Middle East Polio

Outbreak Response Review
April 2014

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Prepared by World Health Organization and UNICEF

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EXECUTIVE SUMMARY

On 28 October 2013, polio returned to the Middle East. As of 30 March 2014, 36 cases have been reported in Syrian Arab Republic (Syria) and one case in Iraq.

The humanitarian situation in the Syria remains of grave concern and, as the conflict enters its fourth year, insecurity, and violence continue to force the people of Syria to seek safety and protection elsewhere. Disruption of health services and infrastructure, low levels of routine immunisation and prolonged wild poliovirus circulation places the region at high risk of further outbreaks of wild poliovirus.

A comprehensive strategic plan for the Middle East polio outbreak response was implemented in November 2013, with the goal of interrupting wild poliovirus transmission in Syria and surrounding countries by the end of March 2014. This report presents the results of a three-month polio outbreak response review, conducted with the aim of determining the effectiveness of the response and making recommendations for future interventions. The review sought to collate and analyse all available secondary data, consult with key partners at country and international level, and to carry out targeted field visits for primary data collection.

The review found that Syria and surrounding countries have engaged in a massive response to the emergence of wild poliovirus in the region and this response has helped to significantly reduce the risk of further outbreaks of poliomyelitis. Since October 2013, 24 supplementary immunisation activities have been conducted in seven countries across the region, targeting more than 22 million children with multiple doses. Detection and reporting of AFP cases has intensified, national communication plans have been developed and efforts are underway to strengthen routine immunisation.

Weaknesses and gaps in implementation were identified during the review, which require action. Recommendations from this report should be considered when drafting the strategy for the next phase of polio outbreak response plan.

KEY RECOMMENDATIONS

1. Improve the quality of supplementary immunisation activities, AFP surveillance and routine immunisation services.
2. Implement a targeted approach to vaccinate hard to reach areas and populations groups.
3. Use innovative strategies to address remaining challenges, especially targeting hard to reach populations.
4. Standardise and expand in-process and post-campaign monitoring.
5. Sustain vulnerability reduction through intensified surveillance and maintenance of high routine coverage.

INTRODUCTION

On 28 October 2013, the Minister of Health of the Syrian Arab Republic announced that, after 15 years of absence, polio had returned to Syria. Thirteen paralytic cases due to wild poliovirus type 1 (WPV1) were confirmed in Deir Al Zour governorate. Genetic sequencing indicated that the virus had been in the region for nearly a year (linked to virus detected in environmental samples in Egypt in December 2012, with closely related strains also detected in environmental samples in Israel, West Bank and Gaza since February 2013). Since that time, 36 cases have been confirmed in Syria with the most recent reported case having onset of paralysis on 21 January 2014. Iraq confirmed the first WPV1 case in the country since 2000 in a 6-month old, unvaccinated child who had onset of paralysis on 10 February 2014. Genetic sequencing indicates the virus is most closely related to virus detected in December 2013 in Hasakeh, Syria.

Detection of wild poliovirus in a polio-free country is a public health emergency. Given the conflict in Syria, frequent population movements across the region, low routine immunisation coverage in key areas, and the prolonged period of undetected virus circulation in the region, the risk of further international spread of WPV1 across the region is considered to be high.

A strategic plan for polio response in the Middle East was developed and implemented from October 2013 targeting more than 22 million children under the age of five years. The goal of the Strategic Plan was to interrupt wild poliovirus transmission in Syria and surrounding countries by the end of March 2014 through:

1. Implementation of large scale and repeated Supplementary Immunisation Activities (SIAs) to stop the outbreak and protect all at risk populations.
2. Enhanced reporting and investigation of acute flaccid paralysis cases (AFP) to ensure rapid detection and response to any wild poliovirus transmission.
3. Improved routine immunisation coverage to provide protection in the longer term and to sustain polio-free status.

Three intervention zones were defined (see Figure 1):

Zone 1: Syrian Arab Republic

Zone 2: Areas in surrounding countries at immediate risk of virus transmission

Zone 3: Rest of neighbouring countries

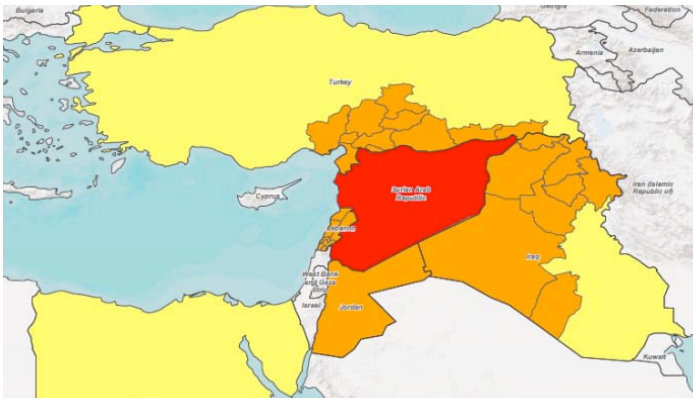


Figure 1. Middle East region intervention zones

Targets and status for each intervention zones are shows in Table 1. Three targets have not been achieved, two are at risk, three have partially been achieved and two indicators are on track to be achieved. A more detailed analysis of these targets is presented in .

Zone	Target	Status
All Countries	To interrupt wild polio virus transmission by end of March 2014	**At Risk**
Zone 1: Syria	NPAFP Rate greater than 2/100,000	**On track**
	Six rounds of NIDs by April 2014	**On Track**
	December SIAs reach 90% of accessible population	**Partially**
	January reaches 90% of entire target population	**Partially**
Zone 2: areas in surrounding countries bordering transmission zones	Annualized AFP Rate greater than 2/100,000	**Not achieved**
	95% coverage in at least three SNIDs or NIDs	**Partially**
	Vaccination of 95% of refugee children on registration/arrival in camps	**Achieved**
Zone 3: other areas in surrounding countries)	Annualized AFP Rate greater than 2/100,000	**Not Achieved**
	95% coverage in at least two NIDs	**Not achieved**
	Routine polio vaccination of 95% by Dec 2014	**At Risk**

Table 1. Targets for each intervention zone and status of achievement / comments to date.

OUTBREAK RESPONSE REVIEW

Reviews of Polio Outbreak Responses are mandated and required by the World Health Assembly Resolution 59.1. These reviews should focus on determining the speed and effectiveness of the outbreak response as well as identifying gaps in implementation and making recommendations to improve the intervention. The review is unique in that it sought to do this across seven countries working together to interrupt poliovirus transmission in the Middle East.

The review sought to collate and analyse data, consult with key partners at country and regional level and conduct field visits to gather priority information. WHO Guidance for Outbreak Response Reviews and the strategies and objectives of the Phase I Middle East Strategic Plan for Polio Outbreak Response were used to guide the review. A regional assessment of the key objectives and targets for the polio outbreak response is provided and individual assessments by country, and thematic/strategic area, are presented in Annex 1.

REGIONAL OUTBREAK RESPONSE

Overall, Syria and surrounding countries in the Middle East have engaged in a massive response to the emergence of wild poliovirus in the region. In a complex political and security environment, governments with the assistance and partnership of UN agencies and NGOs, have accessed and vaccinated millions of children in multiple rounds of SIAs. In addition, detection and reporting of AFP cases has been intensified, national communication plans were implemented and efforts are underway to strengthen routine immunisation.

However, significant weaknesses, gaps and issues were identified during the review, which require action to address if the stated goals of the intervention are to be achieved

The focus moving forward into Phase II of the response must be on increasing the quality of SIAs, conducting post-campaign monitoring, strengthening AFP surveillance and revitalizing routine immunisation services. There needs to be a targeted focusing of resources on reaching all children especially those in areas that are inaccessible due to conflict but also areas where operational difficulties and refusals have resulted in poor coverage. These issues are specifically addressed below in more detail by thematic area and by country.

A number of questions were posed based on the WHA Resolution 59.1 and are detailed in Table 2. A more detailed table is presented in Annex 2.

	Question	Response
1	Did the outbreak response activities meet the outbreak response standards, particularly in terms of speed and appropriateness?	Yes
2	Have national authorities and partners played their expected role as laid down in WHA and RC resolutions?	Yes
3	Has SIA quality been sufficient to ensure poliovirus transmission is interrupted within shortest time possible?	Yes
4	What was the quality of SIA planning, delivery, monitoring and communication?	High
5	Is the AFP surveillance system sensitive enough to detect transmission?	Partially
6	Have the polio outbreak response activities being undertaken in a manner that would strengthen routine immunization performance, particularly in the highest risk areas	Partially
7	Have sufficient financial, material and human resources been made available to support full implementation of all recommended polio outbreak response activities?	Yes
8	Was national and international partner coordination effective during outbreak response	Yes
9	Are there remaining risks to stopping the outbreak?	Yes

Table 2. Questions addressed as part of Middle East Outbreak Review

Supplementary Immunisation Activities

24 supplementary immunisation activities (SIAs) have been conducted across the region since October 2013, targeting more than 22 million children with multiple doses of oral polio vaccine (OPV). All countries have conducted at least two national immunisation days (see Table 3 for SIA schedule and post-campaign coverage by country).

The Ministry of Health, Syria conducted the first SIA on 24 October 2013, within five days of the regional polio outbreak alert. Syria has conducted five SIAs to date with two more national campaigns planned for April and May 2014. Iraq and West Bank and Gaza have conducted two SIAs and Jordan, Lebanon, Egypt and Turkey have conducted three SIAs. Further information on SIA campaign implementation can be found in individuals Country Profiles in Annex 1.

Particular challenges to implementation of SIAs included:

- **Insecurity**, particularly in Syria and Iraq, which affected access to some high risk areas and resultant low coverage rates.
- **Low risk perception** among families and medical personnel who did not fully understand the urgency and need of repeated rounds.
- **Fatigue within national health systems** due to the human resources and time demands from the SIAs.
- **Inconsistent use of finger marking** made it difficult to objectively assess post-campaign covrerage.

	Number of children vaccinated (millions)				
Country / Year	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
Syria	2.4	2.2	2.5	2.7	2.9
Jordan	1.1	0.9			1.0
Lebanon	0.6	0.6			0.5
Iraq	1.2	4.8	0.6	0.2	5.4
Egypt	14.3	14.4			0.07
Turkey	1.1	1.3		0.3	
WB & Gaza		0.6	0.7		
Total	**20.7**	**24.9**	**3.8**	**3.3**	**9.9**

Not done

>80% post-campaign coverage

<80% post-campaign coverage

Table 3. Number of children vaccinated (in millions) per SIA with post-campaign coverage results highlighted in colours (red <80%, green >80% coverage), by country

AFP Surveillance

The following surveillance targets were achieved, up to March 2014 (see Table 4):

- Four of seven countries met target **NPAFP rate ≥2/100,000**.
- Five of seven countries met target **≥80% of AFP cases notified within seven days of onset of paralysis**
- All seven countries met target **≥80% of AFP cases investigated within 48 hours of being reported**.
- Six of seven countries met target **≥80% proportion of AFP cases with adequate stool specimens**.

Further information on AFP surveillance can be found in individual Country Profiles in Annex. Particular challenges to AFP surveillance in the region include:

- **Access to areas**, particularly northern governorates of Syria, to carry out active AFP case surveillance and sample collections.
- Sub-optimal **AFP case investigation and reporting**.
- Lack of **standard AFP case definitions** and awareness among clinicians.
- Lack of **standardised stool sample collection and transport protocols**.

	NPAFP rate*		% AFP case notified within 7 days from onset of paralysis		% Cases investigated within 48 hours from notification		% adequate stool specimens	
Country / Year	2013	2014	2013	2014	2013	2014	2013	2014
Syria	1.7	3.2	78	75	94	95	68	92
Iraq	3.1	3.0	82	89	89	81	84	93
Jordan	1.4	1.1	77	83	100	100	91	100
Lebanon	2.2	1.6	30	43	94	100	46	71
Turkey	1.2	0.7	50	58	99	98	80	88
WB & Gaza	2.2	2.1	87	88	84	100	95	100
Egypt	3.0	3.0	97	99	93	92	93	82

Table 4. AFP surveillance indicators, coloured according to indicator target met (green) or not met (red), by country

Communications and Social Mobilisation

A **regional Communication for Development (C4D) strategy** was implemented with the aim of ensuring more than 90% of caretakers with children under five years had appropriate knowledge of polio vaccination. This included knowledge of campaign dates, the importance of repeated doses, routine immunisation, vaccine safety, risk of non-compliance and ensuring children are immunised during SIAs.

The **regional external communications strategy** emphasised the risk of polio returning to the region and importance of a co-ordinated, regional response, advocating for health system strengthening and maintaining a political commitment.

High household awareness of polio campaigns has been achieved across the region, but low awareness rates are still prevalent in high-risk areas of unvaccinated children. Post campaign monitoring in Syria, Lebanon and Jordan indicated that 70% of missed children are located in areas with low risk perception, unawareness of campaign, and fear of OPV. Further information on communications and social mobilisation can be found in the individual Country Assessments in Annex 1.

Particular challenges to communications and social mobilisation in the region include:

- A lack of **engagement of local communications actors**, particularly in hard to reach areas and underserved populations.
- Poor focus on **community-level interventions** during campaigns.
- A lack of **diversified media outlets** that can reach a wider audience.

Routine Immunisation

Three countries (Jordan, Turkey and West Bank and Gaza) report more than 95% routine immunisation coverage of three doses of polio (POL-3). Egypt has less than 95% POL-3 coverage and Syria, Lebanon and Iraq have less than 80% POL-3 coverage (see Table 5). Further information on routine immunisation can be found in the individual Country Assessments in Annex 1.

Particular challenges to routine immunisation in the region include:

- The collapse of **routine immunisation infrastructure** (including facilities and cold chain) in Syria.
- A lack of **mapping of areas and population groups** with sub-optimal routine immunisation coverage.
- A lack of **catch-up protocols** for under-immunised children, particularly among refugee populations.
- A lack of **reporting and data sharing** with partners, particularly those serving refugee populations.

Country	Under five pop (millions)	Polio Immunisation Schedules	2009	2010	2011	2012
Egypt	9.2	OPV: B, 1w, 2m, 4m, 6m, 12m, 18m IPV: 2m, 4m, 6m, 9m, 12m, 18m	97%	97%	96%	93%
Iraq	4.8	OPV: B, 2m, 4m, 6m, 18m, 4,y DTwP-Hib-HepB-IPV: 2m, 4m, 6m	78%	74%	80%	70%
Jordan	0.9	OPV: 4m, 5m, 9m, 18m, 6y DTap-Hib-IPV: 3m, 4m, 5m	98%	98%	98%	98%
Lebanon	0.3	OPV: 4m, 6m IPV: 2m	76%	76%	77%	77%
Syria	2.6	OPV: 6m, 12m, 18m IPV: 2m, 4m	83%	83%	75%	52%
Turkey	6.4	OPV: 6m, 18m DTap-Hib-IPV: 2m, 4m, 6m, 18m DTap-IPV: 6y	96%	97%	97%	97%
WB & Gaza	0.9	OPV: (TBC) IPV: (TBC)	100%*	100%*	100% *	98%*

>95% POL-3 coverage

90-95% POL-3 coverage

<90% POL-3 coverage

* self-reported

Table5. Under five population, polio immunisation schedules and POL3 WHO-UNICEF estimated coverage 2009-2012

Vaccine Logistics and Cold Chain

The region required more than 105 million doses of oral polio vaccine (OPV) in the first six months of outbreak response. Syria and West Bank and Gaza both reported some delays in vaccine transport and provision to insecure areas. Further information on routine immunisation can be found in the individual Country Assessments in Annex 1.

Particular challenges to routine immunisation in the region include:

- A lack of **timely sharing of country plans and requests** with the Vaccine Supply Division.
- Sub-optimal **vaccine stock management procedures** including accurate reporting of balances and wastage rates.
- **bOPV is not licensed for use in the region**, except Turkey, so each shipment needs a tax waiver and exemption.
- Use of **non-standardised target populations** which provide challenges to timely and accurate vaccine supply and delivery.

Country	Doses (millions)	Type	Balance (millions)
Syria	18	bOPV	1
Lebanon	3.25	tOPV	0.00
Iraq	13.1	tOPV	0.00
Egypt	57.234	tOPV	0.00
Jordan	2.5	tOPV	0.33
Turkey	9.85	tOPV	0.00
West Bank & Gaza	1.5	tOPV	0.00
Total	**105.434**		**1.33**

Table 6. Vaccine supplies, by country

Hard to Reach Populations and Refugees

Populations may be hard to reach for a number of reasons including:

- **Insecurity and inaccessibility**, mainly in Syria but also in Iraq and Lebanon
- **Refugee status**, especially those dispersed throughout host communities or in informal tented settlements
- **Mobile populations** or populations with high "refusal" rates for social or religious reasons

More than 2.5 million Syrian refugees are registered across the region (see Table 7) and hundreds of thousands of unregistered population groups live the region, who may not be included in national campaign microplans. These populations are often hard to reach with routine and campaign immunisation efforts and their population movements may facilitate further spread of wild poliovirus. Special polio vaccination campaigns have been conducted in some refugee camps in addition to SIAs and mobile and outreach teams have been employed. Further information on hard to reach populations and refugees can be found in the individual Country Assessments in Annex 1.

