong evidence base to current and potential donors."? Remove " or need to add the first

The purpose of this report is to carry out a proxy comparative analysis of the 2019 dataset with those of 2018, 2017 and 2016 to contextually identify and explore statistically significant trends between the four surveys and propose ways forward, including areas for qualitative research for Medair, MOSA, MoPH and other NGOs. This is intended as a first step towards the dissemination and application of findings.

The analysis and reporting will be based on, but not restricted to, key health and nutrition related indicators including the following thematic areas:

- *Health seeking behavior*
- *Diarrhea and respiratory tract infection management for children*
- *Vaccinations*
- *Reproductive health (including antenatal care, postnatal care and family planning)*
- *Breastfeeding practices*
- *Access to reproductive and psychosocial services*

3. Objectives of the Report

1. Analyze the 2016, 2017, 2018 and 2019 data sets together and provide a tabular presentation of point estimates for all required indicators including 95% confidence interval and statistically significant trends, inclusive of disaggregation of Syrian and vulnerable Lebanese population groups.
2. Provide a concise 6 to 8-page commentary[3] regarding the trends revealed by the data. This is to be presented in the context of the environment of the Bekaa, drawing on relevant literature as it relates to the national public health situation.
3. Provide written recommendations on areas for further qualitative study that would benefit from exploration of underlying causal factors for notable movements in indicators, including recommended approach and next steps.

4. Methodology

4.1 Document Review

Desktop review was performed on:

- *Medair's project design documents*
- *Previous survey reports*
- *The questionnaire used by Medair to collect the data under review in this report*
- *External reports and surveys related to Lebanon's health care system and the Syrian refugee response*
- *The global evidence on health promotion, health seeking and health behaviours*

[2] Adapted from Evaluation ToR

[3] Excluding tabular presentations.

4.2 Household Surveys

In 2019, the survey was conducted using a cluster design to enable the calculation of 95% confidence interval point estimates with acceptable degrees of precision. The sampling frames was distinct for both Syrian refugees (made up of those living in informal settlements) and vulnerable Lebanese, such that two cluster surveys were conducted.

The target respondents were women of childbearing age with children under the age of 5. The data was collected by approximately 70 enumerators, trained and supervised by Medair staff, using tablets and ODK (Open Data Kit) data collection software. The sampling frames were Syrian refugees (made up of those living in informal settlements only) and vulnerable Lebanese in the catchment areas of the 6 Medair-supported SDCs (Talia, Brital, Marj, Kabelias, Jib Janine and Rafid).

In 2018, the survey was conducted using a two-stage cluster design to enable the calculation of 95% confidence interval point estimates with acceptable degrees of precision. In 2016 and 2017, similar surveys in Medair's areas of intervention (AoIs) were conducted using 30 clusters for Syrian and 30 for Lebanese communities.

Table 1 - Number of survey respondents after data cleaning

	2016	2017	2018	2019
Syrian refugees	367 (34% in informal settlements)	395 (39% in informal settlements)	1482 (100% in informal settlements)	1529 (99.8% in informal settlements)
Vulnerable Lebanese	385	385	751	758
Totals:	752	780	2233	2287
Locations:	Baalbek (North Bekaa) West Bekaa Zahle (Central) Rachiya	Baalbek (North) West Bekaa Zahle (Central) Rachiya	Baalbek (North Bekaa) West Bekaa Zahle (Central)	Baalbek (North Bekaa) West Bekaa Zahle (Central)

2016 data was collected between 10th - 16th December 2016.
2017 data was collected between 26th - 29th of December 2017.
2018 data was collected between 10th – 21st December 2018.
2019 data was collected between 16th – 27th September 2019.

4.3 Sampling approach[4]

General cluster selection procedure:

1. Syrian refugees:
   a. Using IAMP 63, the number of Syrian refugee households living in Informal Tented Settlements (ITS) within the coverage area of the 6 Medair-supported SDCs (23 Cadasters) was broken down by Cadaster and ITS, and a cumulative population list was made.
   b. Based on the total household population and the required sample size, an interval was calculated for 60 clusters, the starting point for which was selected by a random number.
   c. The cluster locations (ITS/Pcodes) were then selected using the interval through systematic random sampling.
   d. At the field level the 25 household respondents were chosen firstly from within the selected ITS. Where there were not enough households with mothers (or care givers) with children under 5, the next nearest ITS was located in order to reach the required cluster sample size.

[4] Extracted from survey ToR

2. Vulnerable Lebanese:
    a. Using IAMP 65, a, a cumulative population list of Lebanese was made by household and broken down by Cadaster. Starting with the 2018 KPC survey Municipality statistics on the number of Lebanese living in the Cadaster and the proportion of vulnerable Lebanese among them, additional sources were used to verify these numbers.
    These included:

        - updated Municipality data (through a phone survey)
        - Wikipedia statistics
        - staff local knowledge

    The revised list was then used to finalize a 2019 version of Cadaster populations of Lebanese and vulnerable Lebanese.

    b. Based on the total vulnerable Lebanese household population (from across the 23 Cadasters), an interval was calculated for 30 clusters, the starting point for which was selected by a random number.

    c. The cluster locations (Cadasters) were then selected using the interval, through systematic random sampling.

    d. At the field level, where there was only one cluster in the Cadaster, the enumerator teams were directed either by the Medair-supported CBO, or by the Municipality, to a starting point in the Cadaster that contains high numbers of vulnerable Lebanese. After the first household was identified, snowball sampling was used to reach the 25 required households per cluster.

    e. Where there was more than one cluster in the Cadaster, the same approach was used, but the Cadaster was delineated into the number of clusters through natural geographical boundaries, such as roads, rivers or urban areas.

4.4 Data analysis

The data was analyzed using IBM SPSS (Version 25) complex samples module, employing analysis plans that catered for the cluster sampling design. Frequency calculations included percentages, confidence and standard errors based on weighted counts.

Where radical differences were evident between 2019 results and previous years, forensic recalculations were performed to establish whether the differences were a result of data collection questions, or formulae used by analysts differed, or whether the difference is real. Where necessary, such explanations are provided in the tables and narratives of this report.

4.5 Limitations of the comparison report

Modification of some questions compared to previous years' surveys.

Some themes were surveyed this year using different question approaches to previous years. This reduced or removed year-on-year comparability. For example, in 2016 and 2017 surveillance of vaccinations utilized information on vaccination cards plus maternal recall for those without a vaccination card. In 2018 the survey used only information on vaccination cards. In 2019 recall data was once again collected along with vaccination cards but it was determined that recall data would not be used in the analysis "due to widespread vaccination campaigns". Consequently, 2018 and 2019 data are directly comparable for these indicators but comparisons of 2019 data with 2016 and 2017 requires caution.

Disagreements between 2019 and previous years' analytical formulae.

In some cases, the 2019 data analysts disagreed with formulae used in previous analyses. An example is the percentage of mothers of children under two years of age who received a post-partum visit from an appropriate

trained health worker within two weeks after birth of their youngest child after discharge from a health facility. While the 2018 and previous years used the proportion of women who had received a PNC visit from anyone as a denominator, all mothers were used as the denominator in Report 1. In these cases, we followed the methodology used in previous years for consistency and longitudinal comparability.

No disaggregated data from previous years.

In previous years some indicators were reported with only an aggregated result that combined Syrian and Lebanese results. Therefore, disaggregated trends could not be specifically provided. In other years, only one nationality's data was reported, in which case we have presented the data for both nationalities, but only commented on the trend for the nationality with longitudinal data to compare.

Whole-of-population survey.

The sample was not restricted to direct beneficiaries of Medair's projects. As inclusion of non-beneficiary community members may suppress the overall results relative to the true effect among beneficiaries, all results should be interpreted with caution.

5. Results

5.1 Interpreting the results

This report presents the KPC findings for surveys conducted in 2016, 2017, 2018 and 2019. Comparison descriptions refer only to the difference between 2016 and 2019 results and the 2018 and 2019 results. The 2016 – 2019 comparisons generally yield more meaningful results, as genuine change can often not be observed over a single period.
The significance of the change was assessed by comparing the 95% confidence intervals, which follow the point estimates in square brackets in the tables of this report. Non-overlapping confidence intervals were judged to be significant.

5.2 Definitions of change descriptions

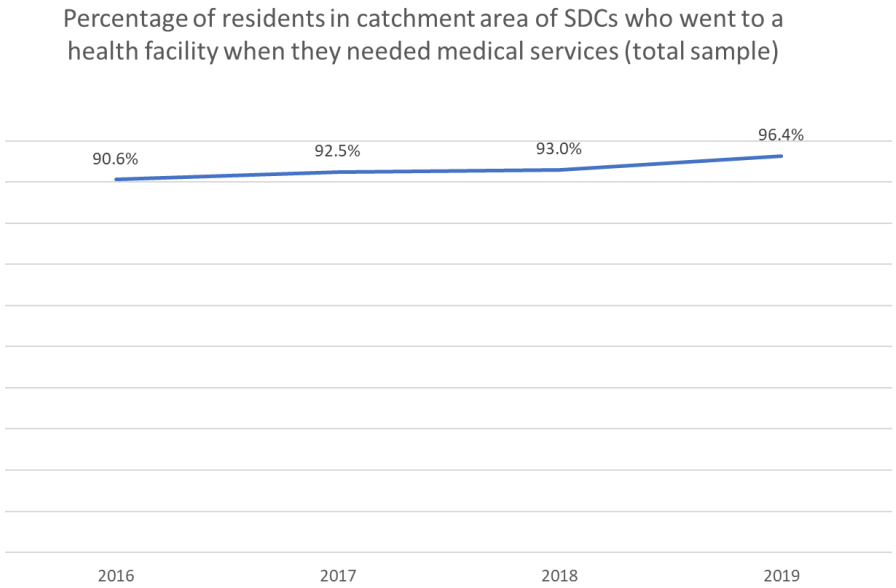
No statistically significant change: the difference in 2016 and 2019 results is small and possibly the result of measurement error or attributable to a sample size that was insufficient to yield narrow enough confidence intervals for meaningful comparison.
Deterioration: a statistically significant reduction in coverage that contributes to a poorer health result across the population.
Improvement: a statistically significant increase in the coverage that contributes to an improvement in health across the population.
Decrease (=improvement): a statistically significant reduction prevalence of a condition or behavior, that contributes to an improvement in health across the population.

Increase/ Decrease: a statistically significant change in an indicator that is not directly linked to an improvement or deterioration in health outcomes (e.g., treatment in a private clinic vs. treatment in an SDC Clinic)
Orange cells: data not available

5.3 General health seeking behavior

Table 2 - Percentage of residents in catchment area of SDCs who went to a health facility when they needed medical services

Nationality	AoI (2016)	AoI (2017)	AoI+ (2018)	2019	Trends (2016 -19)	Trends (2018 -19)
Vulnerable Lebanese			95.3% [93.7,97.0]	99.3% [98.3, 99.7]	Improvement (relative to 2016 total sample)	Improvement
Syrian refugees			91.8% [90.3,93.3]	95.3% [93.6, 96.6]	Improvement (relative to 2016 total sample)	Improvement
Total sample	90.6% [87.0, 93.3]	92.5% [88.8, 95.0]	93.0% [91.8,94.1]	96.4% [95.1, 97.4]	Improvement	Improvement



Improving access to primary health care is one of the three main objectives of this project and the data suggest that the project is having an impact in this regard[5]. The 2019 data demonstrates robust improvements in the proportion of respondents who sought health care when they needed medical services to 99.3% among vulnerable Lebanese and 95.3% among Syrian refugees. These improvements are significant when comparing both population groups between 2018 and 2019, and when comparing each population group to the 2016 aggregate. The continuing efforts of Medair's health outreach teams, as well as the Ministry of Social Affairs (MoSA), Ministry of Public Health (MoPH) and other NGOs can likely be credited with generating these improvements.

[5] Global Affairs Canada – IHA Proposal Multi-year call for proposals World Relief Canada, p3

Figure 1 - Percentage of residents in catchment area of SDCs who went to a health facility when they needed medical services

Table 3 - Health care access

Question	Response	Nationality	AoI (2016)	AoI (2017)	AoI+ (2018)	2019	Trends (2016 -19)	Trends (2018-19)
In the last year, have you or your child/children needed medical services?	Yes	Vulnerable Lebanese	81.5% [76.1, 85.9]	62.7% [54.0, 70.6]	85.2% [81.0, 88.7]	79.3% [75.2, 82.9]	No statistically significant change	No statistically significant change
		Syrian refugees	86.4% [80.4, 90.8]	73.5% [65.3, 80.3]	86.6% [83.9, 89.0]	89.9% [88.1, 91.4]	No statistically significant change	No statistically significant change
		Total sample	83.7% [79.8, 87.0]	68.8% [62.7, 74.3]	86.2% [83.9, 88.2]	86.4% [84.4, 88.1]	No statistically significant change	No statistically significant change
Which health facility did you go to? (asked if respondent reported going to a health facility when they needed the medical services)	SDC	Vulnerable Lebanese	14.9% [10.0, 21.7]	31.2% [23.4, 40.4]	34.2% [26.2, 43.2]	41.4% [31.7, 51.9]	Increase	No statistically significant change
		Syrian refugees	33.2% [25.1, 42.3]	47.1% [42.3, 51.9]	42.2% [34.7, 50.0]	49.8% [42.7, 57.0]	Increase	Decrease
		Total sample	23.5% [18.1, 29.9]	40.9% [35.7, 46.2]	39.5% [33.9, 45.4]	47.0 % [41.2, 53.0]	Increase	No statistically significant change
	Private clinic	Vulnerable Lebanese	43.6% [36.2, 51.3]	30.7% [24.6, 37.5]	50.8% [43.9, 57.5]	48.6% [43.5, 53.6]	No statistically significant change	No statistically significant change
		Syrian refugees	15% [8.7, 21.3]	25.3% [20.8, 30.4]	9.9% [7.8,12.6]	17.4% [15.2, 20.0]	No statistically significant change	Increase
		Total sample	29.1% [23.0, 36.1]	20.6% [16.3, 25.8]	NA	27.2% [23.6, 31.2]	NA	NA

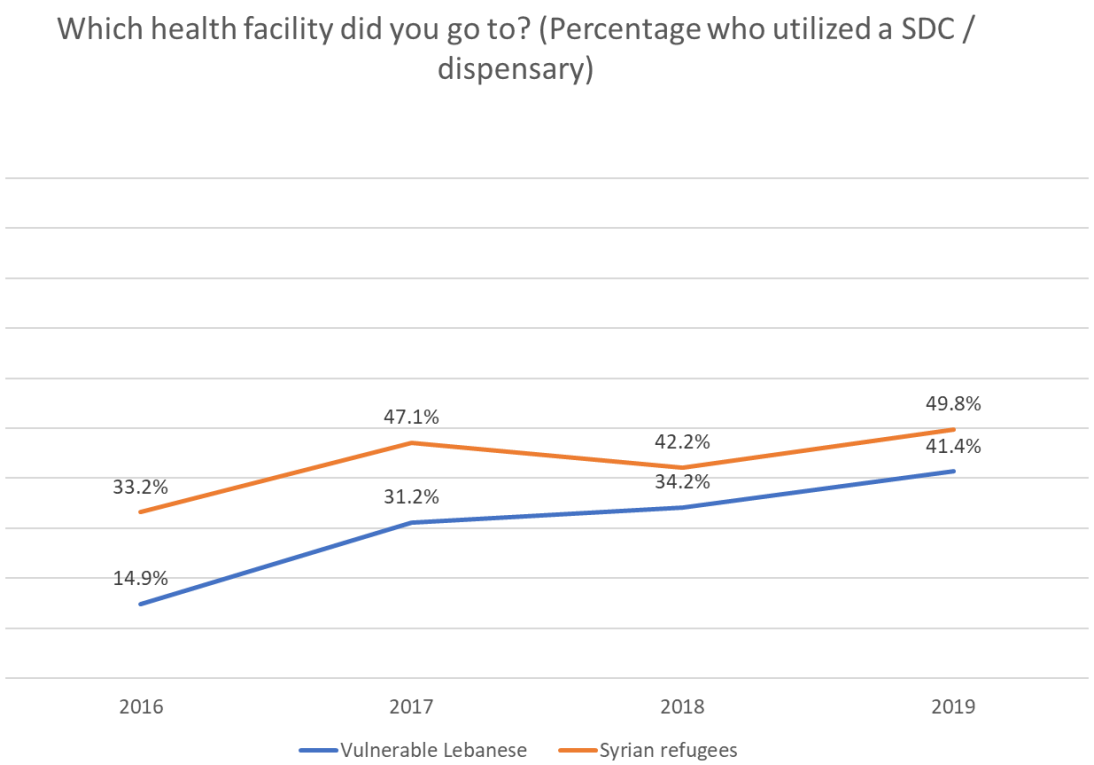


Figure 2 - Which health facility did you go to? (percentage who utilized a SDC Clinic)

Table 2 shows that while the proportion of respondents who reported that they or their children had needed medical care in the 12 months prior to the survey remained consistent, the proportion of both vulnerable Lebanese and Syrian refugees who accessed health care through Social Development Centers (SDCs) / dispensaries increased between 2016 and 2019. Although this trend did not persist significantly between 2018 and 2019, the previous increases in the proportion of vulnerable Lebanese utilizing SDCs as a health contact point were sustained.

Figure 2 shows that the differences in the rate of SDC access between vulnerable Lebanese and Syrian refugees is narrowing.

5.4 Non-Communicable Diseases

Table 4 - Percentage of women who know 2 or more ways to reduce the risk of non-communicable diseases (NCDs)

Nationality	AoI (2016)	AoI (2017)	AoI+ (2018)	2019	Trends (2016 -19)	Trends (2018-19)
Vulnerable Lebanese	60.6% [52.2, 68.5]	65.4% [59.1, 71.2]	57.7% [52.4, 62.8%]	53.7% [48.4, 58.9]	No statistically significant change	No statistically significant change
Syrian refugees	29.3% [23.3, 36.1]	51.8% [43.8, 59.8]	26.7% [23.3, 30.4]	30.4% [27.8, 33.2]	No statistically significant change	No statistically significant change
Total sample	NA	NA	38.0% [33.6, 42.6]	38.1% [34.7, 41.6]	NA	No statistically significant change

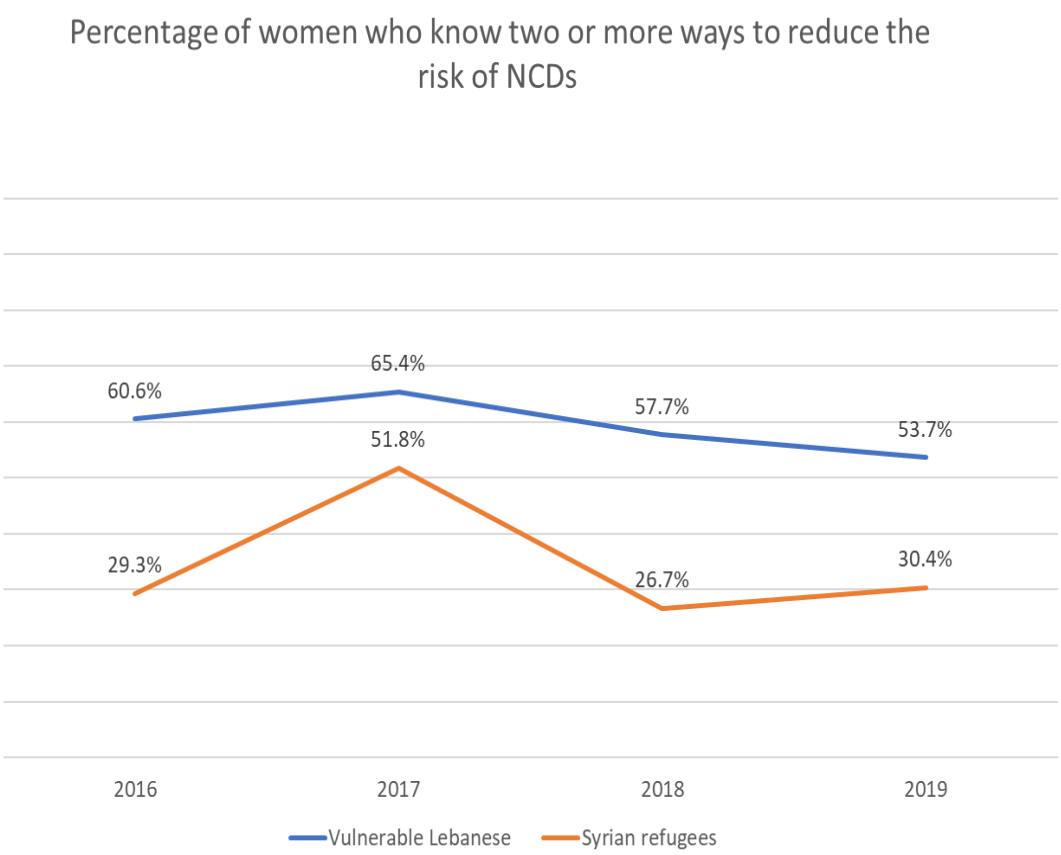


Figure 3 - Percentage of women who know two or more ways to reduce the risk of NCDs

The 2019 KPC found that almost one in five of both Syrian refugees (18.8%) and vulnerable Lebanese (18.6%) reported that they had at least one household member who had been diagnosed with hypertension and/or diabetes. Medair's NCD strategy prioritizes NCD prevention to complement the Lebanese healthcare system's focus on curative activities. A pilot NCD project has been established in one of the six supported MoSA SDCs. However, no significant change has yet been observed in the proportion of women who were able to identify at least two strategies to reduce the risk of NCDs in the project area, and the project target of a 15% increase in this proportion[6] has not been met.