Particular challenges to accessing hard to reach populations and refugees in the region include:

- A lack of **standard guidance regarding refugee vaccination** at border crossings and on arrival to camps across the region.
- A lack of **systematic data sharing among partners** working with hard to reach and refugee populations.
- A lack of **mapping of high-risk population groups and areas**.

Country	No. of registered refugees *	Vaccination on arrival	Vaccination during SIAs	Vaccination policy *
Jordan	589,792	Yes	Yes	Vaccination on arrival (under 15 years)
Lebanon	1,019,522	Some	Yes	Vaccination is ongoing at some legal border crossing points, but activities are not systematic or comprehensive
Egypt	136,307	No	Yes	No systematic vaccination for new arrivals or at registration.
Turkey	712,911	Yes	Yes	Polio vaccination (all ages) at border crossings for new arrivals
Iraq	219,579	Yes	Yes	All new arrivals in northern Iraq receive Polio vaccination (all ages)
Total	**2,678,111**			

* Source: UNHCR, 16 April 2014

Table 7. Numbers of registered Syrian Refugees and vaccination policy, by country

Human Resources and Finance

All funding was secured for the regional outbreak plan and no planned activities were cancelled due to funding constraints (see Table 8). Approximately USD$ 23 million was spent on regional outbreak response between November 2013 and March 2014. Further information on country level funding can be found in the individual Country Assessments in Annex 1.

Particular challenges to accessing hard to reach populations and refugees in the region include:

- Lack of **standardised budget planning of activities**.

Syria	Germany, Japan Committee for UNICEF, UAE, DFID, AusAID, EPF, Austria, PSFR UAE Xoman Trading, OFDA Syria ER Health Plan, UK, OFDA Syria SHARP, CERF, OCHA, ECHO
Lebanon	Netherlands, OCHA, Germany, BPRM, Kuwait, Oman
Jordan	Germany, SIDA Sweden, Australia, BMGF, BPRM, DFID, SPA/NPT, WHO, CDC, Oman
Iraq	Germany, EPF, CERF, Kuwait
Turkey	BPRM, DFID, Germany
Egypt	Germany, DFID
WB & Gaza	UNICEF RR, UNRWA, Oman

Table 8. WHO and UNICEF sources of funding, by country

Co-ordination

At the regional level, WHO and UNICEF have adopted a "one team approach", establishing a centralised outbreak response team with technical resources drawn from the regional and headquarters offices of both organizations, as well as through agreements with other GPEI partners such as CDC.

At the country level, national ministries of health have collaborated with key local and international organizations to plan and implement response activities. Interagency coordination committees have been established in countries affected by the outbreak, with specific roles assigned to partner organizations based on their areas of expertise. These committees meet regularly with high level participation of government officials.

In Syria, a joint country response plan was developed by MoH, WHO and UNICEF, and technical coordination meetings chaired by the Health Minister or his deputy are held on a regular basis. Lebanon set up a co-ordination committee to oversee implementation of the naitonal strategic plan; Iraq created an Emergency Operations Center; and Jordan established polio control rooms (PCRs) at the national and governorate levels to coordinate outbreak response activities. Jordan PCR meetings are held every week to review the status of response activities and take corrective action where necessary. Egypt and Gaza developed an Inter-Country Coordination Committee, drawing membership from their respective ministries of health, UNICEF, WHO, UNRWA Rotary, USAID, and the Japanese Government. Further information on co-ordination can be found in the individual Country Assessments in Annex 1.

Particular challenges to co-ordination in the region include:

- A lack of **systematic information sharing between agencies**
- Delays in the **deployment of staff**
- Delays in **establishment of a regional coordination mechanism**
- Absence of a **common strategy for dealing with external criticisms of the polio eradication program**

RECOMMENDATIONS

Supplementary Immunisation Activities

1.1 Continue intensified SIAs in Syria and Iraq with targeted campaigns in surrounding areas and among high-risk areas to the end of 2014.

1.2 Develop a targeted approach to vaccinate high-risk populations groups and children consistently missed by SIAs.

1.3 Adjust target population numbers to account for displaced populations and population movements.

1.4 Implement intra- and post-campaign monitoring following all SIAs with timely analysis and sharing of data.

AFP Surveillance

1.5 Develop a surveillance strengthening plan in each country by May 2014.

1.6 Investigate zero dose AFP cases and confirmed wild poliovirus, if applicable.

1.7 Adhere to standardised AFP case definitions and reporting practices, including for stool sample collection and transportation.

Communications and Social Mobilisation

1.8 Develop a high-level advocacy plan to ensure regional commitment to polio eradication.

1.9 Develop country and regional level media strategies for polio.

1.10 Diversify local strategies and media channels to respond to the local social context and different implementation approaches.

1.11 Develop high quality messages to address parental concerns, create demand and mitigate fatigue following repeated campaigns.

1.12 Strengthen social skills of health workers to address safety concerns and low risk perception among communities.

Routine Immunisation

1.13 Maximise opportunities to increase routine immunisation coverage, including at border crossing points.

1.14 Identify and map areas with sub-optimal routine immunisation.

1.15 Develop protocols for catch up of under-immunised children at different ages.

1.16 Improve reporting and data sharing between partners, including the private sector and other vaccination campaign partners

1.17 Rebuild routine immunisation infrastructure, including health care facilities and cold chain.

Vaccine Logistics and Cold Chain

1.18 Share timely logistics plans and requests with Vaccine Supply Division and improve vaccine and stock management practices.

1.19 Ensure vaccine provision and transport to insecure areas.

1.20 Expedite the process of bOPV licensing in countries.

Hard to Reach Populations and Refugees

1.21 Develop innovative approaches to reach high risk and hard to reach populations, including unregistered refugees in host communities.

1.22 Identify and map inaccessible areas and populations following each SIA.

1.23 Provide guidance on the refugee vaccination policy, including on arrival at crossing points and on arrival in camps.

1.24 Expand AFP surveillance to health facilities providing services to high-risk populations and initiate community surveillance among health facility catchment populations.

Human Resources and Finance

1.25 Develop country workplans and budgets to improve financial management and reporting.

Coordination

1.26 Ensure information is shared between agencies, including regular weekly meetings at country and regional level.

1.27 Explore ways to involve other operational partners in SIA implementation, especially in hard to reach areas.

ANNEX 1: COUNTRY ASSESSMENTS

SYRIA

Background

Prior to the current outbreak, Syria's last confirmed polio case (due to an imported wild poliovirus) was in 1999. Syria remained polio free till October 2013 when wild poliovirus was confirmed in Deir ez-Zor, and Aleppo, following importation of WPV closely related to strains detected in environmental samples in Egypt in December 2012, with closely related strains also detected in environmental samples in Israel, Palestine since February 2013. So far, the total numbers of confirmed polio cases are 35 for the year 2013 and one case for the year 2014. Before the current crisis, the immunization programme in Syria was one of the best programmes in the region. The coverage rate of the OPV 3rd dose was above 90% until the year 2010 and then declined sharply to 68% in 2012, largely due to the ongoing conflict and humanitarian crisis. The Expanded Programme on Immunization (EPI) in collaboration with WHO and UNICEF has taken the re-emerging polio cases in Syria seriously and developed a rapid and effective 6 months response plan. The plan included the implementation of 6 nationwide immunization campaigns against polio, strengthening the AFP surveillance, improving the routine immunization services, developing a communication plan, and establishing effective coordination.

Supplementary Immunization Activities (SIAs) achievements and challenges

Out of the planned 6 rounds of SIAs, Syria has so far conducted 4 campaigns. The first campaign has been conducted in December 2013 and the last campaign was in the first week of March 2014. Because the exact number of the target children is not known in Syria, especially after the crisis, the Ministry of Health, in consultation with WHO and UNICEF, has used a best estimate as per the achievement in the previous round. Therefore, the coverage rates of immunization were reported above 100%. As per the recommendation of WHO, Syria used bOPV as the vaccine of choice to curb the polio outbreak. The below table 1 shows the SIAs schedule and status of implementation by MoH and by NGOs working in contested areas.

Implementing	Date	Type of vaccine	SIAs type	Status	Target	Administrative coverage (%)
Implemented by MoH	8-12 December 2013	bOPV	NIDs	Completed	2,221,298	101%
	5-9 January 2014	bOPV	NIDs	Completed	2,447,478	103%
	2-6 February 2014	bOPV	NIDs	Completed	2,628,355	104%
	2-6 March 2014	bOPV	NIDs	Completed	2,919,682	107%
	6-10 April 2014	bOPV	NIDs	Planned		
	5-9 May 2014	bOPV	NIDs	Planned		
Implemented by NGOs	2-10 January 2014	tOPV	sNIDs	Completed	1,400,000	91%
	28 January – 07 Feb 2014	tOPV	sNIDs	Completed	1,445,580	97%
	25 February – 8 March 2014	tOPV	sNIDs	Completed	1,458,500	97%

Table 1 SIAs schedule and status of implementation by MoH and by NGOs working in contested areas

From one round to another, the access to children has been improved using the results from independent monitoring. While the total number of vaccinated children was 2.21 million in the December 2013 round, the number reached 2.9 million in the March 2014 round. Figure 1 below shows the progress in reaching the children by MoH and NGOs during the last three rounds.

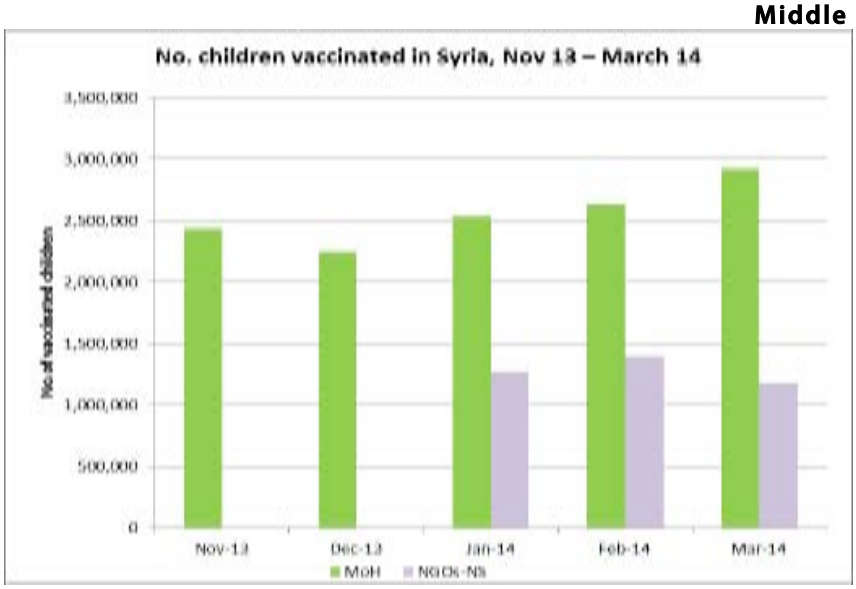


Figure 1 progress in reaching the children by MoH and NGOs during the last three rounds.

After each round, post campaign monitoring was performed using independent volunteers to collect data on the performance of both the immunization and communication activities. The recording of the immunization is done by two methods: by family statement (recall) and evidence of finger marking. The introduction of finger marking has been done for the first time in the history of the immunization programme in Syria. Therefore, the use of the finger marker in the first round was limited to 6 governorates due to logistical problems. The use of the markers improved in the subsequent rounds as seen in the figure 2 below.

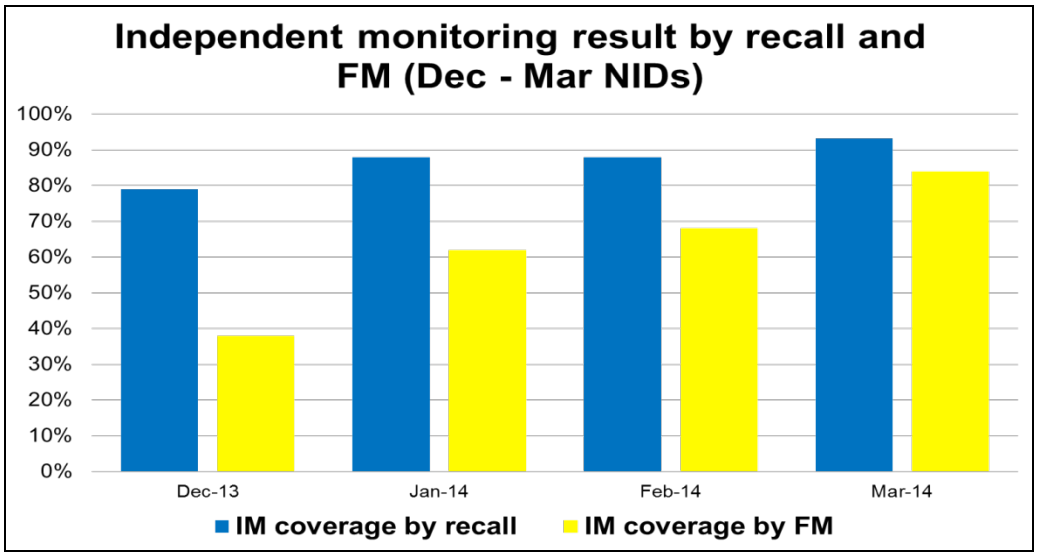


Figure 2: Independent Monitoring Results Syria December 2013 to March 2014.

SIAs condcuted in the contested areas showed progressive improvement in the number of children reached and in the quality of the SIAs. Figure 3 below shows the intra-campaign monitoring coverage in the last three SIAs conducted in the contested areas.

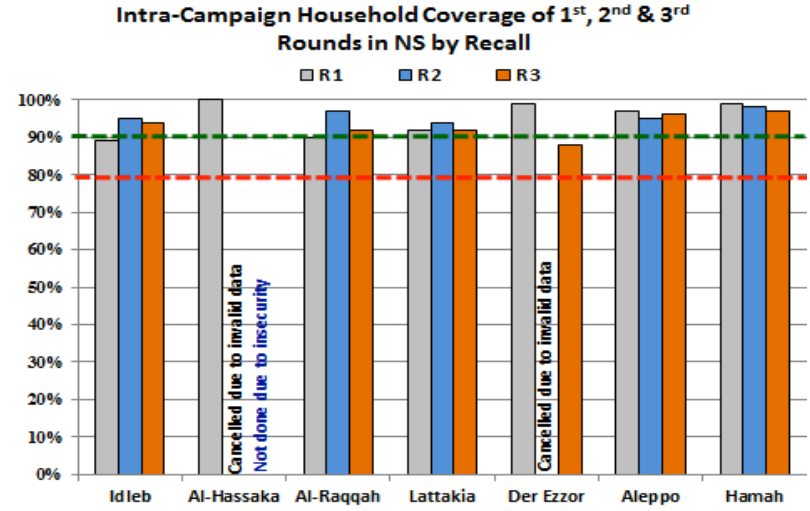


Figure 3: Intra-campaign Monitoring - Syria

Following each NIDs round, national staff, WHO staff and UNICEF convened a review meeting in which the findings and challenges are discussed. From the last 4 rounds, the following remaining challenges were identified:

- Lack of quality of supervision
- Inability for large scale house-to-house strategy resulted in more fixed posts
- Limited supply system: Finger marker distribution
- Increased trend of "family lack of interest" reason for not being vaccinated.
- Chronic inaccessible areas (insecurity)
- Lack of mapping of high risk population/areas

Acute Flaccid Paralysis (AFP) surveillance activities, achievements, and challenges

The AFP surveillance performance indicators were at the certification standards before the crisis. From 2012 onward, these indicators went down. The AFP rate decreased from 2.4 in 2010 to 1.3 in 2013 and adequate samples rate from 95% in 2010 to 72% in 2013. These indicators are mostly affected in the northeastern governorates. In the first quarter of 2014, the performance indicators showed reasonable improvement. The annualized NPAFP rate reached 3.2 and the stool adequacy rate was 92%, but the non-polio enterovirus rate is still less than the target (10%).

Although NGOs working in the contested areas in Northern Syria have reported 78 AFP cases in 2013 (12 were laboratory-confirmed WPV cases), and 11 AFP cases in 2014, the AFP surveillance system remains weak as proportion of AFP cases with adequate stool specimens was only 18% in 2013 and 19% the first quarter of 2014. AFP surveillance in contested areas is hampered by insecurity affecting district and field level officers to carry out investigation and sample collections as well as lack of operation cost, cold chain carriers, and standard stool kits for stool samples in all sentinel sites.

The AFP surveillance system in Syria, despite a decline in indicators during the past few years, has been sensitive enough to detect polio in the country. After almost 14 years of no polio cases in Syria, a polio outbreak was been confirmed in October 2013. So far, the total number of confirmed polio cases is 36. The outbreak revitalized the AFP surveillance system, however, a decline in indicators overall and specifically in certain governorates is a concern for the program and should be addressed. A focus should be placed on improving the AFP case definition awareness among clinicians, the stool sample collection requirements, and active surveillance system in general. All parties should work to streamline shipping of stool samples to an accredited laboratory to improve the timeliness indicator and quality of stool sample collection.