There are positive trends in the proportion of respondents who were able to identify some of the specific risk factors for NCDs, particularly among Syrian refugees. Compared to 2016 and 2018, Syrian refugees were significantly more likely to identify "reduce stress" as an NCD-risk reduction strategy (2016: 11.8%; 2018: 20.1%; 2019: 28.2%); and both groups were less likely to be unable to identify a single risk factor. However, the proportion of women who were able to identify smoking cessation as a way to reduce NCD-risk remains low in both populations in 2019 (8.6% among vulnerable Lebanese and 2.5% among Syrian refugees), with both groups having experienced a deterioration since 2018. This is concerning as Lebanon ranks in the top 20 countries by smoking prevalence among adult females (27%, 2016)[7], with an even higher prevalence among adult men in Lebanon (41)%. The global Tobacco Atlas reports smoking among Syrians is also highly prevalent, at 21% of males and 8.15% of females over the age of 15

[6] Global Affairs Canada – IHA Proposal Multi-year call for proposals World Relief Canada

7 World Bank Data, Smoking prevalence, females (% of adults), https://data.worldbank.org/indicator/SH.PRV.SMOK.FE

years.[8]

Table 5 - Percentage of respondents who identified NCD risk reduction strategy

Response	Nationality	AoI (2016)	AoI (2017)	AoI+ (2018)	2019	Trends (2016 -19)	Trends (2018-19)
Reduce sugar	Vulnerable Lebanese			52.3% [47.9, 56.7]	56.5% [50.4, 62.4]	No statistically significant change	No statistically significant change
	Syrian refugees	32.5% [24.8, 41.4]	54.1% [47.5, 60.5]	27.2% [22.9, 31.9]	42.7% [38.3, 47.2]	No statistically significant change	Improvement
	Total sample	44.3% [37.9, 50.9]	57.8% [52.9, 62.6]		47.3% [43.5, 51.1]	No statistically significant change	NA
Reduce stress	Vulnerable Lebanese			36.2% [31.9, 40.8]	51.2% [46.3, 56.1]	NA	
	Syrian refugees	11.8% [7.2, 18.9]	26.8% [20.1, 34.6]	20.1% [16.6, 24.2]	28.2% [25.7, 30.9]	Improvement	Improvement
	Total sample				35.9% [32.7, 39.1]	NA	NA
Stop smoking	Vulnerable Lebanese	7.2% [4.8, 10.6]	14.5% [10.6, 19.4]	18.1% [14.8, 22.0]	8.6% [6.2, 11.7]	No statistically significant change	Deterioration
	Syrian refugees	0.2% [0.1, 1.0]	10.6% [6.7, 16.2]	5.8% [4.4, 7.6]	2.5% [1.8, 3.5]	Improvement	Deterioration
	Total sample	4.0% [2.5, 6.4]	12.3% [9.3, 16.0]		4.5% [3.4, 5.9]	NA	NA
Exercise	Vulnerable Lebanese			13.7% [10.4, 17.8]	11.3% [8.7, 14.7]	NA	No statistically significant change

8 The Tobacco Atlas, Prevalence, https://tobaccoatlas.org/topic/prevalence/

	Syrian refugees	0.7% [0.2, 2.4]	4.9% [3.0, 7.8]	4.2% [2.8, 6.2]	2.8% [1.9, 3.9]	No statistically significant change	No statistically significant change
	Total sample				5.6% [4.3, 7.3]	NA	NA
Do not know	Vulnerable Lebanese	13.9% [9.3, 20.2]	6.7% [4.3, 10.3]	14.1% [11.2, 17.7]	14.9% [10.8, 20.2]	No statistically significant change	No statistically significant change
	Syrian refugees	48.7% [40.7, 56.8]	17.8% [13.6, 22.9]	39.8% [34.1, 45.8]	39.8% [35.9, 43.9]	No statistically significant change	No statistically significant change
	Total sample	29.6% [23.1, 37.1]	13.0% [9.9, 16.8]		31.5% [27.7, 35.6]	NA	NA
Number of methods known=0	Vulnerable Lebanese			17.3% [14.1,21.0]	16.2% [11.8, 21.9]	Decrease (=improvement) relative to 2016 total sample	No statistically significant change
	Syrian refugees	55.5% [46.4, 64.3]	29.6% [24.3, 35.4]	49.2% [44.2,54.2]	41.5% [37.6, 45.5]	Decrease (=improvement)	No statistically significant change
	Total sample	35.5% [28.1, 43.5]	23.9% [19.8, 28.5]			NA	NA

5.5 Childhood illnesses

Table 6 - Percentage of women who reported that their child experienced a childhood illness in the two weeks prior to the survey.

Response	Nationality	AoI (2016)	AoI (2017)	AoI+ (2018)	2019	Trends (2016 -19)	Trends (2018 -19)
Diarrhea	Vulnerable Lebanese	35.1% [30.4, 40.1]	23.3% [17.5, 30.3]	16.9% [13.6, 20.8]	21.6% [18.0, 25.8]	Decrease (= improvement)	Increase (=deterioration) since 2018
	Syrian refugees			25.1% [22.3, 28.1]	36.5% [33.5, 39.6]	NA	Increase (=deterioration) since 2018
	Total sample	37.8% [33.8, 41.9]	29.0% [23.7, 34.9]		31.6% [28.8, 34.5]	No statistically significant change	NA
Cough	Vulnerable Lebanese	69.4% [62.3, 75.7]	52.7% [46.7, 58.7]	45.0% [39.1, 51.1]	22.6% [19.6, 25.9]	Decrease (= improvement)	Decrease (= improvement)
	Syrian refugees			51.1% [47.7, 54.4]	34.2% [31.6, 37.0]	NA	Decrease (= improvement)
	Total sample	68.5% [62.9, 73.7]	58.6% [53.4, 63.7]		30.3% [28.1, 32.7]	Decrease (= improvement)	NA
Cough and	Vulnerable Lebanese	37.3% [30.8, 44.3]	19.0% [12.5, 27.7]	15.2% [11.9,19.3]	6.9% [5.1, 9.1]	Decrease (= improvement)	Decrease (= improvement)

difficulty breathing	Syrian refugees	38.7% [27.7, 51.0]	25.1% [18.7, 32.9]	20.4% [17.7,23.4]	13.5% [11.9, 15.4]	Decrease (= improvement)	Decrease (= improvement)
	Total sample	37.9% [31.7, 44.6]	22.5% [17.6, 28.2]		11.3% [9.9, 12.9]	NA	NA

Table 6 above shows that there has been sustained significant reduction in childhood illnesses in the project area over the 2016-2019 period. These trends are also evident over 2018-19 with the notable exception of diarrhea, which saw a significant increase in both populations.

Table 7 below shows that no significant change was observed in the proportion of children with diarrhea who received zinc **and** oral rehydration solution (ORS). However, the proportion who received one or the other increased between 2018 and 2019 among Syrian refugees and the total sample (driven by an increase in the rate of ORS use), and among vulnerable Lebanese. A potentially concerning trend was observed in the proportion of children with fast or difficult breathing for whom advice or treatment was sought from an appropriate health facility or provider, which fell by 30 percentage points (40.1%) among vulnerable Lebanese and by 15 percentage points (25.1%) among Syrian refugees. While a single year may not be sufficient to observe genuine change, this emerging trend should be investigated. The project is not on track to meet the target of a 15% increase in the proportion of children with fast or difficult breathing for whom advice or treatment was sought from an appropriate health facility or provider[9].

Table 7 - Treatment of childhood illnesses: Indicators

Indicator	Nationality	AoI (2016)	AoI (2017)	AoI+ (2018)	2019	Trends (2016 -19)	Trends (2018-19)
% of children under 5 years with diarrhea receiving ORS OR zinc supplementation	Vulnerable Lebanese	22.0% [14.0, 32.8]		39.4% [30.9,48.5]	43.9% [37.8, 50.2]	Improvement	No statistically significant change
	Syrian refugees	40.9% [29.6, 53.2]		30.6% [25.1,36.8]	49.3% [44.9, 53.7]	No statistically significant change	Improvement
	Total sample		65.0% [54.1, 74.6]	32.9% [28.0, 38.1]	48.1% [44.3, 51.9]	NA	Improvement
% of children under 5 years with diarrhea receiving ORS AND zinc supplementation	Vulnerable Lebanese			7.0% [3.9,12.3]	4.3% [2.1, 8.3]	NA	No statistically significant change
	Syrian refugees			2.7% [1.5,4.7]	3.4% [2.1, 5.5]	NA	No statistically significant change
	Total sample			3.8% [2.5, 5.7]	3.6% [2.4, 5.4]	NA	No statistically significant change
% of children under 5 with fast or difficult	Vulnerable Lebanese			74.7% [68.6,79.9]	44.7% [38.1, 51.6]	NA	Deterioration
	Syrian refugees			62.5% [57.7,67.1]	46.8% [41.8, 51.8]	NA	Deterioration

[9] Global Affairs Canada – IHA Proposal Multi-year call for proposals World Relief Canada, p 33

breathing for whom advice or treatment was sought from an appropriate health facility or provider	Total sample	55.6% [47.8, 63.2]	59.7% [52.0, 67.0]	66.3% [62.3, 70.1]	46.3% [42.3, 50.3]	No statistically significant change	Deterioration

There is cause for cautious optimism in the trends evident in the treatment of both ARI and diarrhea. A highly significant increase in the proportion of the total sample with cough or fast breathing who were treated with antibiotics between 2016 (20.9%) and 2019 (36.9%) was observed, although data limitations prevent further analysis of this pattern. No other trends were apparent in the medications used to treat cough or fast breathing between 2016 and 2019 or 2018 and 2019, and a non-significant deterioration in the rate of antibiotic use for children with cough or fast breathing among both Syrian refugees and vulnerable Lebanese may hint that these gains are in jeopardy. However, a 2019 analysis of the proportion of children with cough and fast breathing, for which antibiotic use is generally indicated, revealed that the use of antibiotics was higher than among children with cough or fast breathing, at 71.2% among vulnerable Lebanese and 67.1% among Syrian refugees.

An increase of in the use of ORS was observed among children with diarrhea in the total sample between 2016 and 2019 and among Syrian refugees between 2018 and 2019. While a non-significant increase in the proportion of children with diarrhea who received zinc was observed, rates of zinc use remain very low (12.6% among vulnerable Lebanese and 9.0% among Syrian refugees). As zinc supplementation has been shown to reduce the duration and severity of diarrhea, and to prevent subsequent episodes, WHO recommends that children with diarrhea are routinely given zinc[10]. Conversely, the use of antibiotics to treat diarrhea is not indicated in the WHO diarrhea management schedule, yet over half of vulnerable Lebanese children (57.5%) and two thirds of Syrian refugee children (64.4%) were given antibiotics for diarrhea in 2019, representing small (not statistically significant) decreases in this inappropriate treatment.

Table 8 - Treatment of childhood illnesses: Questions

Question	Response	Nationality	AoI (2016)	AoI (2017)	AoI+ (2018)	2019	Trends (2016 -19)	Trends (2018 -19)
What was given to treat the child's	Cough drops Antihistamines	Vulnerable Lebanese	60.8% [53.1, 67.9]	77.7% [68.6, 84.7]	70.6% [64.7, 75.8]	64.5% [55.5, 72.6]	No statistically significant change	No statistically significant change
		Syrian refugees			69.5% [64.1, 74.3]	62.8% [57.5, 67.8]	NA	No statistically significant change

1. [10] WHO e-Library of Evidence for Nutrition Actions (eLENA), Zinc supplementation in the management of diarrhoea, https://www.who.int/elena/titles/zinc_diarrhoea/en/

cough or fast breathing?		Total sample				63.2% [58.7, 67.5]	NA	NA
	Antihistamines	Vulnerable Lebanese	27.1% [20.7, 34.6]	8.4% [4.8, 14.3]	23.0% [17.5,29.8]	18.4% [13.6, 24.5]	No statistically significant change	No statistically significant change
		Syrian refugees			15.6% [12.5, 19.2]	17.6% [14.4, 21.3]	NA	No statistically significant change
		Total sample	20.0% [15.1, 26.0]	6.5% [4.1, 10.2]		17.8% [15.0, 21.0]	No statistically significant change	NA
	Antibiotics	Vulnerable Lebanese			41.5% [34.8,48.5]	33.6% [24.8, 43.7]	NA	No statistically significant change
		Syrian refugees			40.7% [34.6,47.0]	38.1% [33.5, 42.9]	NA	No statistically significant change
		Total sample	20.9% [18.0, 23.8]			36.9% [32.8, 41.3]	Increase	NA
Children with cough AND fast breathing who received antibiotics		Vulnerable Lebanese				71.2% [59.2, 80.7]	NA	NA
		Syrian refugees				67.1% [60.0, 73.6]	NA	NA
		Total sample				68.0% [61.9, 73.4]	NA	NA
What was given to treat the diarrhea?	Nothing	Vulnerable Lebanese	12.8% [7.4, 21.3]	0.5% [0.1, 2.4]	10.2% [5.7,17.7]	NA	NA	NA
		Syrian refugees			16.9% [13.0,21.8]	NA	NA	NA
		Total sample				NA	NA	NA
	ORS	Vulnerable Lebanese			42.7% [32.7,53.4]	49.6% [40.5, 58.7]	NA	No statistically significant change
		Syrian refugees			38.1% [31.8,44.8]	50.9% [46.3, 55.6]	NA	Increase
		Total sample	23.9% [18.1, 31.0]	34.8% [26.7, 44.0]		50.6% [46.4, 54.9]	Increase	NA
	Zinc	Vulnerable Lebanese	6.1% [3.2, 11.3]	30.4% [19.9, 43.4]	10.9% [6.9,16.9]	12.6% [7.5, 20.5]	No statistically significant change	No statistically significant change No statistically significant change
		Syrian refugees	9.9% [4.8, 19.3]	36.0% [27.3, 45.7]	8.7% [6.0,12.4]	9.0% [6.6, 12.1]	No statistically significant change	No statistically significant change No statistically significant change

	Total sample	8.0% [4.8, 13.1]	34.0% [27.1, 41.8]		9.7% [7.5, 12.5]	No statistically significant change	NA
Injection	Vulnerable Lebanese	4.2% [1.7, 9.9]	24.4% [10.6, 46.6]	3.6% [1.6, 8.3]	5.5% [2.9, 10.4]	No statistically significant change	No statistically significant change
	Syrian refugees			6.0% [3.8, 9.5]	4.5% [3.0, 6.6]	NA	No statistically significant change
	Total sample	4.5% [2.5, 8.2]	16.9% [10.0, 27.0]		4.7% [3.4. 6.5]	NA	NA
Home remedies	Vulnerable Lebanese			10.0% [5.6, 17.2]	10.2% [5.6, 17.9]	NA	No statistically significant change No statistically significant change
	Syrian refugees	13.5% [7.8, 22.3]	3.6% [1.3, 9.7]	6.8% [4.1, 11.0]	6.5% [4.2, 10.0]	No statistically significant change	No statistically significant change
	Total sample	11.2% [7.5, 16.4]	5.2% [2.7, 9.8]		7.3% [5.1, 10.3]	NA	NA
Herbal remedies	Vulnerable Lebanese			2.7% [0.9, 8.3]	2.4% [0.8, 6.7]	NA	No statistically significant change
	Syrian refugees			2.3% [1.1, 4.7]	1.8% [1.0, 3.4]	NA	No statistically significant change
	Total sample				1.9% [1.1, 3.3]	NA	NA
Antibiotics	Vulnerable Lebanese			63.6% [54.2, 72.1]	57.5% [49.2, 65.3]	NA	No statistically significant change
	Syrian refugees			74.7% [68.5, 80.1]	64.4% [59.0, 69.4]	NA	No statistically significant change
	Total sample				62.9% [58.5, 67.2]	NA	NA

5.6 Vaccinations

Table 9 - Vaccination coverage rates[11]

Indicator/ Question	Nationality	AoI (2016)	AoI (2017)	AoI+ (2018)	2019	Trends (2016 -19)	Trends (2018 -19)
% of children aged 6 months- 5 years who are vaccinated for measles in clinics coverage area (recall OR vaccination card)	Vulnerable Lebanese	39.8% [32.1, 48.1]	32.5% [26.3, 39.3]		71.3% [65.4, 76.7]	Improvement	NA
	Syrian refugees	19.8% [15.8, 24.4]	11.9% [7.8, 18.2]		53.5% [48.6, 58.4]	Improvement	NA
	Total sample		20.9% [16.1, 26.8]		60.0% [55.7, 64.2]	NA	NA
% of children aged 12 months- 5 years who are vaccinated for measles in clinics coverage area (vaccination cards only)	Vulnerable Lebanese			32.0% [27.5, 36.7]	57.5% [50.4, 64.4]	Improvement	Improvement
	Syrian refugees			23.2% [19.5, 27.4]	44.5% [38.6, 50.5]	Improvement	Improvement
	Total sample				48.8% [44.0, 53.6]	NA	NA
% of children age 12-23 months who received age appropriate vaccination at time of survey	Vulnerable Lebanese			7.7% [4.9,11.9]	32.5% [24.2, 42.1]	NA	Improvement
	Syrian refugees			7.9% [5.4,11.4]	23.6% [17.1, 31.7]	NA	Improvement
	Total sample	10.7% [6.8, 16.4]	6.8% [4.0, 11.3]	7.7% [5.7, 10.4]	26.1% [20.7, 32.4]	Improvement	Improvement
Penta1 + Received (age 0-59 months)	Vulnerable Lebanese		86.5% [80.2, 91.0]	84.7% [81.1, 87.7]	93.2% [89.6, 95.5]	Improvement (relative to 2018)	Improvement
	Syrian refugees	71.4% [61.1, 79.8]	87.1% [81.0, 91.5]	75.6% [71.5, 79.2]	85.4% [81.8, 88.4]	Improvement	Improvement

[11] In 2016 and 2017, the survey relied on a combination of vaccination cards and recall by mothers who did not possess a card. In 2018, the survey excluded recall and relied only on vaccination cards. In 2019, recall data was once again collected, but it was not included in the analysis due to widespread vaccination campaigns.

	Total sample		86.8 [82.6, 90.1]	78.6% [75.6, 81.4]	88.0% [85.2, 90.3]	NA	NA
Penta 2 + Received (age 0-59 months)	Vulnerable Lebanese		83.5% [77.6, 88.1]	74.9% [69.7, 79.4]	83.6% [77.1, 88.4]	NA	No statistically significant change
	Syrian refugees	62.0% [47.5, 74.5]	81.4% [74.9, 86.5]	64.5% [60.1, 68.6]	78.4% [74.0, 82.3]	No statistically significant change	Improvement
	Total sample		82.4 [78.1, 86.0]	68.0% [64.5, 71.3]	76.6% 76.6, 83.3]	NA	NA
Penta 3 + Received (age 0-59 months)	Vulnerable Lebanese		76.9 [70.3, 82.3]	63.1% [57.3, 68.5]	72.6% [66.2, 78.2]	NA	No statistically significant change
	Syrian refugees	51.8% [39.5, 63.9]	71.7% [62.4, 79.5]	49.7% [44.6, 54.8]	64.4% [59.6, 69.0]	No statistically significant change	Improvement
	Total sample		74.2% [68.5, 79.2]	64.2% [50.1, 58.2]	67.1% [63.2, 70.8]	NA	

The proportion of children aged 12-23 months who had received all age-appropriate vaccinations also rose dramatically between the 2018 and 2019 surveys, from 7.7% to 32.5% among vulnerable Lebanese and from 7.9% to 23.6% among Syrian refugees. This can partially be explained by the difference in indicator definition described in the footnote below[12]. While these improvements are impressive, the rates of vaccination coverage remain well below herd immunity levels[13] and fall short of the SPHERE aspiration that the humanitarian community ensure 95% vaccination coverage of children (Sphere child health standard 2.2.1)[14].

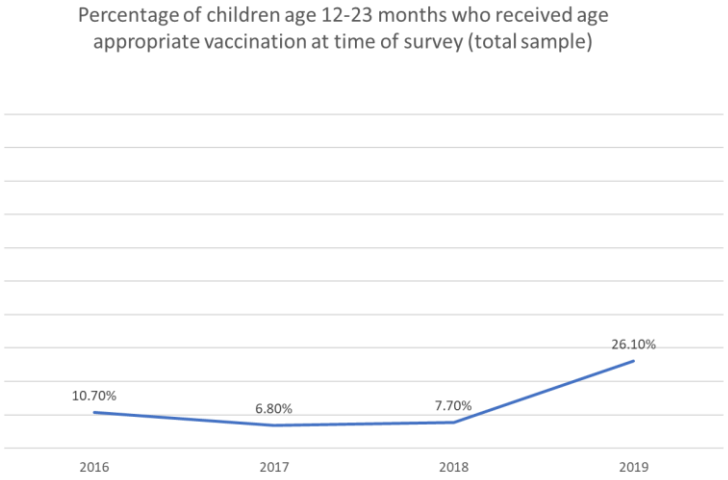


Figure 4 - Percentage of children aged 12-23 months who received age appropriate vaccination at time of survey (total sample)

[12] The indicator definitions are slightly different between 2018 ["Chn 12-17 months: Polio 1, 2, 3 + penta 1,2,3 + HepB1 + Chn 18-23 months: Above + **Polio Booster 2 +** Penta Booster 1 + MMR 2] and 2019 [Chn 12-17 months: Polio 1, 2 + Chn 18-23 months: Above + **Polio Booster 1** + Penta Booster 1 + MMR 2]

13 Funk, S. (2017). Critical immunity thresholds for measles elimination. Centre for the Mathematical Modelling of Infectious Diseases, London School of Hygiene & Tropical Medicine.