The remaining challenges are the followings:

- Sensitivity: AFP rate <2 for 2 consecutive years and variations among the governorates, especially the northeastern ones
- Timeliness: Arrival of specimens within 3 days from collection decreased from above 90% in 2010 to 68% in 2012 and 48% in 2013
- Weak active surveillance: prioritization of healthcare sites to conduct routine active surveillance of the registration records for AFP

Routine immunization achievements and challenges

Before the crisis, Syria was procuring their own vaccines and the coverage rate of OPV3 was maintained above 90% until the year 2011. The drop of the OPV3 coverage was sharp (from 99% in 2010 to 63% in 2012). The crisis resulted in many health facilities being non-functional, caused loss of trained immunization staff, and interrupted vaccines supplies. In 2013, UNICEF and WHO supported the MOH to implement several immunization activities. Those efforts helped the programme to achieve 76% in the first half of 2013. The programme identified key issues that need to be addressed in the second phase of the response. These issues are:

- Weak vaccine management
- Poor (quantity/quality) supervision
- Mobile RI outreach teams are facing many difficulties due to the security situations especially in Rural Damascus and North-eastern governorates

Coordination achievements and challenges

As soon as the polio outbreak was confirmed, the MOH with its partners (WHO and UNICEF) formed a coordination team to prepare and coordinate the implementation of the response plan. The team had several meetings headed by the Minister, his deputy, and other partners such as Syrian Arab Red Crescent (SARC), and UNHCR were invited on various occasions. Other UN agencies were involved as the need arose. Two regional coordination meetings were organized in Beirut and 2 meetings in Amman during the first quarter. The MOH and SARC were involved in Beirut meetings. Even with these coordination achievements, overall the coordination and information sharing between the countries, regional offices and HQs, neighbouring countries, and partners needs further improvement.

Communication -Social Mobilization achievements and challenges

As per the Response Plan, a communication plan was developed to strengthen the SIAs and routine immunization activities. Several communication materials including billboards, banners, information sheets for public, Q&A booklet for health workers, as well as aprons for health workers and volunteers were developed and distributed to all governorates. All means of media were involved in the information dissemination before and during the campaign including TV, radio, newspapers, SMS, etc. For the first time, a two day workshop on polio communication for health educators and polio focal persons was organized before the March 2014 NIDs round. The remaining challenges facing the implementation of the communcation plan are funding and appropriate human resources.

Logistics, funding and human resources

The total bOPV doses delivered for campaigns through May, 2014 are 18 million. By the end of May NIDs round, it is expected to have one million bOPV doses as a balance. Cold chain equipments were procured and delivered to support the NIDs and routine immunization activities. The need to revitalize the cold chain system, especially in the contested areas is large. UNICEF and WHO deployed extra international staff to support the MOH polio outbreak response. Currently there are two WHO consultants and one UNICEF technical staff member seconded by Sri Lanka office. Additional international and national officers are under recruitment by WHO and UNICEF to support the second phase of the response. So far, WHO has sufficient fund to cover the next two NIDs rounds while UNICEF reported a shortfall of $3.1 million.

Recommendations

SIAs

- Improve mapping of high risk population and areas
- Improve the supply system to avoid stock out of finger markers and other logistics
- Strengthen supervision with focus on supervision of SM activities by increasing the number of trained supervisors and documenting the findings

AFP surveillance

- Revitalize active surveillance
- Train MoH surveillance staff
- Conduct regular surveillance orientation of medical professionals
- Provide logistic support to specimens' transportation
- Distribute specimen collection kits, carriers, communication means, guidelines, etc.

Routine immunization

- Revitalize outreach services in the areas with low coverage
- Train new vaccinators and conduct refresher courses for the existing vaccinators
- Revive supportive supervision using the opportunity of polio campaigns
- Advocate for delivery of needed supplies (syringes, vaccines, ….) to all difficult and inaccessible areas
- Conduct assessment of coverage to identify high risk areas
- Consider incentives for mobile teams in high risk areas
- Support the procurement of routine vaccines
- Ensure availability of vaccination cards, safety boxes, cold chain equipment
- Conduct assessment of cold chain and ensure implementation of recommended action

Coordination

- Share information with different partners and neighbouring countries
- Sustain regular coordination meetings, including at regional level
- Circulate regular updates

Communication and social mobilization

- Carry out in-depth assessment for reasons behind family fatigue/refusals
- Build capacity of EPI mid-level managers on C4D and personal communication skills

JORDAN

Background

Indigenous transmission of wild polio virus (WPV) in Jordan was interrupted in 1988, but the last case of WPV reported in Jordan occurred during an outbreak in 1992. However, concerns about the risk of wild poliovirus importation from neighboring countries have been heightened by recent events. First, WPV was isolated from sewage systems in Egypt and Palestine, though there were no associated cases of paralytic polio reported. Then in October 2013, 17 suspected cases of polio were reported and subsequently confirmed by laboratory testing from Deir ez Zorin neighboring Syria. Reports of these cases coincided with the influx of close to 600,000 Syrian refugees into Jordan, approximately 100,000 of whom are in special refugee camps (mainly the Zaatari camp in Mafraq governorate and EJC camp in Zarka governorate).
This summary report reviews response activities that have been undertaken in Jordan since the outbreak of WPV was first detected in Syria in October 2013, assessing their impact, and it seeks to determine how the risk of importation of WPV into Jordan can be further mitigated.

Supplementary Immunization Activities (SIAs)

In response to initial reports of WPV circulation in neighboring Syria, an urgent OPV campaign in October targeted 18,700 children <5 years in Zaatari camp and achieved administrative coverage of 101%. However, in view of the continued circulation of wild polio virus in neighboring Syria, the scope of vaccination campaigns in Jordan was expanded from sub-national to national in line with a larger regional response plan. Three rounds of national immunization days (NIDs) against polio were subsequently planned and have been completed. Details of these campaigns, including coverage estimates based on administrative and post-campaign evaluation data, are presented in the table below (Table 1).
While overall coverage at the national level has been high during each campaign, the level of coverage appears to have declined in the second and third NIDs relative to the first NID at both national and governorate levels (Table 2). Coverage during the second round of campaigns was adversely impacted by a historic snowstorm in December.

Dates	Vaccine	Status	Admin Coverage (%)	IM Coverage (%)
2–21 November 2013	tOPV	Completed	124	94
28 December 2013 – 05 January 2014	tOPV	Completed	107	NA
2–9 March 2014	tOPV	Completed	114	88

Table 1. Polio Vaccination Campaigns and Coverage Estimates — Jordan, 2013–2014

	NID-I (November)		NID-II (December)	NID-III (March)	
Governorate	Admin	PCES-I	Admin	Admin	PCES-II
Amman	113%	94%	96%	109%	82%
Madaba	130%	100%	100%	114%	91%
Zarka	120%	97%	125%	120%	98%
Balka	143%	94%	134%	142%	86%
Irbid	145%	92%	95%	103%	87%
Ajloon	108%	87%	129%	122%	83%
Jarash	134%	100%	122%	115%	83%
Mafraq	123%	95%	126%	136%	87%
Karak	133%	94%	118%	141%	96%
Tafileh	126%	71%	97%	111%	92%
Ma'an	108%	100%	82%	99%	100%
Aqaba	129%	88%	81%	93%	100%

Table 2. Administrative Versus Independent Monitoring Coverage Estimates — Jordan, 2013–2014

Intra-campaign monitoring has been conducted during each of the three campaigns by teams comprising external monitors and officials of the Jordan Ministry of Health. Their field observations have provided an independent assessment of the campaign process, giving vital daily feedback to MOH on the quality of campaigns. While monitors have noted that campaigns have been well organized with high levels of political commitment and participation, gaps have been noted in community awareness and a sense of urgency regarding the ongoing WPV outbreak in the region is lacking. Other problems identified include absence of microplans at most health centers, deficiencies in the quality of supervision, knowledge gaps among vaccinators with respect to vaccine vial monitors, and inconsistent/incorrect finger-marking.
Post-campaign coverage evaluation surveys (PCES-I and PCES-II), results of which are highlighted in the tables above, were conducted after the November and March vaccination campaigns. Additionally, three rapid assessment surveys (RAS-I, RAS-II, RAS-III) were conducted following each NID to establish coverage estimates among Syrian refugees and identify reasons for non-vaccination among this group (Figure 1).

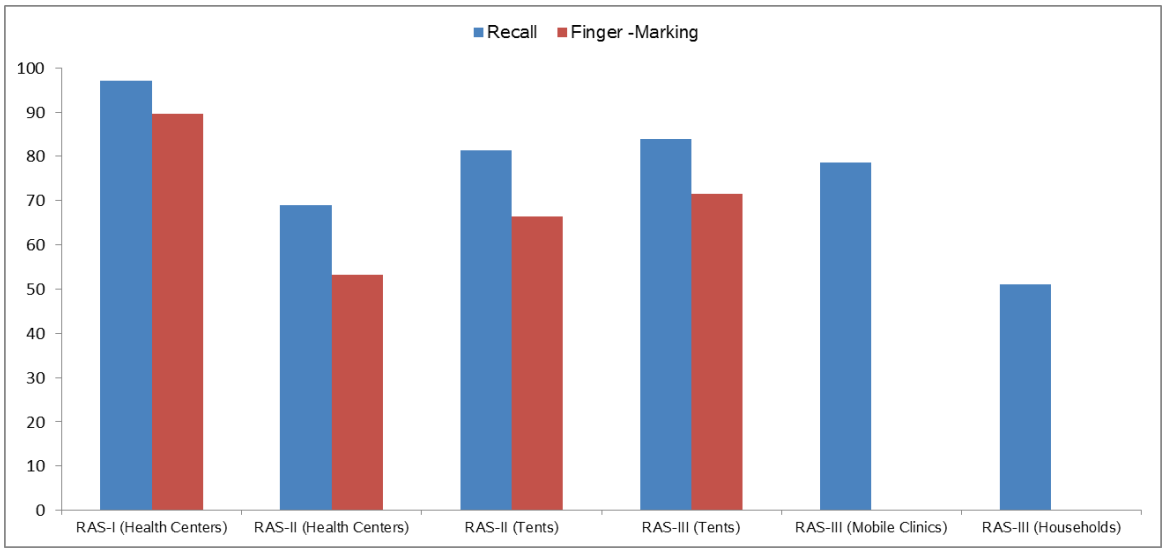


Figure 1. Rapid Assessment Survey Coverage Estimates Among Syrian Refugees in Jordan.

Acute Flaccid Paralysis (AFP) Surveillance

AFP surveillance in Jordan has been suboptimal over the past four years, as national non-polio AFP (NPAFP) rates ranged between 1.3–1.8 cases per 100,000 persons <15 years during 2010–2013. The same trend was observed at the governorate level. Stool specimen adequacy rates during the same period however met the benchmark of 80% (range: 85%–97%). Excluding years in which no AFP cases were reported within a governorate, the stool specimen adequacy rate was also met at the governorate level for each of the years under review, with few exceptions. This implies that when AFP cases have been detected, they have been generally investigated properly both at the national and governorate level. This was corroborated by the fact that, in each year under review, all reported AFP cases were investigated within 48 hours of notification and 60-day follow-up was consistently >80% (range: 89%–100%), though during 2012–2013 rates of case notification within seven days of onset fell below 80%. Problems were however observed with respect to the non-polio enterovirus isolation rate, as it did not reach the benchmark of ≥10% during 2010–2013, raising questions about the reverse cold chain system.

Routine Immunization

Routine immunization remains an area of strength, as coverage levels have consistently exceeded established benchmarks at the national and governorate level (Figure 2). Data from 2013 showed that all but one of the governorates (Zarka; 84%) achieved 90% coverage. However, several governorates reported coverage exceeding 100% in multiple years, implying that population numbers used in calculating coverage may be unreliable and need to be updated. This trend could also reflect the influx of Syrian immigrants, who might not be accounted for in population numbers used to derive vaccination coverage. This group represents a highly vulnerable population, whose access to health care services might be limited, and this could result in a significant portion of the target population for routine immunization against polio being

unaccounted for. Compared with other governorates, Aljoon had a high dropout rate (~8%) between the administration of the first and third doses of polio vaccine. The reasons for this merit investigation.

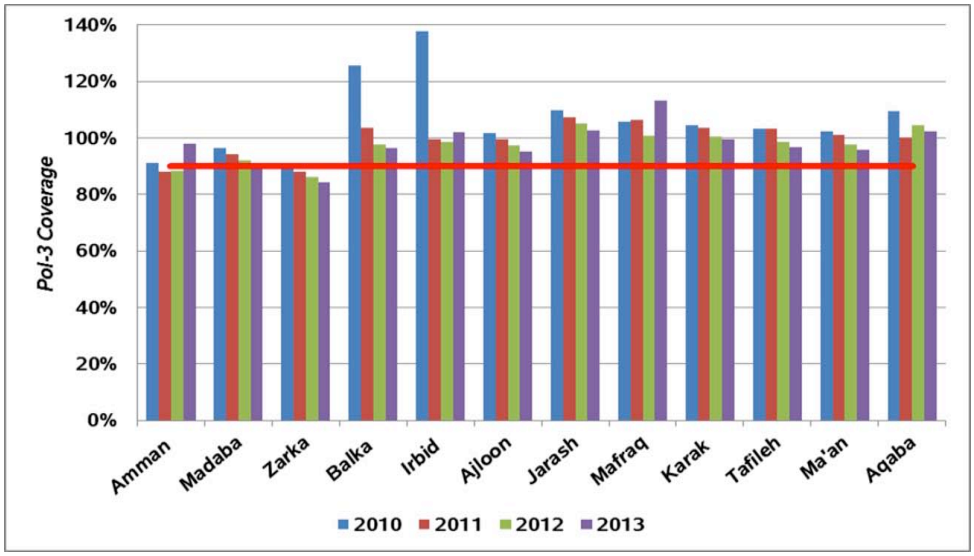


Figure 2. Polio Routine Immunization Coverage (POL-3) by Governorate — Jordan, 2010–2013

Coordination and Roles of Partner Organizations

The Jordanian MOH has played a leading role in bringing partner organizations together, while assuming ownership and responsibility for the polio outbreak response. Partner organizations, such as WHO and UNICEF, have developed regional strategic plans for the outbreak response. In this regard, Jordan has shown strong political commitment to the response by developing its own country outbreak response plan and implementing planned activities in a timely manner. National steering and coordination committees have been established to oversee the planning and implementation of campaign and surveillance activities. Coordination of polio-related activities has been centralized at each administrative level through the establishment of polio control rooms (PCRs) at the governorate and national levels, respectively. PCRs have conducted regular weekly meetings to assess the status of implementation of response activities and take corrective action where necessary. UNHCR and IOM have provided support in reaching and vaccinating Syrian refugees at camps and points of entry into Jordan. However, significant improvement is required in information sharing among partner agencies.

Communication and Social Mobilization

Working with the Jordanian MOH and other partners, UNICEF has led social mobilization efforts to ensure high levels of participation during campaigns. Awareness of campaigns has been promoted using a variety of communication strategies, including mass media (e.g., TV, radio, and newspapers), key informants (health care workers, religious leaders), flyers and posters, as well as text messaging. Orientation meetings were also held for media personnel, medical practitioners and religious leaders. Mass media, especially TV, and health care workers have been identified as important sources of information about campaigns. UNHCR has also played a critical role in reaching Syrian refugees through text messaging and this has proved to be an important strategy for reaching this group. Despite high campaign participation levels, awareness gaps have been identified by post-campaign surveys. Other key reasons identified for non-participation include parents not giving importance to vaccination, failure to vaccinate sick children due to misconceptions and fear of the vaccine (Table 3).

Reasons Did Not Receive Vaccination in March Campaign	Lifetime Polio Vaccination Status*					
	No/Yes			No/No		
	Total	Jordanian	Syrian	Total	Jordanian	Syrian
Parent's did not know about campaign	17.1	15.8	28.6	15.4	9.1	--
Parent's did not think vaccination important	35.9	36.2	35.7	61.5	72.7	--
Child was sick	21.8	21.7	28.6	15.4	18.2	--
Fear of vaccine	17.1	18.4	7.1	7.7	0.0	--
Not at home	2.4	1.3	0.0	0.0	0.0	--
Site too far	2.4	2.6	0.0	0.0	0.0	--
No vaccine at site	1.2	1.3	0.0	0.0	0.0	--
Other	2.4	2.6	0.0	0.0	0.0	--
Total	100.0	100.0	100.0	100.0	100.0	--
Number of children	(170)	(152)	(14)	(13)	(11)	(1)

Table 3. Reasons for Non-Participation Among Survey Respondents Following March 2014 Campaign

Note:

No/Yes: Child not vaccinated during March NID but previously vaccinated

No/No: Child not vaccinated during March NID and not previously vaccinated

Vaccine and Logistics

Vaccine supplies during campaigns have generally been adequate. About 1.3 million doses of trivalent OPV (tOPV) were supplied for campaigns in October and November, of which 1,272,817 doses were utilized. An additional 2.5 million doses of tOPV were supplied by UNICEF for the December and March NIDs, of which 2,200,216 doses were utilized. The current available stock of tOPV stands at 326,968. Cold chain supplies have also been adequate, as the country has in place 2 ice freezers, 3 walk-in type cold rooms, 6 refrigerators, 50 cold boxes, 1400 vaccine carriers and 2,000 ice packs to support future campaigns.

Logistical support has been provided by partner organizations in areas of technical strength. WHO, UNICEF and UNHCR have provided critical support to the Jordanian MOH in planning and implementing vaccination campaigns. Funding and staff support for ongoing activities have been provided by these and other partner agencies.