[14] Sphere Association, 2018, *Sphere Handbook: The Humanitarian charter and minimum standards in humanitarian response* (4th ed.). Geneva. At URL: www.spherestandards.org/handbook

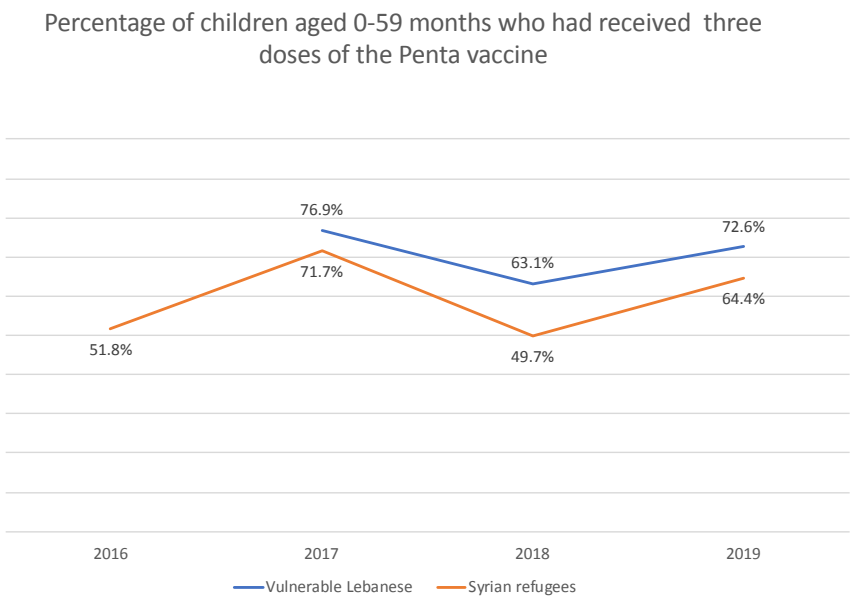


Figure 5 - Percentage of children aged 0-59 months who had received three doses of the Penta vaccine

The 2019 KPC data demonstrates that the proportion of children who had received three doses of the Penta vaccine recovered between 2018 and 2019 (although this improvement was significant only among Syrian refugees), having appeared to have fallen drastically between 2017 and 2018[15].

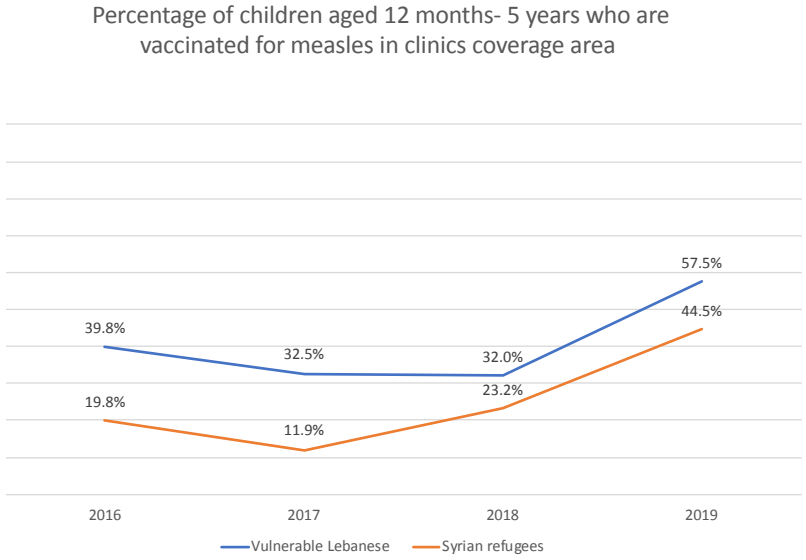


Figure 6 - Percentage of children aged 12 months - 5 years who are vaccinated for measles in clinics coverage area

The 2019 KPC data demonstrates impressive and significant improvements in the rate of measles vaccination coverage between 2018 and 2019, as well as the reverse of a negative trend of declining measles vaccination rates between 2016 and 2018 among vulnerable Lebanese, as shown in Figure 6[16]. However, this result falls well below the project goal of 90% coverage[17].

[15] Note that the 2016 and 2017 data include responses to a recall question as well as vaccination cards, while the 2018 and 2019 data reported here are based on vaccination cards only.
[16] Note that the 2016 and 2017 data include responses to a recall question as well as vaccination cards, while the 2018 and 2019 data reported here are based on vaccination cards only.
[17] Global Affairs Canada – IHA Proposal Multi-year call for proposals World Relief Canada, p33

5.7 Reproductive health care access (including antenatal care, postnatal care and family planning)

Comparable data on reproductive health is generally limited to 2018 and 2019. There were no significant changes in the proportion of Syrian refugee women who reported accessing reproductive health (RH) services in the six months prior to the survey (2018 and 2019) nor the total sample (2016 and 2019 or 2018 and 2019). The proportion of vulnerable Lebanese women who accessed these services fell between 2018 (51.4%) and 2019 (40.0%). No changes were apparent in the proportion of women who felt comfortable and able to access these services as needed between 2018 and 2019.

However, improvements in the proportion of women who are aware of the services available and where these can be accessed were observed. It is unclear why these improvements did not translate into an increase in RH service uptake.

Table 10 - Reproductive health care: indicators

Indicator	Nationality	AoI (2016)	AoI (2017)	AoI+ (2018)	2019	Trends (2016 -19)	Trends (2018 – 19)
% of mothers of children under 5 who report accessing RH support services in the 6 months prior to the survey	Vulnerable Lebanese		39.7% [33.8, 45.9]	51.4% [47.0, 55.7]	40.0% [36.1, 44.0]	NA	Deterioration
	Syrian refugees		58.3% [51.7,64.7]	43.6% [38.6, 48.7]	41.6% [38.7, 44.5]	NA	No statistically significant change
	Total sample	50.1% [44.7, 55.5]	54.8% [49.8, 59.7]	46.2% [42.5, 50.0]	40.9% [38.6, 43.2]	No statistically significant change	No statistically significant change
% Women in the targeted communities who correctly identify available RH services	Vulnerable Lebanese			90.0% [85.3, 93.3]	89.8% [85.9, 92.8]	NA	No statistically significant change
	Syrian refugees			76.6% [68.3. 83.2]	88.7% [85.6, 91.2]	NA	Improvement
	Total sample			81.1% [75.2, 85.9]	89.1% [86.7, 91.0]	NA	Improvement
% WGMB in the targeted communities who correctly report where to access RH services	Vulnerable Lebanese			72.0% [66.2, 77.2]	89.2% [85.3, 92.1]	NA	Improvement
	Syrian refugees			24.4% [20.8, 28.5]	87.6% [84.5, 90.1]	NA	Improvement
	Total sample			40.4% [34.9, 46.2]	88.1% [85.8, 90.1]	NA	Improvement
% Women in the targeted communities who report that they would be comfortable	Vulnerable Lebanese			85.6% [82.9, 88.0]	84.4% [81.7, 87.5]	NA	No statistically significant change
	Syrian			80.5% [77.8, 83.0]	76.4% [73.4, 79.1]	NA	No statistically

and able to access these (RH) services as needed	refugees						significant change
	Total sample			82.2% [80.2, 84.1]	79.2% [76.8, 81.4]	NA	No statistically significant change
% of mothers of children under 5 years receiving RH services who report satisfaction with support provided	Vulnerable Lebanese			98.2% [No CI]	97.0% [93.6, 98.7]	NA	NA
	Syrian refugees			97.3% [No CI]	97.3% [95.4, 98.5]	NA	NA
	Total sample		93.8% [No CI]	97.6% [No CI]	97.2% [95.7, 98.2]	NA	No statistically significant change

The proportion of women who were able to identify the types of RH services available to them (postnatal care (PNC), antenatal care (ANC), family planning (FP)and sexually transmitted infection (STI) treatment) has generally increased since 2016. The proportion of Syrian refugees who were aware of PNC services almost doubled from 37.2% in 2016 to 66.8% in 2019. The rate of awareness of family planning services tripled among this group from 7.3% in 2016 to 21.7% in 2019. Year-on-year improvements also registered in the proportion of Syrian refugees who were aware of PNC services, ANC services, FP services and STI treatment, indicating that success in awareness raising for these services over the past year has been successful among this populations. Year-on-year improvements were also observed for vulnerable Lebanese in the identification of each of these services, although the improvements reached significance only for FP and STI treatment.

Women in both populations were significantly more likely to be aware in 2019 that reproductive health services could be accessed through SDCs than they were in 2016. These changes represent large increases between 2016 and 2018, which were maintained (but not continued) in 2019. They also reflected in an increase between 2016 and 2019 in the proportion of vulnerable Lebanese women and the total sample who accessed RH services through an SDC (no data available for Syrian refugees in 2016).