Refugees and other "Hard to Reach" or inaccessible populations

The influx of Syrian refugees into Jordan, due to ongoing conflict in Syria, poses a challenge to the health care resources of the country, especially as it relates to guarding against importation of WPV and maintaining Jordan's polio free status. To ensure that this highly vulnerable group of persons, numbering about 600,000, is protected against polio and other vaccine preventable diseases, special measures have been put in place.

Special vaccination campaigns against polio have been conducted in refugee camps in addition to the NIDs conducted. NIDs have employed mobile and outreach teams to vaccinate children in refugee camps and settlements, the largest of which is the Zaatari camp (home to over a hundred thousand refugees). Administrative and independent monitoring coverage reported following these campaigns have been high (Table 4). The Jordan MOH also has an arrangement with UNHCR and IOM to ensure that all new arrivals into refugee camps and settlements under 15 years of age are vaccinated against measles and polio, and the number of persons vaccinated each month is documented and reported (Table 5).

Campaign Dates	Type of Vaccine	Target Population	Vaccinated (Syrians)	Admin Coverage (%)	PCM Coverage(%)
28 - 31Oct 2013	tOPV	18,700	18,821	101	89
23-28 Nov 2013	tOPV	14,400	15,319	106	96
21-24 Dec 2013	tOPV	14,644	16,524	113	94
02-06 Mar 2014	tOPV	17,840	18,864	106	97

Table 4. Zaatari Camp Polio Campaign Vaccination Data — Jordan, 2013–2014 ***(Source: UNICEF and UNHCR)***

Intervention (Vaccine/Supplement)	Jan. 2014	Feb. 2014	Mar. 2014	Total (2014)	Total (2013)	Overall Total
Polio vaccine	4,711	6,796	3445	14,952	29,140	44,092
Measles vaccine	6,710	9,568	4841	21,119	73,913	95,032
Vitamin A	1,969	2,868	1376	6,213	20,674	26,887

Table 5. Emergency Vaccination for New Arrivals in Raba'a Al Sarhan Transit Center (16 April 2013 – 15 March 2014; *Source: Jordan MOH/IOM*)

To assess coverage among Syrian refugees living outside camps, several approaches have been adopted. First, a special rapid assessment survey (RAS-I) was conducted in the four governorates with the highest numbers of out-of-camp Syrian refugees (i.e., Amman, Irbid, Mafraq, and Zarka). A second rapid assessment survey (RAS-II) was conducted during 11–14 January 2014 following the completion of the second round of NIDs. Based on caregiver recall, 76% of Syrian children and 73% of children of other nationality were found to be vaccinated against polio. The third rapid assessment survey (RAS-III), conducted after the March NID, expanded the scope of respondents to include children living in tent settlements in eight governorates. Coverage estimates among Syrian children in tent settlements as assessed by caregiver recall (84%) and finger-marking (72%) showed a small improvement from RAS-II estimates. Syrian children accessing mobile clinics also had better coverage (79%) relative to those surveyed from health centers (coverage: 69%) during RAS-II. However, the coverage estimate for Syrian children living in households was very low (51%), indicating a possible immunity gap in this sub-group. Figure 3 compares coverage estimates among Syrian children during all three rapid assessment surveys. RAS-III coverage estimates among Jordanian children were 79% each for children in tents and mobile clinics and 70% for children in households.

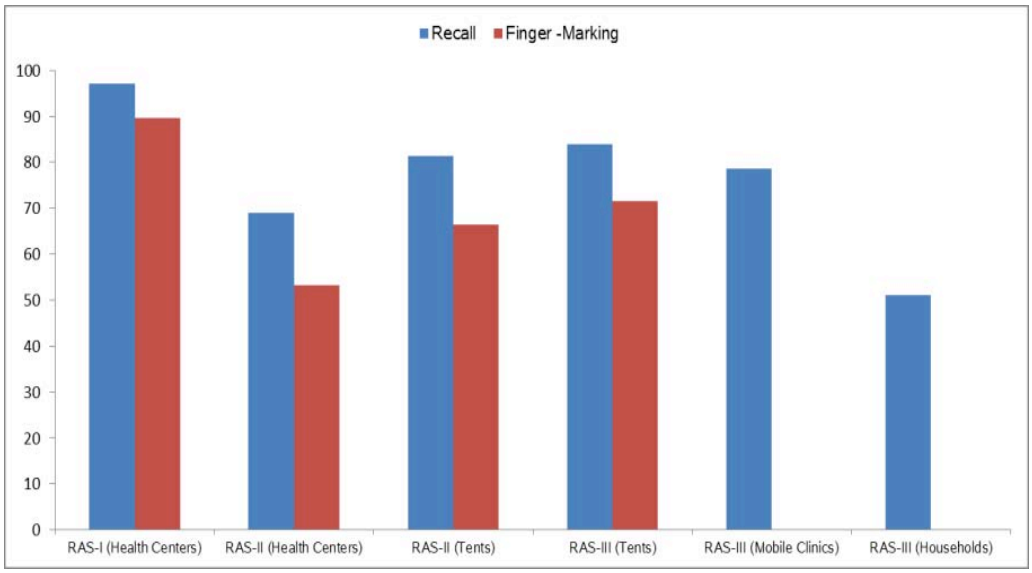


Figure 3. Rapid Assessment Survey Coverage Estimates Among Syrian Refugees in Jordan.

While the principal focus among high-risk groups has been on Syrian migrants, similar outreach strategies have been developed and used to reach vulnerable and hard-to-reach groups indigenous to the Jordanian population, such as Bedouins and gypsies. Mobile teams, either centralized at the governorate level or individually provided by health centers, have been used to reach and vaccinate children in remote areas, especially along the northern border of the country. Additionally, outreach teams have been deployed during campaigns to vaccinate children at nurseries and other public places. Also, UNWRA coordinates vaccination activities among Palestinian refugees in Jordan.

The use of mobile teams and other special strategies to reach and vaccinate children among vulnerable groups will be crucial to the success of the overall outbreak response. The country should also explore community based communication strategies to mobilize Syrian refugee at host communities to benefit from immunization services

Recommendations/Planned Activities

AFP Surveillance

- Conduct rapid assessment of the current AFP surveillance system, including reverse cold chain system
- Strengthen surveillance in each governorate
- Recruit and train surveillance officers
- Organize special AFP surveillance training to NGO's staff serving Syrian refugees

SIAs

- Consider high-risk approach as opposed to national campaigns in light of independent monitoring results of NID-III, rapid assessment survey results of coverage among high-risk population, and the overall risk status of the region
- Address operational issues, i.e., microplanning, finger-marking, supervision, well-structured outreach and mobile vaccination system

Routine Immunization

- Address issues in underperforming governorates
- Investigate high dropout rates in Ajloon
- Develop comprehensive strategy to identify and ensure access to services for children in high-risk groups (including Syrians and other nationalities)

Coordination

- Strengthen collaboration among partners
- Ensure regularity of PCR meetings and updates
- Improve information sharing across agencies

Communication and Social Mobilization

- Develop clearer messages to raise the awareness of the public on polio outbreak and encourage vaccination
- Target high-risk groups through SMS messaging
- Engage more local community-based organizations, placing emphasis on interpersonal communication

IRAQ

Background

In October 2013, Iraq began enhanced activities in response to the polio outbreak in Syria. As part of the polio outbreak in Syria and detection of WPV in environmental samples in the region, Iraq conducted 4 SIAs to build population immunity and prevent virus importation. However, on 10 Feb 2014, a case of WPV1 was confirmed in Sha'b district, Baghdad-Resafa governorate, in a 6-months old unvaccinated child. Genetic sequencing indicates the virus is most closely related to virus detected in December 2013 in Hasakeh, the Syrian Arab Republic. WPV1 was also isolated from the child's three-year old sister, who did not develop symptoms. Iraq's last confirmed polio case was in 2000 from Diala Governorate. In response to this outbreak, the Ministry of Health in coordination with WHO and UNICEF developed a comprehensive outbreak response plan.

Supplementary Immunization Activities (SIAs) achievements and challenges

In November 2013, Iraq conducted the first of the SIAs from Phase I with the lastest campaign during the second week of March 2014. Due to the influx of refugees and the continued instability in parts of the country the true target population is difficult to determine; however, the Ministry of Health in consultation with WHO and UNICEF used a best estimate calculation which included previous achievements in vaccination. Table 1 shows administrative data for the campaigns but should be interpreted keeping in mind the nature of the estimated denominator.

SIA	Target Pop	Doses	Total	Missed/ Surplus	% Target
3-7 NOV 2013	1,245,812	1,494,974	1,208,087	37,725	97%
1-5 DEC 2013	4,822,755	5,787,308	4,846,168	23,413	100%
5-9 Jan 2014	186,105	223,326	184,435	1,670	99%
7-11 Jan 2014	139,552	167,462	100,477	39,075	72%
12-16 Jan 2014	230,205	276,246	233,820	3,615	102%
12-23 Jan 2014	137,421	164,905	130,373	7,048	95%

Table 1 Administrative Vaccination Data: SIAs in Iraq Nov 2013 – March 2104

Anecdotal evidence suggests high demand with good acceptance of OPV and to immunizations in general. This is corroborated by the good coverage rates reported by administrative data. Unfortunately, Iraq was not able to conduct post-campaign monitoring because of logistics and security issues. Security also prevented access to children in certain areas, particularly Anbar province. This issue coupled with a lack of disaggregated data at lower levels means there may be pockets of missed children with no social data to guide outreach to them in the future. The lack of social data may hamper communication efforts and unfortunately without independent monitoring it is unclear as to what messages should be used going forward to enhance coverage and acceptance.

Acute Flaccid Paralysis (AFP) surveillance activities, achievements, and challenges

Since 2010, the NPAFP rate in Iraq is greater than 3 per 100,000 children under 15. To date the annualized NPAFP rate is 2.4. The stool specimen adequacy indicator is above the target of 80% and has been for the past four years. The non-polio enterovirus target of >=10% is also consistently met.

Iraq consistently achieves quality benchmark AFP surveillance indicators. However, subnational analysis in 2014 shows some quality deficiencies particularly in the areas case notification and stool sample collection/transportation. For the years 2000–2013 the indicator 'percent of cases notified within 7 days from onset of paralysis' was close to the target of 80% (74.6% -

82.4%) and the indicator '% cases investigated within 48 hours from notification' exceeded the target of 80% consistently (88.7% - 98.3%). However, the indicator 'percent specimens in lab within 3 days from collection (target 80%)' is consistently low ranging from 65.5% to 73.7%.

The prioritization of AFP surveillance quality and validation is important and there ought to be specific focus on communicating the polio outbreak to the medical community, both the private and public sector. It is important for them to understand the role of AFP surveillance in defining the extent of the outbreak.
Finally, the country team should develop AFP surveillance strengthening plan by May 2014 that will include:

- Plan and carry out awareness training for health sector and approach medical syndicates to involve private sector
- Conduct periodic training for periphery staff – focus on active surveillance
- Ensure weekly feedback to lowest level outlining strengths and potential gaps
- Distribution of AFP surveillance guidelines for (in Arabic)
- Comprehensive health center sensitization plan that include a supervisory plan and an active surveillance plan.

Routine immunization achievements and challenges

Due to the ongoing security issues and the destruction of physical and personnel infrastructure over the past thirty years, routine immunization service is extremely weak in several governorates. Despite the challenges, committed and dedicated Iraqi healthcare workers continued to deliver services to children. In Iraq, 100% of the districts reported coverage greater than 90% coverage of DPT1, a proxy for OPV1. Unlike some countries in the region, Iraq offers free of charge all routine immunization. Unfortunately, the program is hampered not only by logistical gaps caused by the insecurity but also lack of qualified staff as some health workers were killed, injured or displaced. Lack of skilled staff in some districts created gaps in information regarding catchment areas and target populations which increase the difficulty in determining the quality of service provision. Anecdotal evidence suggests that rumors concerning the safety of the vaccine circulate within the population and this is corroborated by the fact that the positive polio case and her older siblings were all unvaccinated.
The Iraqi Ministry of Health has reacted swiftly and comprehensively to the current outbreak. They have begun to conduct a comprehensive house-to-house mop-up in the vicinity of the case ensuring that every child is vaccinated. The challenge going forward will be to maintain this rigor should other cases appear.

Refugees and other "Hard to Reach" or inaccessible populations

Out of the 245,000 Syrian Refugees in Iraq, 240,000 are residing in three governorates (Erbil, Dohuk, Sulaimaniyah) in Kurdistan. Policies to cover each and every Syrian child under 5 are in place for covering this population; both within and outside camps. There is only crossing point between Syria and Kurdistan (through Peshkobar border at Dohuk) which is manned by 24/7 vaccination point and any family crossing over with a child under 5 is given OPV.

The major challenge is to reach the unreached children among families living in the conflict zone. A policy developed by MOH is to give more incentives to the vaccination teams to go into the hard to reach area. WHO is paying for some of those incentives. In the rest of the country, every child under 5 is reachable (whether refugee or Iraqi).

LEBANON

Background

Lebanon has been polio free since 1994. A single importation occurred in 2003 in Akkar with no further spread. Considering the ongoing humanitarian crisis and the vast population movement, immediate action was taken by the government of Lebanon following the confirmation of the index case in Syria in October. Two NIDs were implemented in November and December, an additional one in March and one is planned for April 2014. It is of note that Lebanon with a total population of about 4 million, has received more than one million Syrian refugees.

This summary report reviews response activities that have been undertaken in Lebanon since the outbreak of WPV was confirmed in October 2013 in Syria, assessing their impact, and it seeks to determine how the risk of importation of WPV into Lebanon can be further mitigated.

Supplementary Immunization Activities

The first 2 NIDs (November and December) were implemented using the house-to-house approach. In addition, vaccine was provided through health facilities and schools. The most recent NID started on 10 Mar 2014, using a fixed strategy through health facilities, schools, kindergartens, and private sector doctors. The decision to change from house-to-house to fixed vaccination sites was based on the experiences from the house-to-house campaign showing that many people preferred to go to fixed sites or to their private physicians (who notably had not been properly sensitized to the rationale for the campaign). Independent monitoring data showed that less than 20% of the population received the vaccine through the house-to-house strategy during the fall rounds. In March round, the private physicians were reached through the pediatric association and the government provided vaccines free of charge to all facilities. However, there are no detailed work plans, or clear supervisory plans, or a uniform policy for some campaign operations (i.e. use of finger markers or reporting from private sector).

Vaccination of refugees/displaced population

In Lebanon, there are no camps for Syrian refugees. The displaced Syrian population lives in different host communities, in informal tented settlements (ITS) and collective shelters. Not all of them are registered with UNHCR (about one million refugees registered from all ages and an additional estimate of about half a million unregistered). UNHCR supported health facilities were providing vaccination through fixed sites but the vaccination of ITS is carried out tent-to-tent by a local NGO, Beyond, which was supported by UNICEF. The *Shaweeshs* (the local leaders of each ITS) were sensitized by Beyond and thus extremely helpful in organizing the campaign which lead to excellent coverage in the four camps visited by the review team. The main worry and challenge is to reach the Syrian population in the host communities who are spread out all over the country. There are financial and acceptance barriers that can impact the access and use of health facilities/services by them as well.

During the first two days of the current round officials noted that the fixed strategy would not reach the target population and thus house-to-house was added in certain areas which had been receptive to this strategy in the past. Each vaccinated child received a signed card as proof of vaccination with a blank space over the date of the next vaccination to remind the parents of the next campaign. These cards were the basis of verification of vaccination by independent monitors.

Post-campaign monitoring

Country wide post-campaign monitoring was done in January combined for both campaigns, and preliminary results were released but a full report is still awaited. The survey was done using the EPI cluster sampling methodology and the sample included nearly 8944 children. The monitoring was carried out through the Faculty of Health Sciences at La Sagesse University. While useful data was generated, it is more important for SIAs to have a quick surveys biased towards poorly performing areas and providing immediate data for action.

Coverage data

Reported administrative coverage exceeded 98% in both rounds, while independent monitoring coverage (based on cards) showed a reduction from 90% in November round to 78.1% in December. Those who received vaccine in one or

both rounds reached 98.8% in Sour compared to 54.8% in Metn and 70.9% in Beirut. No difference was noted in coverage between Lebanese and non-Lebanese (both permanent residents and recent comers).

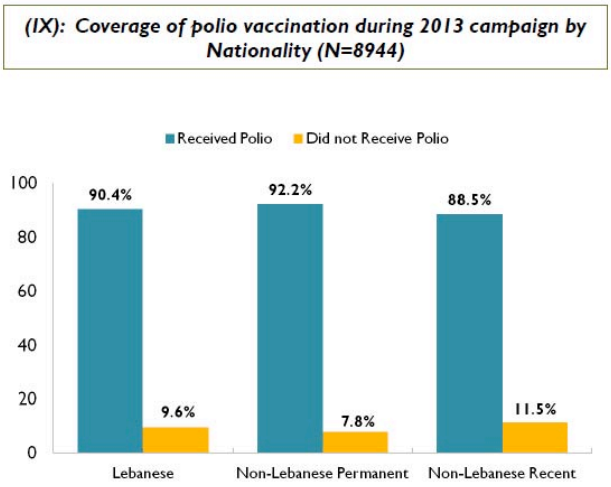


Figure 1 Polio Vaccination Coverage in Novemner and December 2013 Rounds

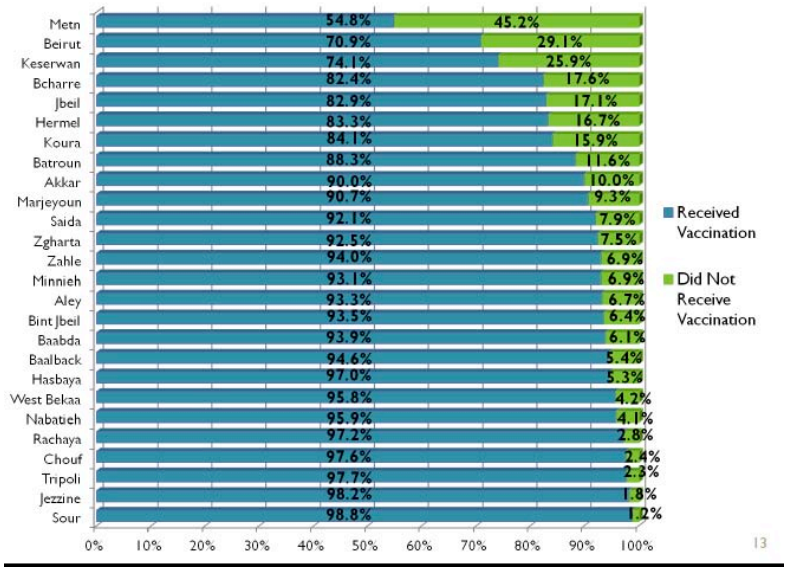


Figure 2 Polio Vaccination Coverage in November and December 2013 Rounds by Governorate

AFP Surveillance

AFP surveillance is part of the integrated disease surveillance system with clear policy, structure at different levels, and competent staff. There is a draft AFP surveillance guideline that needs to be finalized. There was an alert sent to staff at the beginning of the outbreak, but updates are needed.

Zero reporting

There is a wide network of zero reporting including hospitals, PHCC, dispensaries as well as some MMUs in some Qadas. Reports are computerized and monitoring is done.

Active surveillance network involves 51 hospitals both public and private, with nominated focal points in hospitals for reporting. Active visits are supposed to be done by the surveillance staff at the national, governorate and Qaza levels. However, there are some issues: no plans for the visits, visits are not regularly implemented, quality differs between governorates, and there is no monitoring of completeness of visits contrary to the system of zero reporting. Most important is that the network maybe missing some of the hospitals and centers commonly used by refugees for different

reasons. Clinician's awareness about AFP surveillance, the syndromic approach and the ongoing outbreak was variable and case definition, differential diagnosis, and reporting information posters were not found. Refresher training is needed for focal points and district level staff. Data management and data analysis is done at national level. Basic mapping and analysis needed at governorate and lower level. Some of the recommendations of the last surveillance review are still outstanding.

Indicator	Target	2010	2011	2012	2013	2014
Non polio AFP rate/ 100,000 <15 years	2.0	1.7	2.0	2.0	2.2	1.5
%adequate stool specimens	80%	47.4	45.5	50.0	45.5	100.0
%Non polio Entero Virus	10%	0.0	9.1	8.3	0.0	0.0
%Cases notified within 7 days from onset of paralysis	80%	42.1	45.5	33.3	30.3	50.0
%Cases investigated within 48 hours from notification	80%	100.0	90.9	87.5	93.9	100.0
%specimens in lab within 3 days from collection	80%	0.0	4.6	0.0	0.0	0.0
%AFP Cases investigated after 60 days from onset of paralysis	80%	79.0	63.6	45.8	57.6	0.0

Table 1 AFP indicators, Lebanon, 2010-2014

Province	Non polio AFP rate/ 100,000 <15 years	% adequate stool specimens	% Non polio Entero Virus	% Cases notified within 7 days from onset of paralysis	% Cases investigated within 48 hours from notification	% specimens in lab within 3 days from collection	% AFP Cases investigated after 60 days from onset of paralysis
BEKAA	1.3	33.3	0.0	0.0	100.0	0.0	50.0
MONT LIB	2.5	33.3	0.0	16.7	91.7	0.0	66.7
SOUTH	2.7	33.3	0.0	16.7	100.0	0.0	66.7
BEIRUT	2.3	66.7	0.0	66.7	66.7	0.0	66.7
NORTH	1.1	80.0	0.0	80.0	100.0	0.0	40.0
NABATIY E	3.2	100.0	0.0	100.0	100.0	0.0	0.0

Table 2 AFP indicators by Province, Lebanon, 2013

As a good step, the programme adjusted the population figures to accommodate the refugee influx based on registered refugee and their distribution in different governorates; this makes indicators more realistic and avoids overestimation.

Sensitivity

Non-polio AFP rate has been borderline around 2/100,000 under 15 over the last few years. As the rate was lower than 2 during 2013, the surveillance unit conducted active search in key hospitals and discovered 9 unreported cases, this increased sensitivity but decreased stool adequacy due to late discovery.

Timeliness

In addition to delays in reporting, some delays are seen in sample transport to the lab (to VACSERA in Egypt) sometimes waiting to pool samples for shipment.

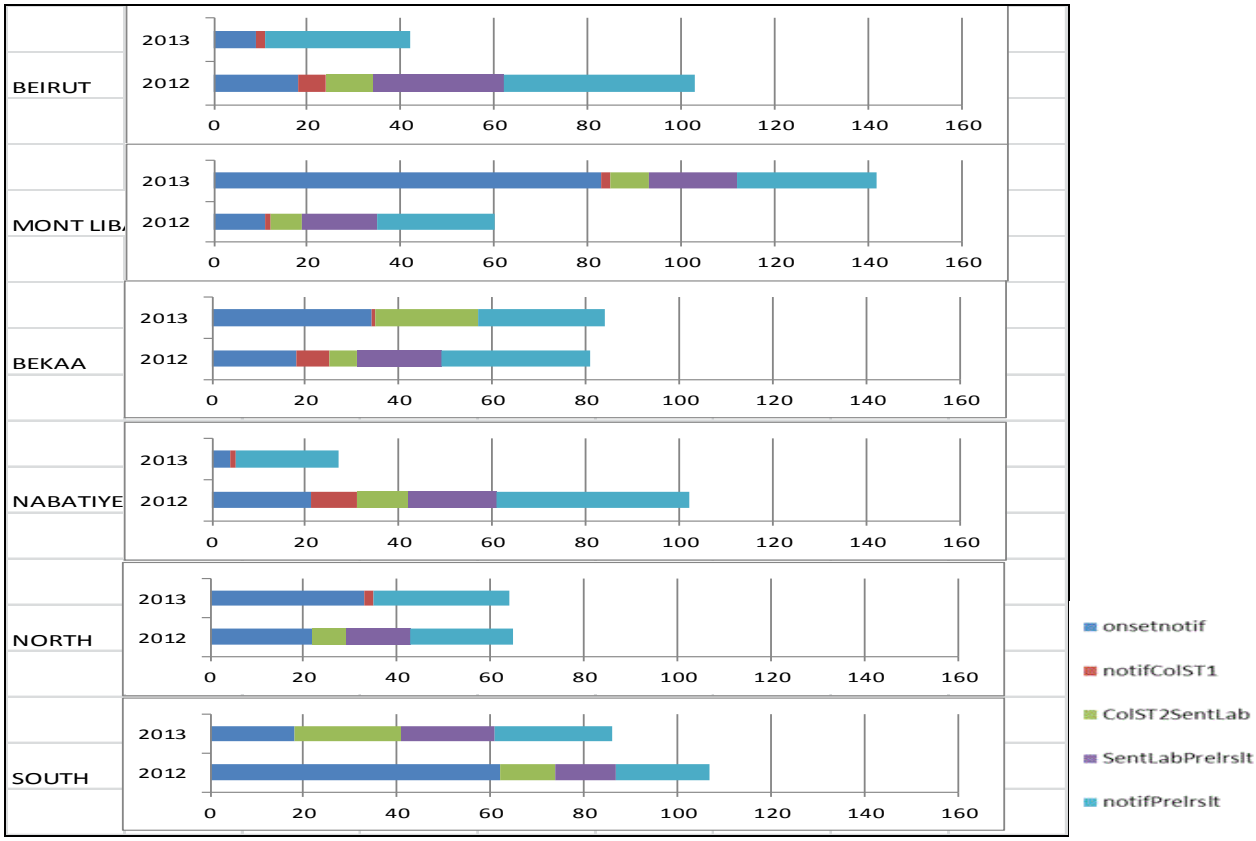


Figure 3. Surveillance and Transport Timelines 2012-2013

Routine Immunization

There is a well-organized national vaccination programme with strong NGO partnership with MoPH and good cold chain and infrastructure. However, there is a huge private sector market (different vaccination schedules and no reporting).There is influx of displaced Syrians from porous borders and unorganized distribution. Routine coverage is low among newcomers noting the disrupted services and security situation in areas of fighting. Immunization units were set up at UNHCR Registration centers and border entry points but Mobile Medical Units (MMUs) serving ITS are not yet providing routine immunization (all focus was on measles because of the huge outbreak with 1700 cases in Lebanon and the polio campaigns). There is no protocol for catch-up vaccination among under immunized. Reported coverage for Pol3 in 2013 is 99.7% however, there is big difference between official routine immunization figures and WHO/UNICEF estimates as indicated below.

Wide variations were found between Lebanese and non-Lebanese regarding polio routine vaccination according to the IM survey results in 2013. Those who received 3 or more doses (verified by card) represented 91.8% among Lebanese children in the sample, 88.7% for Non-Lebanese residing in Lebanon for more than 2 years and 66.8% for non-Lebanese arriving less than 2 years ago. According to IM survey some districts had less than 80% coverage (Jexzzine, Sour, Zgarta, Baalback, Bent Jbeil, Hasbaya).

Furthermore, the vaccination profile of non-polio AFP cases between 2011-2013 is confirming presence of under immunized children.

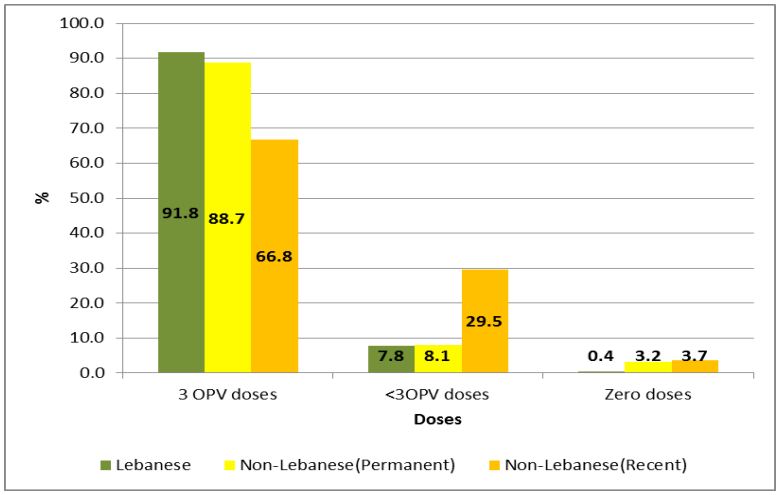


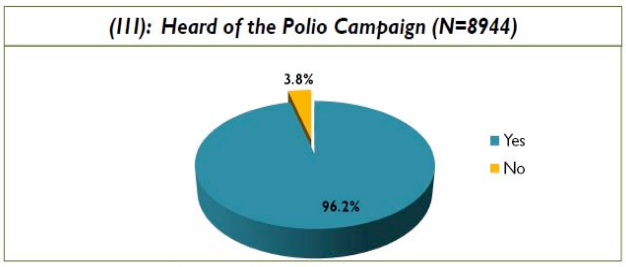
Figure4. OPV Status of Non Polio AFP Cases 2011-2013

Government Commitment and Partners' Coordination

The Government leads the response with partner support from UNICEF, WHO and UNHCR, NGOs and the private sector. The March campaign was launched by HE MoPH and heads of agencies with good media coverage in addition to media briefing a week before the campaign in attendance of all Caza physicians. Partners provided funds for SIAs (1.7 m for R1 and R2). Government is providing full support for surveillance (however, there is still needs for more staff and transport) and resources are needed to support RI. Despite the existence of health sector coordination committee for overall humanitarian response, there is no specific task force on immunization or polio, adhoc meetings are convened as needed. Sharing of information between partners including between WHO and UNICEF is not perfect and same from private sector.

Communications/Social Mobilization

The communication campaign depended on mass media (TV and radio), and distribution of IEC materials (posters and leaflets) in the first two house-to-house campaigns. Free air time was provided by public and private stations. The communication data generated by IM showed that 96.2 % of parents heard about the campaign, 66.7% through TV, while PHC centers, schools and nurseries were additional main sources of getting detailed information.



Heard via:	n	%
Television	5,887	66.7
Municipality delegates	769	8.7
Word-of-Mouth	675	7.6
Nurseries & schools	522	5.9
Posters on the road	155	1.8
Journals and radios	149	1.7
Churches & Mosques	144	1.6
Other *	525	5.9

Information Provided by:	n	%
PHC Centers	2,852	33.1
School	1,879	21.8
Nurseries	1,381	16.0
Municipality	814	9.5
Television	633	7.4
Family Doctor	365	4.2
Word-of-Mouth	323	3.8
SMS	188	2.2
Other *	170	2.0

*"Other" categories include UN and other NGOs representatives, phone calls

Figure5. Communication Data Generated by Independent Monitoring: Labanon 2103

However, PCM results showed that reasons for not receiving polio vaccination during the 2013 campaigns were almost all related to communication. As per below chart, 43.4% mentioned that child has already been vaccinated and 22.3% did not know about the campaign. A KAP survey done at end 2013 showed that among Syrian refugee children, 76.7% were vaccinated through mobile clinics in ITS, 15.3% received vaccine at health Centers/clinics and MOSA SDC. Among those unvaccinated, 30.3% did not know where the vaccines are provided and 9.9% consider vaccines costly and far to reach.

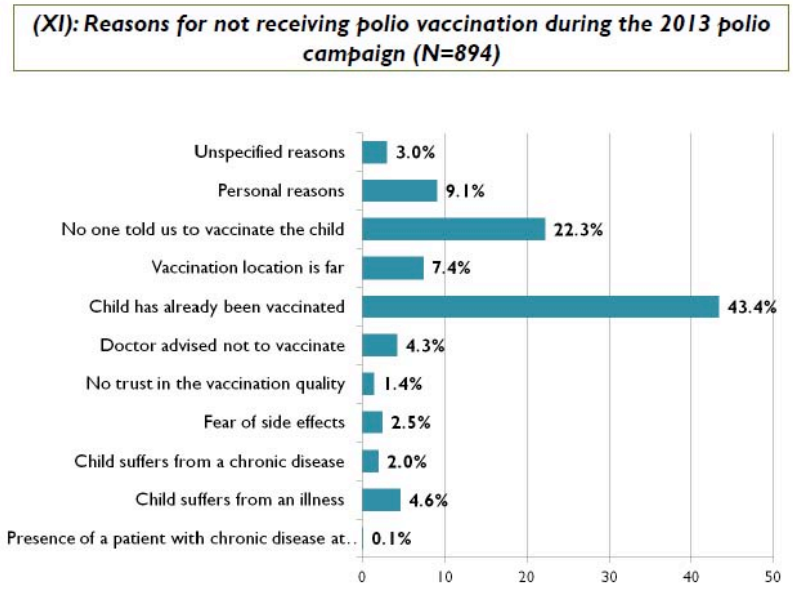


Figure6. Resons for non Vaccination during SIAs: Lebanon 2013

Communication for March campaign depended on mass media, IEC material (posters and one million leaflets were produced targeting parents, teachers, social mobilisers and health personnel), internal memos within the ministry of health, and sensitization of the pediatric association which followed up with all the private sector physicians with letters and SMS. Circulars and forms for parent's consent were sent to the schools. In select areas, there was sensitization of religious leaders and megaphone announcements. The launch of the campaign was well attended by ministry officials, twenty six district medical officials, private physicians, UN partners, and was well covered by the local media.

The shift from house-to-house to facility-based strategy, the repeated campaigns in a country that has been polio free for long time, and where private sector is the primary source of service even for vaccination, represents real communication challenges that warranted attention. According to the plan, a multi-pronged strategy was to be used with intensification of mass media, sensitization of private sector and schools, and with high community mobilization. Involvement of religious and community leaders, and role of municipalities and district medical officials in mobilization and reaching out to the communities was supposed to be stronger and more organized. We noted that IEC material arrived only 2-3 days before the campaign and distribution was suboptimal. There was good acceptance in schools. On discussion with mothers, many had not seen the mass media campaign and were only aware of the campaign on contact with medical personnel. There were some misconceptions and false contraindications to vaccine (fever, diarrhea). The inability to reach the target through the planned days lead to extension of the campaign for another week.

Vaccine Logistics and Cold Chain

The target used for NIDs is 600,000 children under five years old. The campaigns were implemented using tOPV and UNICEF provided the vaccine as per the below table. In addition, 2200 vaccine carriers were provided. In the field it was observed that the cold chain was well maintained and there were sufficient ice packs, the VVMs were in good shape, and there was sufficient vaccine available. Challenges remain with identification of remaining vaccine stock and retrieving balance.