Table 11 - Reproductive health care: questions

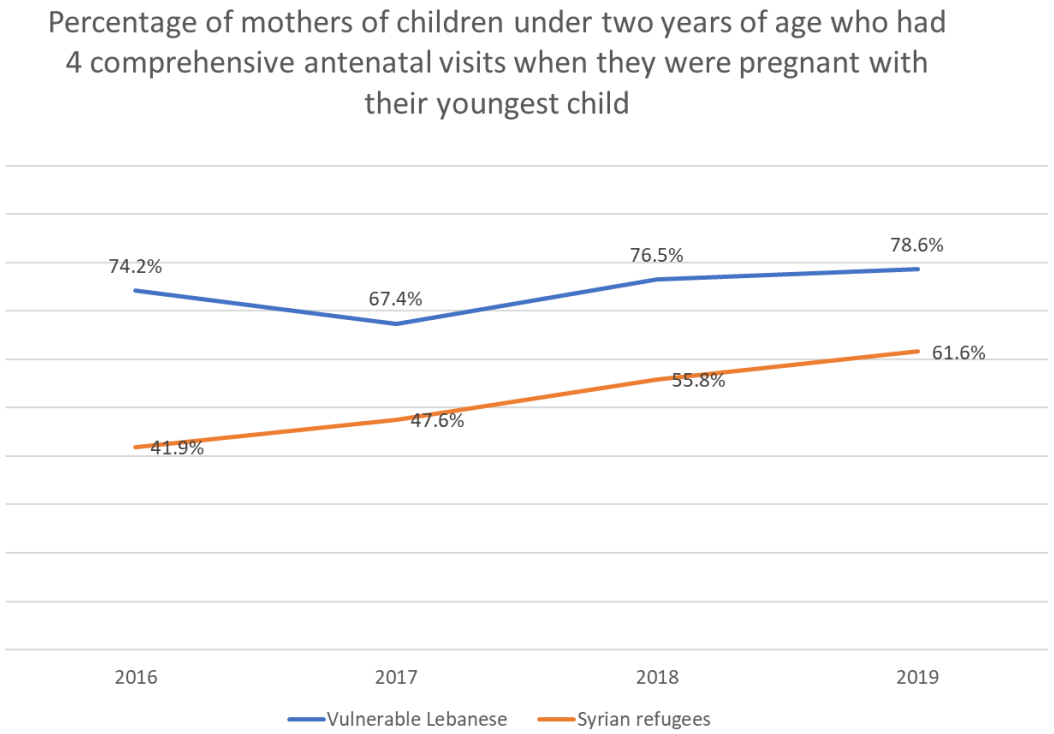
Question	Response	Nationality	AoI (2016)	AoI (2017)	AoI+ (2018)	2019	Trends (2016 -19)	Trends (2018 -19)
What types of services are available for reproductive health in your community?	PNC	Vulnerable Lebanese			69.7% [63.2, 75.5]	75.9% [71.1, 80.0]	NA	No statistically significant change
		Syrian refugees	37.2% [31.3, 43.4]	53.7% [44.4, 62.8]	54.0% [50.7, 57.4]	66.8% [63.2, 70.2]	Improvement	Improvement
		Total sample			59.7% [56.2, 63.2]	69.8% [66.8, 72.7]	NA	No statistically significant change
	ANC	Vulnerable Lebanese	87.3%		86.6% [80.9,90.7]	88.4% [84.4, 91.4]	NA	No statistically significant change
		Syrian refugees	75.8%		75.0% [67.0,81.6]	86.5% [83.2, 89.3]	NA	Improvement
		Total sample				87.2% [84.6, 89.3]	NA	NA
	FP	Vulnerable	20.8%		17.3% [13.5,21.9]	27.2% [23.9, 30.7]	NA	Improvement

		Lebanese						
		Syrian refugees	7.3%		9.4% [6.4,13.5]	21.7% [18.9, 24.7]	NA	Improvement
		Total sample				23.5% [21.1, 26.1]	NA	NA
	STI Treatment	Vulnerable Lebanese			13.4% [9.7,18.3]	29.4% [24.4, 35.0]	NA	Improvement
		Syrian refugees			9.6% [6.6,14.0]	26.9% [23.8, 30.2]	NA	Improvement
		Total sample				27.8% [25.1, 30.6]	NA	NA
	Do not know	Vulnerable Lebanese			6.4% [4.5, 9.2]	6.5% [4.3, 9.7]	NA	No statistically significant change
		Syrian refugees	10.4% [7.3, 14.7]	3.6% [2.3, 5.8]	8.4% [6.7, 10.5]	7.0% [5.0, 9.6]	No statistically significant change	No statistically significant change
		Total sample	6.4% [4.5, 9.2]	3.4% [2.3, 4.9]	7.8% [6.4, 9.3]	6.8% [5.3, 8.7]	NA	No statistically significant change
Where can you access reproductive health services in your community?	SDC	Vulnerable Lebanese	6.8% [4.1, 11.1]	19.8% [14.9, 25.8]	27.2% [21.9, 33.2]	31.1% [25.3, 37.5]	Increase	No statistically significant change
		Syrian refugees	26.4% [19.0, 35.5]	46.8% [39.8, 53.9]	71.2% [66.5, 75.5]	69.6% [64.8, 74.0]	Increase	No statistically significant change
		Total sample	15.7% [11.2, 21.6]	34.9% [28.8, 41.6]	54.8% [49.0, 60.5]	56.7% [51.4, 61.9]	Increase	No statistically significant change
Where did you access those services? (asked if any RH services sought in past 6months)	SDC	Vulnerable Lebanese	4.8% [2.2, 10.0]	19.9% [12.6, 30.1]	25.3% [20.4, 31.0]	31.1% [25.3, 37.5]	Increase	No statistically significant change
		Syrian refugees			72.0% [67.4, 76.2]	69.6% [64.8, 74.0]	NA	No statistically significant change
		Total sample	17.6% [11.2, 26.5]	38.2% [29.8, 47.2]		56.7% [51.4, 61.9]	Increase	NA
For any type of reproductive healthcare needs, would you feel comfortable accessing one of these services?	Yes	Vulnerable Lebanese	94.7% [91.5, 96.7]	89.1% [84.2, 92.6]	91.1% [88.6, 93.0]	96.2% [94.2, 97.5]	No statistically significant change	Improvement
		Syrian refugees	93.9% [89.7, 96.4]	84.5% [79.0, 88.9]	89.9% [87.8, 91.8]	95.5% [93.6, 96.8]	No statistically significant change	Improvement
		Total sample	94.3% [91.0, 96.0]	86.5% [82.7, 89.6]	90.3% [88.7, 91.7]	95.7% [94.4, 96.7]	No statistically significant change	Improvement

5.8 Antenatal care (ANC)

Table 12 - Percentage of mothers of children under two years of age who had 4 antenatal visits when they were pregnant with their youngest child

Nationality	AoI (2016)	AoI (2017)	AoI+ (2018)	2019	Trends (2016 -19)	Trends (2018-19)
Vulnerable Lebanese	74.2% [63.3, 82.8]	67.4% [58.4, 75.3]	76.5% [70.7, 81.4]	78.6% [74.6, 82.2]	No statistically significant change	No statistically significant change
Syrian refugees	41.9% [32.4, 52.1]	47.6% [40.7, 54.6]	55.8 [51.1, 60.3]	61.6% [58.2, 65.0]	Improvement	No statistically significant change
Total sample			61.5% [57.3, 65.5]	66.5% [63.3, 69.5]	NA	No statistically significant change



Year-on-year changes in the proportion of mothers who had at least four antenatal visits when they were pregnant with their youngest child were not significant for either group. Yet, the proportion of Syrian refugee mothers of children aged under two years who reported that they had received at least four ANC visits while pregnant with their youngest child has increased significantly from 2016 (41.9%) to 2019 (61.6%). This is the cumulative effect of small, positive (but non-significant) changes each year resulting in an upward trend, visible in figure 7, that is apparent for both groups and particularly strong among Syrian refugees. However, these figures are well below the project target of at least 90% for this indicator.

No statistically significant changes were observed between 2016 and 2019 or 2018 and 2019 where women accessed ANC or how likely they were to have received ANC in the first or ninth month of pregnancy.

Figure 7 - Percentage of mothers of children under two years of age who had 4 comprehensive antenatal visits when they were pregnant with their youngest child

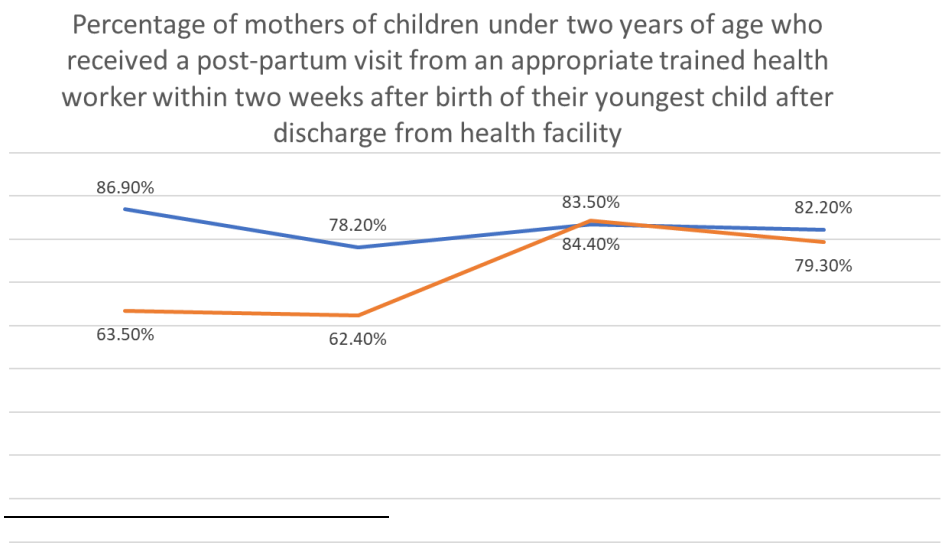
Table 13 - Antenatal care seeking

Question	Indicator	Nationality	AoI (2016)	AoI (2017)	AoI+ (2018)	2019	Trends (2016 -19)	Trends (2018-19)
During your pregnancy with your youngest child, where did you receive antenatal care?	Private clinic	Vulnerable Lebanese	74.9% [69.7, 79.5]	51.7% [43.1, 60.2]	84.9% [81.3,87.8]	83.4% [79.1, 87.0]	No statistically significant change	No statistically significant change
		Syrian refugees	34.1% [27.6,41.2]	24.2% [18.1,31.6]	38.1% [34.0,42.4]	41.8% [37.2, 46.4]	No statistically significant change	No statistically significant change
		Total sample	57.3% [50.0, 64.3]	36.3% [29.7, 43.4]			NA	NA
	SDC Clinic	Vulnerable Lebanese			17.0% [13.4, 21.3]	15.3% [11.7, 19.9]	NA	No statistically significant change
		Syrian refugees			59.2% [54.2,64.1]	54.8% [50.2, 59.4]	NA	No statistically significant change
		Total sample			43.3% [37.8, 49.0]	41.4% [36.5, 46.5]		NA
During your pregnancy with your youngest child, how many months pregnant were you when you received antenatal care?	First ANC +1st month	Vulnerable Lebanese			58.6% [53.1, 63.9]	54.0% [48.2, 59.7]	NA	No statistically significant change
		Syrian refugees	28.7% [22.2, 36.2]	43.4% [38.4, 48.5]	35.2% [31.9, 38.8]	32.1% [29.6, 34.8]	No statistically significant change	No statistically significant change
		Total sample					NA	NA
	Last ANC +9th month	Vulnerable Lebanese			82.5% [77.3,86.8]	87.7% [85.3, 89.8]	NA	No statistically significant change
		Syrian refugees	86.2% [80.6, 90.3]	71.9% [62.6, 79.7]	78.8% [74.7,82.4]	80.4% [78.0, 82.6]	No statistically significant change	No statistically significant change
		Total sample					NA	

5.9 Postnatal care (PNC)

Table 14 - Percentage of mothers of children under two years of age who received a post-partum visit from an appropriate trained health worker within two weeks after birth of their youngest child after discharge from health facility

Nationality	AoI (2016)	AoI (2017)	AoI+ (2018)	2019[18]	Trends (2016 -19)	Trends (2018-19)
Vulnerable Lebanese	86.9% [80.4, 91.5]	78.2% [70.8, 84.2]	83.5% [77.8, 88.0]	82.2% [76.7, 86.6]	No statistically significant change	No statistically significant change
Syrian refugees	63.5% [56.2, 70.3]	62.4% [55.4, 60.0]	84.4% [80.0, 87.9]	79.3% [74.7, 83.2]	Improvement	No statistically significant change
Total sample			84.1% [80.7, 86.9]	80.3% [76.8, 83.3]	NA	No statistically significant change



While no significant change was observed in the proportion of vulnerable Lebanese who received a post-partum visit from an appropriate trained health worker within two weeks after birth of their youngest child 2016 and 2019 or 2018 and 2019, this standard of care was significantly more likely to have been met for Syrian refugees in 2019 (79.3%) than in 2016 (63.5%). This improvement represents slight decrease since 2018 (84.4%) but no statistically significant loss of the impressive gains made between 2016 and 2018. Figure 8 shows that the difference in PNC access rates between Syrian refugees and vulnerable Lebanese has lessened dramatically, and is no longer significant.