Campaign	Target	Required Doses	Delivered (amount and type)
November	600,000	750,000	1.5 m tOPV
December	600,000	750,000	
March	600,000	750,000	1.75 m tOPV
April	600,000	750,000	

Table 3. Vaccine supplies for SIAs: Lebanon 2013-14

Refugees and other "Hard to Reach" or inaccessible populations

Unlike other countries in the region, there are no camps for Syrian refugees in Lebanon. Syrian refugees in Lebanon are located in over a thousand informal tent settlements (ITS) and collective shelters in different host communities, making tracking and access difficult.

Despite having close to a million registered Syrian refugees with UNHCR, about 25% of Syrian refugees remain unregistered and are hard to access. UNHCR supported health facilities provide vaccination through fixed sites but the vaccination of Syrians living in ITS is carried out from tent to tent by a local NGO, Beyond, which is supported by UNICEF. The Shaweeshs (i.e., local leaders of each ITS) are sensitized by Beyond staff before campaigns and have been extremely helpful in organizing the campaigns, resulting in excellent coverage in the four settlements visited during the review.
The principal challenge, however, is that there remain significant social and financial barriers to reaching Syrian children scattered across different host communities all over the country, with limited access to health services. A KAP survey carried out at the end 2013 showed that among Syrian refugee children, 76.7% were vaccinated through mobile clinics in ITS, while15.3% received vaccine at health centers/clinics and MOSA SDC. Among caregivers of those who were unvaccinated, 30.3% did not know where the vaccines were provided and 9.9% considered vaccination services costly and not readily accessible. These findings lend further credence to the existence of financial and acceptance barriers that have a negative impact on vaccination coverage amongst this group. In a 2013 survey on routine immunization, 91.8% of Lebanese reported having 3 or more polio doses, 88.7% in the non-Lebanese (permanent) population, and 66.8% in the non-Lebanese (recent) population.

Significant cross-border population movements, including arrivals of increasing numbers of refugees from parts of Syria with low vaccination coverage, pose a continued risk for WPV importation. Polio and measles vaccination are provided at UNHCR registration centers and border entry points. However, there is a need to ensure access to Syrian refugees and other high-risk populations by both vaccination and surveillance networks.

Summary

- Lebanon responded to the polio Middle East outbreak in a timely manner
- As planned for the first phase, 3 NIDs were implemented and one more planned in April. The key milestone of achieving at least 95% coverage (by IM) in all SIAs was not met. There is decreasing coverage from round to round
- AFP surveillance system well established however, there are issues with sensitivity, timeliness and quality indicators. Active surveillance should be improved/strengthened
- Routine immunization coverage shows decreasing trend in certain areas/populations
- Significant cross border population movements, including refugees, poses continued risk for WPV importation, and a need to ensure reach to high risk population by both vaccination and surveillance networks
- The efforts of the program in Lebanon are commended; however, there continues to exist a risk for viral importation and possibility of spread

- Efforts exerted should continue throughout 2014 baring changes in the epidemiological situation.
- Efforts should focus on: improving quality of campaigns to ensure highest population immunity and avoid viral transmission within the country; strengthening AFP surveillance in part by increasing sensitivity and in part by adding efforts to improve quality; and continuing to explore innovative methods to identify and reach the hard to reach high risk populations especially refugees living in host communities.

Recommendations

SIAs Recommendation

- Planning should be strengthened to include appropriate strategies to reach all children with vaccination wherever they are. A flexible approach is needed based on local context allowing mixed strategy (house-to-house and facility-based)
- The next phase will dictate a targeted approach with focus on hard to reach high risk population. Specific plans and strategies should be developed to identify and access these groups with information, vaccination and surveillance
- Providing package delivery and polio plus interventions to reach hard to reach population
- Continue and strengthen advocacy with the private sector to ensure their involvement, cooperation and support
- Independent monitoring should be done immediately after each campaign with prompt analysis of the data to identify gaps and take corrective action

Communication Recommendations

- Diversification of strategies is needed to reach all targets and improve the visibility of campaigns at community level through:
  - Intensification of community based outreach efforts especially with community leaders and CBOs to reach high risk population, create awareness, address concerns, increase risk perception and generate demand and acceptance of repeated rounds
  - Intensification and creativity of communication and mass media coverage is needed with new attractive messages targeting family concerns and emphasizing the need to immunize every child each round
- Generation of more evidence to inform communication plans
- Integrate messages with other aid programmes (WASH, nutrition)
- For longer term communication strategy need to address building trust in health systems and promote routine immunization

Surveillance Recommendations

- Revive active surveillance in Beirut and expand active surveillance to other areas to ensure that hospitals and health facilities receiving non-Lebanese are included
- Establishing network for community surveillance should be considered using key community informants within hard to reach populations (possibly Shaweshs and Mokhtars)
- Increase staffing and logistical support. WHO may consider providing surge staff needed and address extra needs of transport
- Review current AFP investigation practices including stool transportation and implement appropriate actions to address delays
- Awareness meetings should be planned and conducted for orientation of health personnel together with regular sharing of information on current epidemiologic situation and performance
- Strengthen capacity for basic data management and analysis at local level (maps, indicators, monitoring charts, line list etc.)
- Explore the possibility of implementing supplementary surveillance activities (healthy children stool surveys or environmental sampling)

Routine Immunization Recommendations

- Identify areas/groups with sub-optimal routine immunization

- Maximize opportunities for RI:
    - Border crossing points
    - Ensure inclusion of RI in Package of mobile teams
    - Provide support to HF serving refugee population (vaccine & staff)
- Develop protocol for catch up for under-immunized
- Improve reporting and data sharing (Private sector/partners)

Coordination Recommendations

- Regular technical meetings and sharing of information is necessary for optimization of efforts in next phase

TURKEY

Background

As part of the global poliomyelitis eradication initiative, Turkey established the Polio Eradication Programme in 1989. The last case of poliomyelitis caused by indigenous transmission of wild poliovirus virus (WPV) was detected on 26 November 1998. As a result of this, the European Region (which Turkey is included) has been certified as polio-free, on 1 June 2002.
Before certification, Turkey was part of the Operation MECACAR (the coordinated poliomyelitis eradication efforts in Mediterranean, Caucasus and central Asian republics) and conducted nationwide SIAs during 1995-2000 (coverage, 93%-96%), and sub-national SIAs during 1997-2000 (coverage, 82%-84%). In 2010, in response to WPV1 importation leading to the outbreak in Tajikistan and 3 other countries, Turkey implemented 2 rounds of subnational SIAs in south-eastern provinces with trivalent OPV, targeting children 0-5 years of age (coverage, 84% and 88%). In addition, SIAs for polio and measles-rubella, synchronized with Syrian Arab Republic were implemented in November 2012 and April 2013, targeting children in refugee population (in response to refugee influx and measles outbreak in Turkey).

This summary report reviews response activities that have been undertaken in Turkey since the outbreak of WPV was confirmed in October 2013 in Syria, assessing their impact, and it seeks to determine how the risk of importation of WPV into Turkey can be further mitigated. The report also integrates key findings and recommendations of the UNICEF HQ-RO CEE/CIS mission took place from 24-28 March 2014.

Current situation and risk assessment

According to the Government of Turkey, to date the country has more than 600,000 registered refugees from the Syrian Arab Republic, of which about 220,000 are accommodated in 21 camps and more than 400,000 are in host communities. In the first two months of 2014, more than 20,000 Syrian refugees arrived in Turkey, the biggest influx since early 2013 according to UNHCR. The number of registered refugees that are registered as of 25 March 2014 was 648,909.

Supplementary Immunization Activities (SIAs) achievements and challenges

Following the confirmation of WPV cases in Syria, Turkey implemented series of supplementary immunization activities (SIAs) in the provinces bordering Syria. The first round of SIAs was implemented from 18 to 24 November 2013 targeting 1,061,000 children in 7 provinces. The second round of SIAs was implemented from 18 to 29 December 2013 targeting 1,750,000 under 5 children in 11 provinces. The third round of SIAs was implemented from 17 to 23 February 2014 in 4 provinces (not included in November 2013 round). Details of these campaigns, including administrative coverage estimates, are presented in the table below (Table 1). There are plans to conduct SIAs on 7-11 April 2014 covering six new provinces (not covered in previous rounds) including five bordering Iraq (they will also take this opportunity to locate and vaccinate all refugee populations living in the other high risk provinces which have been vaccinated in previous rounds- an additional dose.). Turkish government also provides all the needed logistic support to vaccinate children around borders regions.
Additionally technical teams are considering a round in May that will cover the April round provinces possibly also including Istanbul. Institute of Public Health conducts intra-campaign monitoring for each round by having supervisors do a 10% sample survey of their target area.

- House-to-house vaccination strategy was used in the targeted provinces which enabled the teams to reach the majority of the Turkish population in the absence of accurate and updated area-based population data within the family doctor system, and similarly access the Syrian population living in host communities.
- Special vaccination cards for polio SIAs were distributed by IPH and provided by the teams to caregivers. Finger marking was not used.
- In the camps, Syrian refugees were covered by inviting families to the fixed vaccination sites set up for each sub-division of the camp.
- Both administrative and intra-campaign monitoring indicates overall high coverage and improvement over time at national level.

- The challenge remains in numerating, reaching and vaccinating Syrian children, especially those living in host communities. Aside from the operational challenges, the observations emphasize communication challenges in printed material and during personal interaction, due to the language barrier.
- IPH has established its own intra-campaign monitoring (ICM) scheme conducted by the Provincial Public Health Directorates to identify the reasons for missed children, and to cover those before the end of the round. This data is a valuable source to complement administrative coverage in the absence of independent monitoring.

Date	Vaccine	SIA type	Status	Provinces/coverage (all children <5 years)	Target % (Turkish children only)	Coverage % (Turks and non-Turks children)
18-24 November 2013	tOPV	SNID	completed	7 provinces (6 provinces bordering Syria + 1 province Adana with large amount of refugees)	1,061,000	1,148,918 (90%)
23-29 December 2013	tOPV	SNID	completed	11 provinces (6 provinces bordering Syria + 1 province Adana with large amount of refugees + 4 provinces)	1,750,000	1,316,326 (92%)
17-23 February 2014	tOPV	SNID	completed	4 provinces (not included in November/December 2013 rounds	287.683	266,141 (90%)
7-13 April 2014	bOPV	SNID	planned	6 provinces (Hakkari, Diyarbakır, Batman, Siirt, Van, Mersin) not covered in previous rounds.	622,080	

Table 1. Polio Vaccination Campaigns and Coverage Estimates — Turkey, 2013–2014

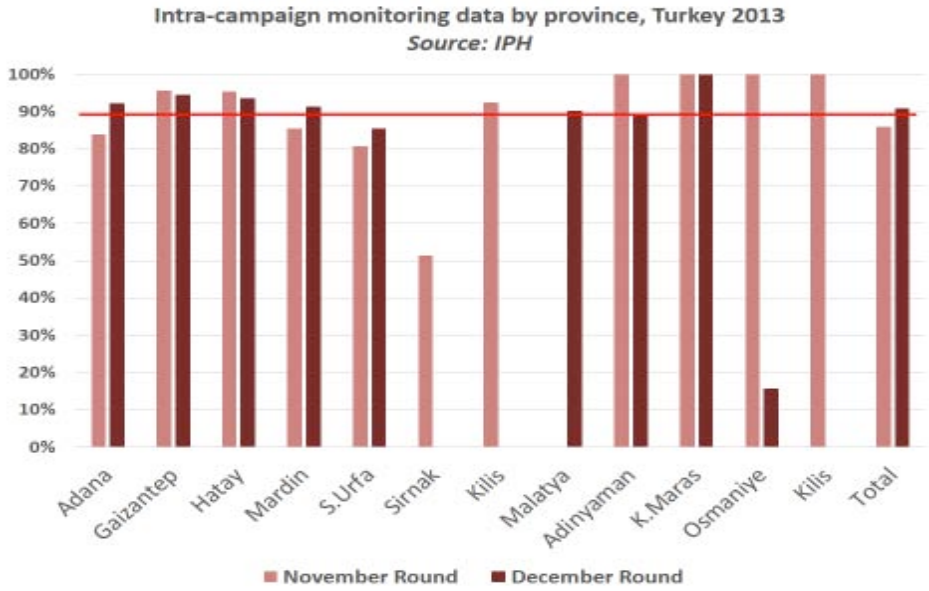


Figure 1. Intra-Campaign Monitoring Data by Province. Turkey 2103

Acute Flaccid Paralysis (AFP) surveillance

There is an established, well-structured AFP surveillance system in Turkey to detect and investigate most AFP cases. AFP surveillance has been in place since 1989. The national non-polio AFP (NPAFP) rates ranged between 0.7–1.1 cases per 100,000 persons <15 years during 2010–2014 (Table 2). In 2012 and 2014 the annualized the non-polio AFP rate was below the WHO-EURO recommended cut-off level of 1/100,000.

The NPAFF rate in the provinces bordering Syria was below the WHO benchmark for regions bordering countries with ongoing WPV transmission (Table 3).The proportion of cases with 2 adequate stool specimens ranged between 74%-86% rates during 2010–2014. The timely notification of AFP cases was consistently below the WHO benchmark of 80% during 2010–2014; however, majority of the AFP cases were investigated within 48 hours of notification and 60-day follow-up was

high. Furthermore, at the subnational level, gaps in AFP surveillance performance have been noted during 2010-2014 in several provinces including those bordering Syria and Iraq. <15 years old population estimates have not been adjusted to reflect refugee population in the provinces where they reside.

Turkey has a WHO-accredited National Polio Laboratory (in Ankara) and one subnational laboratory (in Izmir). RRL in Bilthoven, the Netherlands, conducts ITD and final characterization of any poliovirus isolates.

Indicator	2010	2011	2012	2013	2014
NP-AFP rate	1.1	1.0	0.9	1.1	0.7
% Cases notified within 7 days from onset of paralysis	53	57	49	49	58
% Cases investigated within 48 hours from notification	95	96	99	99	98
% of AFP cases where follow up is done 60 to 90 days after onset	73	78	72	52	
% Non polio Entero Virus	9	8	9	7	0
% adequate stool specimens	74	81	80	74	86

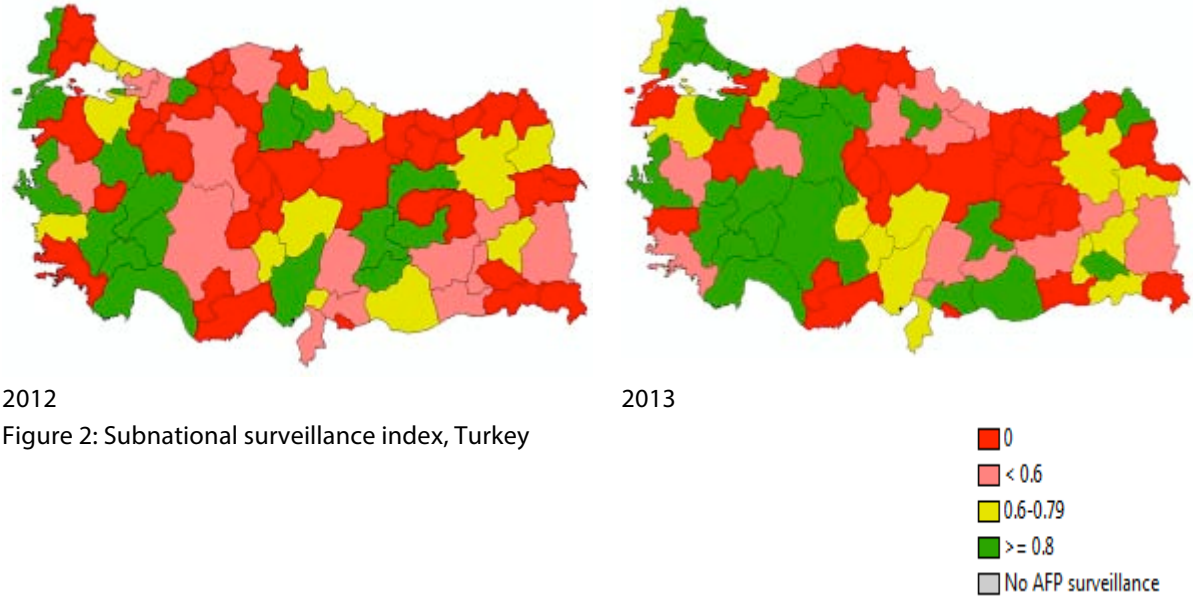
Table 2. Acute flaccid paralysis (AFP) surveillance indicators— Turkey, January 2010–March 2014*

* Data as of 24 March 2014.

	NP-AFP rate				Stool adequacy			
Province	2010	2011	2012	2013	2010	2011	2012	2013
Adana	0.6	0.6	1.1	1.1	75	50	83	75
Hatay	0.6	0.2	0.2	1.4	100	100	100	60
K. Maras	0.2	0.5	0.2	0.5	100	50	100	33
Osmaniye		0.6	0.6	1.8		100	100	33
Malatya	0.8	0.8	0.8	0.8	50	50	100	100
Adiyaman	1.6	0.8	1.6	0.8	50	50	100	67
Gaziantep	0.3	0.8	0.2	1.1	0	60	100	90
Mardin	0.7	0.7	0.3	0.3	100	100	100	0
Sirnak	0.6			0.6	0			100
National	1.1	1.0	0.9	1.1	74	81	80	74

Table 3. Acute flaccid paralysis (AFP) surveillance indicators— provinces in Zone 2, Turkey, 2010–2013

The 27th Meeting of the European Regional Certification Commission for Poliomyelitis Eradication, May 2013 considered Turkey to be at intermediate risk of transmission of wild poliovirus following importation due to suboptimal vaccine coverage in critical provinces and declining AFP surveillance.