No notable trends in the data were observed in terms of where post-partum care was accessed, with the exception of an increase in the proportion of Syrian refugees who sought private care through private clinics between 2016 (53.3%) and 2019 (30.3%). This was presumably offset by an increase in the utilization of

[18] For consistency with previous data, a different calculation to that used in "Report 1" was used in the longitudinal analysis for the proportion of mothers of children under two years of age who received a post-partum visit from an appropriate trained health worker. While the 2018 and previous years used the proportion of women who had received a PNC visit from anyone as a denominator, all mothers were used as the denominator in Report 1. In this analysis, we have followed the 2018 methodology.

dispensaries amongst this group, but no 2016 or 2017 data of relevance is available to confirm this hypothesis.

Figure 8 - Percentage of mothers of children under two years of age who received a post-partum visit from an appropriate trained health worker within two weeks after birth of their youngest child after discharge from health facility

Table 15 - Percentage location of post-partum care access

Response	Nationality	AoI (2016)	AoI (2017)	AoI+ (2018)	2019	Trends (2016-19)	Trends (2018-19)
Your residence	Vulnerable Lebanese	4.8% [1.9, 11.6]	50.5% [41.4, 59.6]			NA	NA
	Syrian refugees	15.5% [8.7, 26.1]	65.6% [56.0, 74.0]			NA	NA
	Total sample	8.4% [5.0, 13.8]	59.1% [52.1, 65.8]			NA	NA
Hospital	Vulnerable Lebanese		17.5% [12.8, 23.4]	29.4% [25.0, 34.1]	25.7% [20.8, 31.3]	NA	No statistically significant change
	Syrian refugees	34.1% [22.5, 48.0]	10.8% [8.3, 13.9]	32.4% [28.1, 37.0]	28.8% [24.9, 33.1]	No statistically significant change	No statistically significant change
	Total sample	27.2% [20.8, 34.7]	13.7% [11.0, 16.9]	30.9% [27.8, 34.2]	27.6% [20.8, 31.3]	No statistically significant change	No statistically significant change
Private clinic	Vulnerable Lebanese	63.2% [55.1, 70.6]	21.8% [16.4, 28.5]	64.3% [58.7, 69.6]	68.5% [62.4, 74.0]	No statistically significant change	No statistically significant change
	Syrian refugees	53.3% [45.5, 60.9]	13.4% [9.8, 17.9]	24.3% [20.9, 28.1]	30.3% [25.6, 35.5]	Decrease	No statistically significant change
	Total sample	53.3% [45.5, 60.9]	13.4% [9.8, 17.9]	35.7% [30.7, 41.1]	45.7% [40.3, 51.3]	No statistically significant change	No statistically significant change
SDC Clinic	Vulnerable Lebanese			12.6% [9.2, 17.0]	6.4% [4.4, 9.2]	NA	No statistically significant change
	Syrian refugees			42.2% [37.3,47.2]	41.2% [37.1, 45.5]	NA	No statistically significant change
	Total sample			28.4% [23.9, 33.4]	27.2% [22.7, 32.1]	NA	No statistically significant change

5.10 Family planning

Table 16 - Family planning

Indicator	Nationality	AoI (2016)	AoI (2017)	AoI+ (2018)	2019	Trends (2016 -19)	Trends (2018-19)
% of mothers of children under 5 who report discussing FP with a trained service provider in the 12 months preceding the survey	Vulnerable Lebanese			44.5% [35.6, 53.8]	22.0% [15.4, 30.5]	NA	Deterioration
	Syrian refugees			32.2% [25.0, 40.3]	21.3% [15.9, 27.9]	NA	No statistically significant change
	Total sample	28.8% [23.6, 34.6]	23.2% [18.2, 29.0]	36.7% [30.9, 42.8]	21.6% [17.3, 26.5]	No statistically significant change	Deterioration
% of mothers of children 0-23 months who are using a modern contraceptive method	Vulnerable Lebanese			27.3% [21.4, 34.1]	54.2% [46.8, 61.4]	NA	Improvement
	Syrian refugees			15.8% [12.8, 19.3]	41.8% [34.2, 49.9]	NA	Improvement
	Total sample	27.3% [22.3, 32.8]	26.9% [21.8, 32.7]	19.0% [16.1, 22.2]	49.4% [43.8, 55.0]	Improvement	Improvement

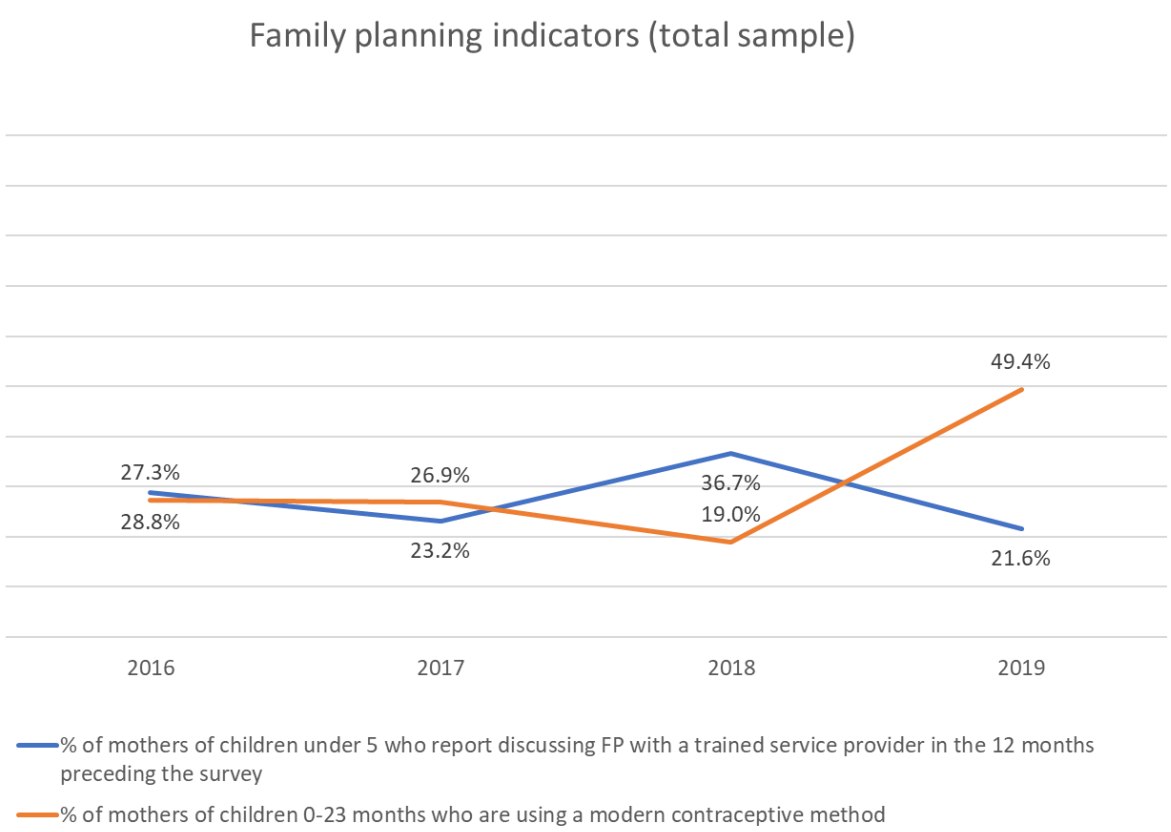


Figure 9 - Family planning indicators (total sample)

The 2019 KPC suggested that there have been large year-on-year deteriorations in the rate of respondents discussing family planning with trained service providers in both populations. However, inspection of the longitudinal data suggests that the 2018 data might have been exaggerated as the 2019 findings are consistent with the findings in 2016 and 2017.

Genuine change is more likely apparent in the longitudinal data for the prevalence of contraceptive use. Figure 9 shows that the proportion of mothers of children aged 0-23 months in the total sample who are using a modern contraception method increased from 27.3% in 2016 to 49.4% in 2019. There were significant improvements in this measure for both populations between 2018 and 2019. This is highly encouraging and represents the achievement of Medair's target of a 20% increase in the proportion of women who are using a modern contraceptive method,[19] likely associated with Medair's support of "additional health staff who are dedicated to the provision of FP services in the SDCs" and continued community based maternal health project.[20]

[19] Global Affairs Canada – IHA Proposal Multi-year call for proposals World Relief Canada, p35
[20] Global Affairs Canada – IHA Proposal Multi-year call for proposals World Relief Canada, p8

5.11 Breastfeeding practices

The 2019 data shows no significant change in the proportion of children aged 0-6 months who are exclusively breastfed (calculation method 1)[21] between 2016 and 2019 or 2018 and 2019, and demonstrate that the project is not on track to meet the goal of a 20% increase in the proportion of infants under six months who are exclusively breastfed[22]. While the data indicates that there has been marked and significant deterioration in the rate of children aged 0-23 months who were exclusively breastfed for the first six months, differences in calculations limit the usefulness of this comparison. Furthermore, because of the two-year age span considered in this indicator, single year comparisons may not reveal the current condition of breastfeeding practices among the target populations.