2012 2013

Figure 2: Subnational surveillance index, Turkey

Routine immunization achievements and challenges

Turkey has always procured its own vaccine. Turkey historically overall has had a high national POL3 coverage, but subnational coverage in the south-eastern part of the country has historically had lower rates than the rest of the country. The national and provincial levels with the POL3 estimates from 2009-2012 are 96-97% using WHO-UNICEF polio immunization coverage estimates. The RI schedule has a combined IPV/OPV schedule with multiple opportunities for vaccination: OPV given at 6m and 18m of age along with IPV doses at 2m, 4m, 6m, 18m, and 6y. Furthermore, at refugee registration points, tOPV is administered to all travelers, regardless of age, and then going forward, Syrian children participate in RI following the Turkish vaccination schedule. However, immunity profile among NPAFP aged 6-59 months reflects weak routine immunization (Figure 3).

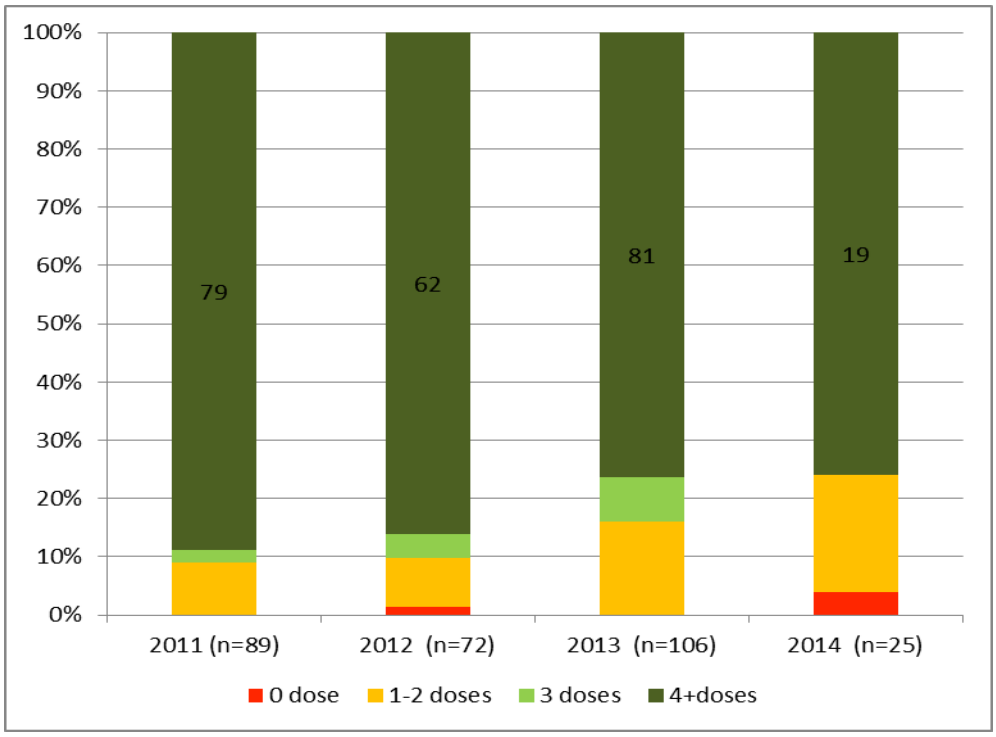


Figure 3. Polio vaccination NPAFP case aged 6-59 months—Turkey, 2011–201

Coordination achievements and challenges

The Institute of Public Health in the Ministry of Health (MoH) met once with the technical team from WHO and UNICEF in a coordination meeting to discuss and organize field visits. Members of the committee conduct joint technical briefings and discussions at both the Ankara and Gaziantep level. MoH has been coordinating closely with Ministry of Interior to obtain a map of scattered and refugee populations who reside in various cities, with larger concentrations in cities like Istanbul, Mersin and Izmir.

The National Certification Committee (NCC) for Poliomyelitis conducted an assessment of the risk of polio for all provinces in Turkey and provided the SIA recommendations for the "high-risk/border zone" provinces and the rest of the country.

Social mobilization achievements and challenges

MoH Turkey led social mobilization efforts to ensure high levels of participation during campaigns. UNICEF printed and distributed 42,500 posters and 3,500,000 brochures in both Arabic and Turkish. Posters were widely distributed in hospitals, health centers, markets, mosques and schools, and places where Syrian refugees congregate. Brochures were distributed to schools and to parents. In camps, loudspeakers were used to announce campaigns. "Children, Come to Vaccinate. Two drops of vaccine lest turn into tears later"– used in all communication materials and messages by health workers. Frontline workers were provided with IPC skills. High visibility material for health workers (hats, gloves, etc). Challenges exist regarding locating where Syrian refugees are in host communities and reaching them and communicating with them. Language remains a barrier and will require further work. Existing community networks among

the Syrian refugees (youth, women's group, teachers, mukhtars and headmen) can be involved more systematically in the campaigns to locate the communities, increase awareness, bridge cultural and language barriers and track unvaccinated children for both SIA and RI. An awareness raising spot was also produced and UNICEF is looking at showing it on local television in the targeted areas.

Lauch ceremony attended by Health officials including Dr. Mehmet Ali Torunoğlu, deputy director of the Heath Ministry's Public Health Agency

Campaign poster ""Children, Come to Vaccinate. Two drops of vaccine lest turn into tears later" December 2013, K.Maras

Refugees and other "Hard to Reach" or inaccessible populations

Based on information made available by the Government of Turkey, to date, the country has over 600,000 registered refugees from the Syrian Arab Republic, of which about 220,000 are accommodated in 21 camps and over 400,000 are located in host communities. In the first two months of 2014, more than 20,000 Syrian refugees arrived in Turkey, the biggest influx since early 2013. According to UNHCR, The number of registered Syrian refugees in Turkey as of 25 March 2014 is 648,909. The bulk of both in- and out of camp refugees are located in the 3-4 provinces bordering Syria.

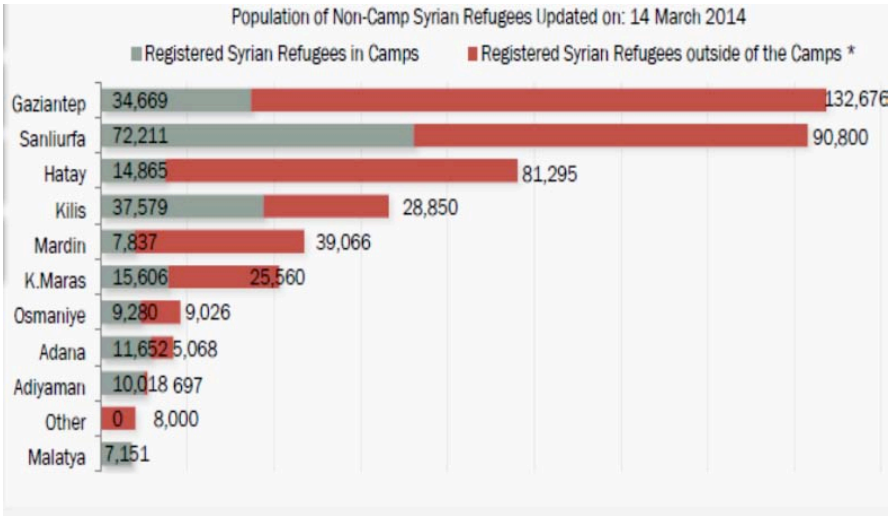


Figure 4. Refugees in camp and outside of camps on 14 March 2104
Source: AFAD, Turkish Ministry of Foreign Affairs.

At refugee registration points, tOPV is administered to all persons travelling from Syria, regardless of age groups including adults at the two opened border crossings and then, going forward, under 5 children participate in routine immunization following the Turkish vaccination schedule. Further, the Turkish Ministry of Health has been coordinating closely with the Ministry of Interior to obtain a map of scattered and clustered refugee populations who reside in various cities, with large concentrations in cities like Istanbul, Mersin and Izmir. This is being done with a view to gaining a clearer picture of where these groups are located so that specific plans can be made to reach them during future vaccination activities. However, due to the constant movement of Syrian population, following up children for RI has been a very challenging task.

Recommendations:

SIAs

- Conduct post-SIA coverage evaluation (Independant monitoring/ LQA)
- Consider increasing the number of provinces included in the May SIAs
- A targeted approach should be developed with specific plans to address high risk groups/areas and reaching the consistently missed
- Develop a country workplan outlining priorities and activities for the remainder of the year

AFP surveillance

- Enhance active case search and improve reporting
- Implement outcomes of AFP surveillance review scheduled for April 2014
- Ensure inclusion of private sector in reporting AFP cases and collecting/submitting stool samples

Communication and Social Mobilization

- Develop, implement and monitor a data-driven communication plan with specific strategies for inaccessible areas and hard to reach populations

WEST BANK AND GAZA

Background

Palestine (also referred to as the State of Palestine, Palestine, or OTC within this report), have populations of 2.7 and 1.7 million persons, respectively, a significant proportion of whom are refugees of Palestinian origin. No case of paralytic polio has been reported in this area since 1992, though wild poliovirus (WPV) has been isolated from environmental samples in the area at various times since the last reported case. First, in February and August 2002 WPV was isolated from sewage samples in the Gaza Strip; then, more recently, WPV1-positive environmental samples were identified in sewage taken from the Rafa area of Gaza in August 2013. Subsequent tests on sewage samples have isolated WPV in other parts of Gaza and the West Bank, the most recent of which was in January 2014. However, no case of paralytic polio has been identified in the associated areas.

In response to the WPV-positive environmental samples in the Rafa area, a sub-national campaign was conducted in the area in September 2013. The emergence of confirmed cases of paralytic polio in neighbouring Syria in October 2013 heightened concerns about maintaining the area's polio-free status, thus prompting further action toward developing an outbreak response plan for the area as part of a larger regional response.

This summary report describes outbreak response activities that have been undertaken in the West Bank and Gaza Strip with a view to mitigating the risk of WPV circulation and transmission in the area. It also outlines recommendations for the next phase of outbreak response activities.

Supplementary Immunization Activities (SIAs)

Three rounds of vaccination campaigns have been held in the West Bank and Gaza Strip since the first reports of WPV-positive environmental samples in the area in 2013. The first round of SIAs, as earlier mentioned, was limited to the Rafa area of Gaza using trivalent OPV (tOPV). This was followed by two national immunization days (NIDs) using tOPV in December 2013 and January 2014, respectively. Administrative data from all three SIAs indicated that overall coverage levels were high (range: 89%–102%; Table 1). Partial coverage data from the United Nations Relief & Works Agency for Palestine Refugees in the Near East (UNRWA) revealed significant disparities in the coverage levels reported in the West Bank relative to Gaza Strip (Figure 1). Based on UNRWA estimates[1], coverage in the West Bank was low (<60%) in both campaigns.

Problems identified during implementation of campaigns include delays in vaccine delivery, limited quality of supervision, and the lack of personnel to conduct independent monitoring. Despite these constraints, campaigns were completed as planned with high overall coverage, but the low coverage in West Bank remains a source of concern.

Dates	Vaccine Type	SIA Type	Status	Admin Coverage (%)
4–5 September 2013	tOPV	sNID	Completed	102
8–12 December 2013	tOPV	NID	Completed	89
12–16 January 2014	tOPV	NID	Completed	99

Table 1. Polio Vaccination Campaigns Conducted and Administrative Coverage — Gaza and West Bank (MOH/WHO)

[1]UNRWA coverage estimates are based on target populations of 157,000 children in Gaza and 48,059 children in West Bank, which represent only a proportion of the overall target populations for the campaigns. The low coverage in West Bank was attributed to inclement weather and a staff strike that occurred during the campaign period.

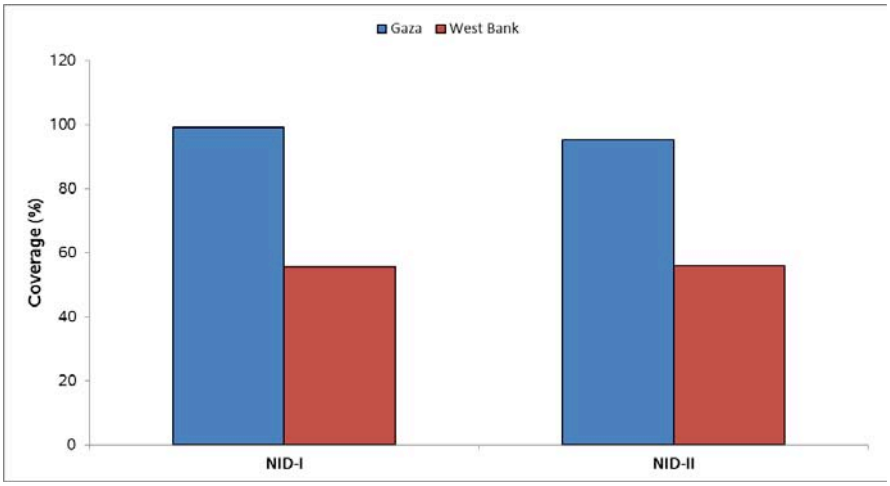


Figure 1. Polio Vaccination Campaigns Conducted and Coverage Reported – Gaza and West Bank (UNRWA)

AFP Surveillance

AFP surveillance has generally been of good quality but delays have been noted in the time needed for specimen transportation to the laboratory (Table 2). Non-Polio AFP (NPAFP) rates doubled from 1.1 to 2.2 cases per 100,000 persons <15 years during 2011–2013. Other key indicators of the timeliness and adequacy of case investigation, including stool specimen adequacy and non-polio enterovirus isolation rates, consistently met established benchmarks during 2011–2013. However, the percentage of stool specimens reaching the laboratory within three days of collection did not only fail to meet the benchmark, it has progressively declined in each of these years. Though immunity gaps were not identified among NPAFP cases, the delays in stool specimen transportation represent a critical deficiency in the surveillance system which needs to be addressed.

Indicator	Target	2010	2011	2012	2013	2014
Non polio AFP rate/ 100,000 <15 years	2	0.9	1.1	1.2	2.2	2.5
% adequate stool specimens	80%	100	100	95	95	100
% Non polio Entero Virus	10%	7	12	19	18	13
% Cases notified within 7 days from onset of paralysis	80%	87	100	81	87	88
% Cases investigated within 48 hours from notification	80%	93	94	95	84	100
% specimens in lab within 3 days from collection	80%	60	71	62	39	13
% AFP Cases investigated after 60 days from onset of paralysis	80%	100	100	90	95	0

Table 2. AFP Surveillance Indicators — West Bank and Gaza Strip, 2010–2014

Routine Immunization

Routine immunization coverage against polio in West Bank and Gaza is excellent, as POL-3 coverage has consistently exceeded 90% since 2005 (Figure 2). The current immunization schedule uses a combination of IPV and OPV to vaccinate children at 1, 2, 4, 6 and 18 months, and at 6 years of age. Continuous monitoring and evaluation of the routine immunization system is required to ensure that high levels of performance are maintained.

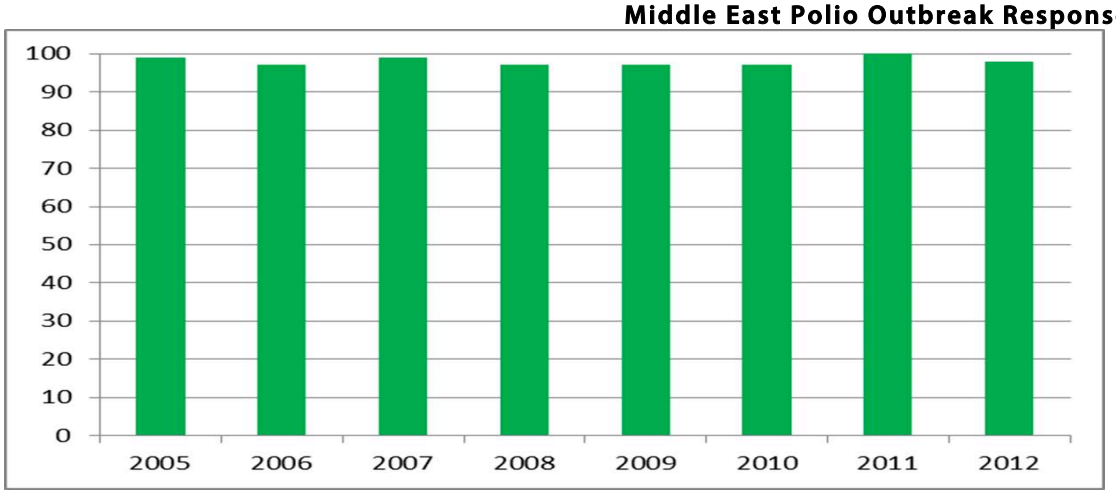


Figure 2. POL3 WHO-UNICEF Estimated Percentage Coverage — West Bank and Gaza Strip, 2005–2012

Vaccine and Logistics

About 1.5 million doses of tOPV were procured through UNICEF for campaigns in December and January. Delays in vaccine delivery were reported during these campaigns. Logistical support has been provided by the Ministry of Health, WHO, UNICEF, UNRWA and other partner agencies. Several constraints remain in the implementation of campaigns in the area, including limited funding, inadequate human resources, and dwindling levels of community support.