Table 17 - Percentage of infants 0 - 5 months who are exclusively breastfed

Indicator	Nationality	AoI (2016)	AoI (2017)	AoI+ (2018)	2019	Trends (2016 -19)	Trends (2018 -19)
% of infants 0-6 months who are exclusively breastfed (calculation method 1)	Vulnerable Lebanese	25% [20.6, 29.4]		25.4% [17.3,35.7]	25.4% [17.5, 35.2]	No statistically significant change	No statistically significant change
	Syrian refugees	35% [26.6, 43.4]		32.9% [27.8,38.5]	32.8% [27.5, 38.5]	No statistically significant change	No statistically significant change
	Total sample			30.6% [26.2, 35.5]	30.7% [26.2, 35.6]	NA	No statistically significant change
% of infants 0-6 months who are exclusively breastfed (calculation method 2)	Vulnerable Lebanese			22.0 [16.9, 28.1]	6.6% [4.0, 10.6]	NA	Deterioration
	Syrian refugees			28.0% [24.9, 31.3]	11.1% [9.2, 13.4]	NA	Deterioration
	Total sample			26.3% [23.5, 29.3]	9.8% [8.2, 11.7]	Deterioration	Deterioration

5.12 Access to psychosocial services

The KPC data on psychosocial service (PSS) access is generally limited to 2018 and 2019. It demonstrates year-on-year improvements across the board in the proportion of respondents who are aware of the PSS services available and how to access these services; and in the proportion of women who reported that they would feel comfortable and able accessing these services. Despite these improvements, respondents were not more likely to have accessed PSS support services in the six months prior to the survey in

[21] Infants who are breastfed and not given any other foods or fluid except breast milk over the previous 24 hours
[22] Global Affairs Canada – IHA Proposal Multi-year call for proposals World Relief Canada, p35

2019 than they were in 2018 or to have discussed PSS with a trained service provider in the 12 months preceding the survey. Vulnerable Lebanese women were in fact less likely to have discussed PSS with a trained health provider in the six months prior to the survey. PSS access remains extremely low: just 2.8% of vulnerable Lebanese women and 3.25% of Syrian refugees had accessed PSS in the six months prior to the 2019 KPC survey. This is not explained by the quality of the services, with almost universal satisfaction reported among women who had accessed these services.

Table 18 - Access to PSS

Indicator	Nationality	AoI (2016)[23]	AoI (2017)[24]	AoI+ (2018)	2019	Trends (2016 -19)	Trends (2018 -19)
% Women in the targeted communities who correctly identify available PSS services	Vulnerable Lebanese			23.6 [17.9, 30.4]	29.4% [25.2, 34.0]	NA	No statistically significant change
	Syrian refugees			18.4% [14.8, 22.5]	35.9% [32.2, 39.7]	NA	Improvement
	Total sample			20.1% [17.0, 23.6]	33.8% [30.8, 36.8]	NA	Improvement
% Women in the targeted communities who correctly report where to access PSS services	Vulnerable Lebanese			10.1% [7.6, 13.4]	48.9% [41.1, 56.8]	NA	Improvement
	Syrian refugees			11.9% [9.4, 14.8]	35.8% [32.1, 39.7]	NA	Improvement
	Total sample			11.3% [9.4, 13.4]	40.0% [36.1, 44.0]	NA	Improvement
% Women in the targeted communities who report that they would be comfortable and able to access these (PSS) services as needed	Vulnerable Lebanese			40.7% [36.1, 45.6]	53.7% [49.0, 58.3]	NA	Improvement
	Syrian refugees			33.1% [28.8, 37.8]	46.6% [44.3, 49.0]	NA	Improvement
	Total sample			35.7% [32.4, 39.1]	49.0 [46.7, 51.2]	NA	Improvement
% of mothers of children under 5 years who report accessing PSS support services in the 6 months prior to the survey	Vulnerable Lebanese			4.1% [2.6, 6.5]	2.8% [1.7, 4.7]	NA	No statistically significant change
	Syrian refugees			1.6% [1.0, 2.5]	3.2% [2.1, 4.9]	NA	No statistically significant change

[23] Combined answer not reported in 2016
[24] Data from the PSS section in 2017 cannot be interpreted due to a constraint error- quote from 2017 report

	Total sample		2.5% [1.7, 3.5]	3.1% [2.2, 4.3]	NA	No statistically significant change
% of mothers of children under 5 years who report discussing PSS with a trained service provider in the 12 months preceding the survey	Vulnerable Lebanese		24.5% [18.4,31.8]	6.1% [4.4, 8.4]	NA	Deterioration
	Syrian refugees		17.6% [13.7,22.3]	17.1 [14.5, 20.0]	NA	No statistically significant change
	Total sample		19.9% [16.5, 23.8]	13.4% [11.3, 15.8]	NA	Deterioration
% of mothers of children under 5 years receiving PSS services who report satisfaction with support provided	Vulnerable Lebanese	77% [64.3, 89.7]	97.6% [93.0, 99.9]	95.0% [70.2, 99.4]	No statistically significant change	No statistically significant change
	Syrian refugees	48% [33.2,62.8]	95.5% [89.4,99.9]	100.0% [100.0, 100.0]	Improvement	Improvement
	Total sample		96.5%	98.5% [89.8, 99.8]	NA	NA

6. Recommendations for further qualitative study

This longitudinal study, combined with Report 1 of this consultancy, reveals several areas that require further investigation. The following recommendations for further qualitative study should be considered in tandem with the Recommendations outlined in Report 1.

1. **Attitudinal and socio-cultural barriers that prevent mothers from successfully exclusively breastfeeding**. While WHO recommends that infants should be exclusively breastfed for the first six months of life, the KPC demonstrated low rates of exclusive among both populations studied. Longitudinal comparisons reveal no improvement, despite Medair's efforts to promote appropriate breastfeeding through a growing network of trained community health volunteers and the establishment of women's groups. Furthermore, KPC results for Syrian refugees are substantially lower than the 2009 World Bank estimates for Syria, suggesting that conflict and displacement has resulted in a loss of a previous cultural norm to exclusively breastfeed among Syrian refugees. This is consistent with global evidence that humanitarian emergencies and refugee situations result in disruption of breastfeeding practices, for example through the loss of support systems. In addition to supporting vulnerable Lebanese to increase the rate of exclusive breastfeeding, **Medair should carry out in-depth behavioral insight research to confirm how and why these practices have been lost among Syrian refugees.**

2. **Barriers to accessing family planning services and tools.** Although longitudinal comparisons demonstrate that the uptake of contraception has improved in the total sample from 27.3% in 2016 to 49.4% in 2019 and that the project target of a 20% improvement has been met, a high rate of unplanned pregnancy among both Syrian refugees and vulnerable Lebanese persisted in 2019 (43.6% and 33.0%). Barriers to the use of contraception, including an apparent misconception that breastfeeding is a reliable contraceptive method and/or incompatible with modern contraceptive methods, require **a full behavioral insight analysis of why more women do not use modern contraceptives, including their knowledge, attitudes and beliefs, as well as those of their husbands and other family members.**

3. **Key contributive factors to NCDs in the target populations.** Just under 20% of respondents reported that one or more of their family members had been diagnosed with hypertension and/or diabetes. Despite Medair's prioritization of NCD prevention, the NCD pilot program is currently operating in only one SDC. No significant change has been observed in the proportion of women who were able to identify at least two strategies to reduce the risk of NCDs. Consideration should be given to **investigating the primary causes of NCDs in these populations (for example, smoking, poor diet or lack of exercise).** Along with the evaluation of the existing NCD pilot program, this information should be used to develop multi-stimuli awareness programs that focus on these causes and the social, economic and structural factors that reinforce those negative behaviors.

4. **Sub-optimal vaccination rates.** There have been impressive gains in vaccination coverage over the project period. However, vaccination coverage rates remain well below herd immunity levels and fall short of the SPHERE aspiration that the humanitarian community ensure 95% vaccination coverage of children. **In addition to analyzing why these rates remain low, the success factors that have driven the increase in coverage should be investigated** with a view to expanding and replicating these aspects of the vaccination program. Special attention should be paid to cooperative relationship between public, private and NGO vaccine providers, as sub-optimal cooperation has been shown to inhibit vaccine provision to Lebanese children and Syrian refugees in Lebanon[25].

[25] Mansour, Z., Hamadeh, R., Rady, A., Danovaro-Holliday, M. C., Fahmy, K., Said, R., ... & Ammar, W. (2019). Vaccination coverage in Lebanon following the Syrian crisis: results from the district-based immunization coverage evaluation survey 2016. BMC public health, 19(1), 58.

5. **Low rates of appropriate diarrhea treatment.** Just 3.6% of children with diarrhea received ORS and zinc per WHO guidelines. The 2019 KPC survey results evidenced an increase in the use of ORS among children with diarrhea within the total sample between 2016 and 2019 and among Syrian refugees between 2018 and 2019. While a non-significant increase in the proportion of children with diarrhea who received zinc was observed, rates of zinc use remain very low (12.6% among vulnerable Lebanese and 9.0% among Syrian refugees). As zinc supplementation has been shown to reduce the duration and severity of diarrhea and to prevent subsequent episodes, WHO recommends that children with diarrhea are routinely given zinc[26]. Zinc is generally well-tolerated, inexpensive and highly effective, so it is unclear why this protocol is not being observed. **A study of the causes of the low rates of zinc use should be initiated, comprising an audit of health clinics to determine prescribing practices and preferences as well as interviews with parents and care givers to determine their willingness to utilize zinc.**

6. **Inappropriate use of antibiotics in the treatment of diarrhea.** The use of antibiotics to treat diarrhea is not indicated in the WHO diarrhea management schedule, yet over half of vulnerable Lebanese children (57.5%) and two thirds of Syrian refugee children (64.4%) were given antibiotics for diarrhea. While this rate has fallen since 2018, the change was not significant. It is unclear what is driving the high reported rates of antibiotic use for diarrhea, but potential causes include inappropriate prescribing practices and an inaccurate assumption by mothers that medications given to their children are antibiotics. Further training is urgently required for health staff in the former case, while improved communications between health staff and parents are indicated in the latter case. **The low rates of zinc use and frequent inappropriate use of antibiotics in the treatment of diarrhea should be studied and redressed, for example through an observational study in health clinics.**

7. **Persistently low rates of psychosocial service uptake.** Despite improvements in the proportion of respondents who are aware of the PSS services available and how to access these services, and in perceived comfort and ability to access these services, just 2.8% of vulnerable Lebanese women and 3.25% of Syrian refugees had accessed PSS in the six months prior to the 2019 KPC survey. The improvements in awareness of, comfort in and ability to access these services has not translated to greater uptake and warrants further investigation into the low use of PSS among these populations. A preference for keeping psychosocial matters to oneself or between family and friends were identified in Report 1 as a key inhibitor of PSS uptake. **Consideration should be given to investigating psychological, behavioral and socio-cultural barriers to PSS uptake, and Medair should consider pivoting away from awareness raising and toward addressing the identified underlying causes of the low rates of PSS access.**

8. **Stagnant rates of RH uptake.** The proportion of women who were able to identify the types of RH services available to them has generally increased since 2016, particularly among Syrian refugees. However, these improvements did not translate into an increase in RH service uptake, with no significant changes in the proportion of women who reported accessing RH services in the six months prior to the survey other than a decline among vulnerable Lebanese between 2018 (51.4%) and 2019 (40.0%). Report 1 identified financial constraints as a primary barrier to RH service access. **The reasons for which RH uptake has not improved despite raised awareness should be further investigated, and strategies to mitigate financial and other concerns should be developed.**

End of report

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2. [26] WHO e-Library of Evidence for Nutrition Actions (eLENA), Zinc supplementation in the management of diarrhoea, https://www.who.int/elena/titles/zinc_diarrhoea/en/

7. References

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