Recommendations

SIAs

- Additional rounds of campaigns needed in the West Bank area
- Training of supervisors, to ensure high quality supervision
- Independent monitoring of future campaigns
- Additional funding and human resource support needed for campaign implementation

Routine Immunization

- Continuous monitoring to ensure high level of coverage is maintained

AFP Surveillance

- Overall quality of surveillance system should be enhanced
- Logistical support required to ensure that delays in stool specimen transportation are rectified

Coordination/Communication and Social Mobilization

- Establish central coordinating group to guide SIAs and social mobilization activities
- Working group should comprise MOH, UN agencies, community-based organizations, academics, private practitioners, physician associations etc.

EGYPT

Background

The last confirmed wild poliovirus case in the Arab Republic of Egypt was reported from Assiut in May 2004. In 2012, environmental samples showed wild poliovirus. Data provided by the AFP surveillance system and SIAs confirms that Egypt has high-quality polio eradication activities. Despite having been polio-free for 10 years, Egypt remains committed to maintaining a highly sensitive AFP surveillance system with the ability to detect any wild poliovirus due to importations and vaccine-derived polioviruses (VDPVs).

Instability of the political situation in Egypt, Arab Spring revolutions, high population movement, and detection of wild poliovirus in Syria and Iraq are risk factors to the Egyptian government. Syrian refugees are located in the coastal cities in Egypt; Suiz, Port Saeed, Dumiat and Alexandria. Some refugees came informally and they prefer to be away from the government system while others don't consider polio vaccination a priority. Therefore, communication and political support are important strategies in implementation of polio campaigns.

This summary report describes outbreak response activities that have been undertaken in Egypt with a view to mitigating the risk of WPV circulation and transmission in the area. It also outlines recommendations for the next phase of outbreak response activities.

Supplementary Immunization Activities (SIAs) Egypt conducted 2 National Immunization Days in 2013 using tOPV vaccine and the administrative coverage showed 100% at country level as well as provincial level. In 2014, Egypt implemented one round SNIDs in North Sinai using tOPV and there is a plan to conduct NIDs in April. The coverage in all rounds doesn't show the Syrian vaccination status, and unfortunately the MoPH didn't conduct independent monitoring activities. However, coverage estimates for Syrian refugees was estimated at 86% in November round and slightly less in December round.

There is high quality of preparation and implementation of those rounds in addition to the high commitment from the MoPH. High community demands is an important factor facilitating the success of campaigns in Egypt. Absence of independent post campaign monitors does not guarantee coverage of Syrian children.

AFP Surveillance

Surveillance reporting started in Egypt in the early 1990s. In 1996, Egypt shifted to virological case classification and since then acute flaccid paralysis surveillance indicators have been maintained at WHO certification standards. From 2010–2013, all AFP surveillance indicators have been above global standards and the average NPAFP rate is above 3 per 100,000 children under 15 years of age nationally. However in 2013, there were some gaps in AFP surveillance and investigation timeliness indicators sub-nationally. In the Red Sea and New Valley governorates, the NPAFP rate is 1.6 and in a few additional governorates the time to investigation indicators were low. Despite these issues, overall during 2013, surveillance indicators remain strong in Egypt. In addition to AFP surveillance, Egypt conducts environmental sampling of sewage throughout the country. During December 2012, two environmental samples from two areas of greater Cairo sampling sites tested positive for WPV1. Subsequent testing has been negative for WPV in Egypt since this time.

Egypt has maintained strong AFP and environmental surveillance systems during the past few years. Global quality indicators are consistently met and Egypt's environmental surveillance system was sensitive enough to detect WPV during 2012. Egypt remains a vital country in the region and is a major economic and transportation hub in the region that receives visitors from countries throughout the region; some of which may be endemic with polio (Pakistan) or ongoing outbreaks (Syria). Given this, focus should be placed on identifying Egyptian and non-Egyptian populations that may be outside the current AFP surveillance system and including these populations in active surveillance activities. A specific recommendation is to conduct outreach to these populations, particularly in highly populated areas of Cairo and ensure these groups are included in AFP surveillance and in micro-planning activities for the upcoming NIDs in April 2014.

Routine Immunization (Immunity level)

Surveillance data showed that more than 95% of the children detected as an AFP from 6-59 month have received 4+ OPV doses. There is no single zero dose case since 2010. At provincial level Kafr-Alshikh and Matrouh provinces showed only

50% of the children have completed 3 OPV doses while all other provinces showed 88% and above. Routine vaccination coverage is high in Egypt both national and provincial wise. In 2013 all provinces showed above 90% coverage except Cairo is 76%. UNICEF and WHO planned to conduct assessment survey for routine immunization activities in some governorates including Cairo in 2014.UNICEF supports the MoPH to introduce the pentavalent vaccine in Feb 2014.

Coordination

Partners developed the Inter-agency coordinating committee (ICC) to coordinate polio activities in response to the positive environmental samples extracted from Egypt and Gaza as well as the Syrian outbreak. The ICC group was formed from MoHP, UNICEF, WHO, Rotary, USAID, and Japanese Government.

Communication activities–Social mobilization

UNICEF is currently undertaking a national communication survey to investigate immunization KAP indicators including polio. Results will be available by June 2014. High risk pockets/areas were identified based on some critical epidemiological and social issues; 27 districts were selected in 10 governorates. UNICEF and WHO are modifying the independent monitoring forms to provide a comprehensive review of communication interventions. The new forms will be piloted during the April 2014 NID.

Refugees and other "Hard to Reach" or inaccessible populations

Twenty-seven high-risk districts in ten governorates were identified based on critical epidemiological and social issues, including low immunization coverage, bordering a neighboring country, detection of WPV in environmental samples, and having a high concentration of Syrian refugees. Special communication and mobilization have been developed for these areas as a 2014 plan for communication development. Nonetheless, several partner organizations have expressed concern about the need for urgent action to improve vaccination coverage among Syrian refugee children in Egypt.

Most Syrian refugees are clustered in the 6th October district and the four governorates along the Suez Canal. Many of these refugees emigrated from parts of Syria known to have low vaccination coverage; hence, they constitute a group with a potentially significant immunity gap against polio. Administrative coverage for January round indicated significant drop in coverage rate among Syrian. Intolerance has been identified as a barrier limiting the access to health services for children in this group. To help ameliorate this problem, UNHCR and IOM, taking advantage of their available technical assets, have been working to bridge the gap between Syrian refugees and the country's health care system. IOM has recruited several health care workers to act as liaisons between Syrians and health centers in Egypt. Special communication strategies are also under consideration to improve access to this group, including the placement of adverts and programs on TV channels in Egypt known to have high audience participation among Syrians.

Conclusion and Recommendations

Egypt is a polio-free country, but instability of the political situation in many of Middle East countries including Egypt and population movements has put the country at risk. Isolation of virus from AFP cases in Syria and Iraq, in addition to positive environmental samples in Egypt, Israel and Gaza give serious warning to the MoPH in Egypt. The surveillance indicators at national and governorate levels showed satisfactory results and indicate that the system can detect any importation. High routine immunization coverage and community demands are successful factors for the outbreak response plan in the Middle East. Implementations of campaigns are quite good but there is need to ensure coverage of Syrian children distributed among the host Egyptian community. There are many initiatives that took place in Egypt supporting the PEI/EPI program. Establishment of Inter-country Coordinating Committee ICC including MoPH, UN agencies and donors, facilitate taking the decision immediately in an emergency. Introducing a new vaccine (pentavalent) will increase the community demands towards routine EPI. Independent assessment of immunity levels in 27 districts by WHO and UNICEF will give an idea about Syrian children coverage and will help for the planning of the upcoming polio campaigns. The most important recommendation is to strengthen the surveillance in Sinai and Suez Canal cities in addition to implementing independent PCA in April polio round onward to ensure coverage of non-Egyptians.

ANNEX 2: FIGURES AND TABLES

Table 1: Questions to address as part of Middle East Outbreak Response review

Question	Assessment	Comment
1. Did the outbreak response activities meet the outbreak response standards, particularly in terms of speed and appropriateness?	Yes	• Outbreak response activities were activated within 72 hours of notification. • There was a strong regional commitment through joint ministerial declaration at WHO Regional Committee meeting
2. Have national authorities and partners played their expected role as laid down in WHA and RC resolutions?	Yes	• Response plans prepared within two weeks of outbreak notification • WHO-UNICEF had received all national response plans by 11 November • Response plan was followed during outbreak response
3. Has SIA quality been sufficient to ensure poliovirus transmission is interrupted within shortest time possible?	Yes	• Initial response SIA was conducted within 4 weeks of notification • Repeated SIAs in Syria and neighboring countries have prevented explosive polio outbreak • Conducted at least 24 large scale SIAs in the 7 countries including five NIDs in Syria • SIAs targeted children <5 years of age in Syria and neighboring. • However, SIAs did not achieve at least 95% immunization coverage as evaluated by post-campaign monitoring
4. What was the quality of SIA planning, delivery, monitoring and communication?	High	• Overall SIAs quality was high, however, significant issues with access, security, hard-to-reach areas/populations • Post-campaign monitoring was not implemented for all the SIAs. • Awareness levels of campaigns reached more than 90% in Syria , Lebanon and Jordan
5. Is the AFP surveillance system sensitive enough to detect transmission?	Partially	• Although AFP indicators were low at the start of the outbreak, it has improved significantly, though there is weakness sub-nationally in in Turkey, Syria, Lebanon, and Jordan. • The surveillance detected case in Baghdad in February 2014 that was closely related to a case in Syria that had paralysis onset December 2013 • Six countries met the ≥80% target for the proportion of AFP cases with adequate stool specimens in the first quarter of 2014 with significant improvement
6. Have the polio outbreak response activities being undertaken in a manner that would strengthen routine immunization performance, particularly in the highest risk areas	Partially	• The main priorities of the response was to conduct SIAs to stop transmission, but RI messaging was included in campaign communications • Strengthening of Cold chain • Some SIAs included measles as well
7. Have sufficient financial, material and human resources been made available to support full	Yes	• Funds for outbreak response disbursed on time • Surge staff fielded to priority areas. However, these deployments were delayed in many cases

implementation of all recommended polio outbreak response activities?		• Strong response from donor community
8. Was national and international partner coordination effective during outbreak response	Yes	• Outbreak focal point for MOH and WHO, UNICEF designated in first week of outbreak • National weekly technical coordination meetings chaired by the MoH • SitReps and bulletins regularly issued
9. Are there remaining risks to stopping the outbreak?	Yes	• Remaining Hard to Reach areas/populations • Ongoing population movements within countries and internationally • Inadequate SIA quality in some areas • Gaps in AFP performance • Risk perception of the disease amongst other competing humanitarian needs. • Pockets of low Routine Immunization

Table 2: Goals and Targets for Middle East Polio Response

Zone	Countries	Goal/Target	Status	Comments
Targets	All 7 Target Countries	To interrupt wild polio virus transmission by end of March 2014	At Risk	All planned activities underway (conducted at least 24 large scale SIAs in the 7 countries including five NIDs in Syria) AFP surveillance improving but weakness sub-nationally in Turkey, Syria, Lebanon, and Jordan Post-campaign monitoring not implemented systematically in all countries . Low routine immunization coverage in some countries and sub-nationally as result of insecurity
Zone 1 Syria		NPAFP Rate greater than 2/100,000	On track	All governorates in Syria except Aleppo and Tartous achieved the NPAFP rate ≥ 2/100,000 in the rolling 6 months (01 SEP 2013 - 28 FEB 2014). Although NGOs in contested areas reported 78 AFP case in 2013, the AFP surveillance system remain weak as proportion of AFP cases with adequate stool specimens was only 18% because of insecurity affecting district and field level officers to carry out investigation and sample collections
		Six rounds of NIDs by April 2014	On Track	5 rounds completed with 2 further rounds planned for April and May.
		December SIAs reaches 90% of accessible population	Partially	In December 2013, 2.2 million <5 children were vaccinated by MoH Syria (101%) ; however coverage by Post-campaign monitoring (PCM) was only 79%.
		January reaches 90% of entire target population	Partially	.In January 2014, 2.5 million <5 children were vaccinated by MoH Syria (103%) ; coverage by PCM was 88%
Zone 2 (areas in surrounding countries bordering transmission zones) Iraq, Jordan, Lebanon, Turkey		Annualized AFP Rate greater than 2/100,000	Not achieved	NPAFP rate improved across the region, however, the rate s is still below the target 2/100,000 in several provinces in Turkey, Iraq, and Jordan.
		95% coverage in at least three SNIDs or NIDs	Partially	All campaigns achieved high administrative coverage. The December PCM in Lebanon and Jordan indicated low coverage among hard-to-reach population and refugees No PCM conducted as yet in bordering areas of Turkey and Iraq
		Vaccination of 95% of refugee children on registration/arrival in camps	Achieved	All children are referred to Health Service on arrival for routine vaccination.
Zone 3 (other areas in surrounding Countries)Iraq, Turkey, West Bank & Gaza, Egypt		Annualized AFP Rate greater than 2/100,000	Not Achieved	Annualized NPAFP rates (week 12, 2014) was 0.7 in Turkey, 1.1 in Jordan, 1.6 in Lebanon.
		95% coverage in at least two NIDs	Not achieved	SIA schedule completed with high administrative coverage, but no PCM data available for Turkey, West Bank, Egypt, Iraq
		Routine polio vaccination of 95% (POL-3) by Dec 2014	At Risk	Low and/or falling coverage in Lebanon, Iraq.

Table 3: Rolling 6-month non-polio AFP rate by intervention zone, 1 Sep 2013—28 Feb 2014

Zones	Country	Governorate / Region / Province	AFP case classification				Total AFP cases	Annualized (week 26)	
			Wild	Compatible	Discarded	Pending final classification		NP AFP rate	NP AFP cases (expected nb)
1	SYR	ALEPPO	2	3	7	2	14	1.5	19
		DAMASCUS	0	0	8	0	8	3.0	5
		DARA	0	0	2	3	5	2.1	5
		DEIR_AL_ZOUR	18	7	17	0	42	13.4	6
		EDLEB	2	0	5	3	10	3.1	7
		HAMA	0	0	8	3	11	3.6	6
		HASAKEH	2	1	16	4	23	7.8	6
		HOMS	0	0	6	3	9	2.9	6
		LATTAKIA	0	0	11	2	13	9.1	3
		QUNEITERA	0	0	0	1	1	5.2	0
		RAQUA	0	0	9	0	9	4.0	4
		RURAL_DAMASCUS	0	0	7	3	10	1.9	11
		SWIEDA	0	0	1	1	0	3.8	1
		TARTOUS	0	0	0	1	1	0.9	2
2	IRQ	ANBAR			12	0	12	3.7	6
		DAHUK			12	1	13	5.7	5
		ERBIL			13	1	14	4.0	7
		KIRKUK			4	0	4	1.5	5
		NAJAF			11	0	11	4.0	5
		NINEWA			23	0	23	3.4	14
		SALAH AL-DIN			10	0	10	3.5	6
		SULAYMANIYAH			6	1	7	1.9	7
	JOR	AMMAN			8	1	9	2.1	9
		BALKA			1	0	1	1.2	2
		IRBID			2	3	5	2.3	4
		JARASH			0	0	0	0.0	1
		KARAK			0	0	0	0.0	1
		MADABA			0	1	1	3.3	1
		MAFRAK			0	2	2	3.3	1
		TAFILEH			0	0	0	0.0	0
		ZARKA			1	5	6	3.2	4
	LEB	BEIRUT			2	0	2	4.2	1
		BEKAA			3	2	5	3.9	3
		MONT LIBAN			3	1	4	1.7	5
		NABATIYE			0	0	0	0.0	1
		NORTH			3	1	4	2.0	4
		SOUTH			4	2	6	5.4	2
	TUR	Adana			7	1	8	2.5	3
		Adiyaman			1	0	1	0.8	1
		Gaziantep			10	4	14	4.4	3
		Hatay			7	2	9	3.7	2
		K. Maras			1	0	1	0.5	2
		Malatya			1	0	1	0.8	1
		Mardin			1	0	1	0.7	2
		Osmaniye			3	0	3	3.6	1
		Sanli Urfa			5	2	7	2.1	3
		Sirnak			0	0	0	0.0	1
3	IRQ	*(rest of the country)*	1		126	8	135	3.0	89
	TUR	*(rest of the country)*			74	25	99	1.1	87
	WBG				18	7	25	2.9	17
	EGY				453	53	506	3.0	333

Table 4: Field observations during the March 2014 SIAs

Activities	Observations
Hard to reach /high risk populations	• Vaccination well organized in the camps/tents but difficult to know the status of those out of the camps. • New arrivals receive vaccination at entry points, however, no catch-up strategy for new arrivals. • No systematic strategies to reach these populations • Risk perception of the disease amongst other competing humanitarian needs
Supervision	• Supervisory structures exist in most countries, but no standard supervision tool • The quality of supervision also varies and was noted to be weak in many areas where it was conducted • Limited use/lack supervisory checklists or in-process monitoring tools
PCM/SIA review mechanisms	• Syria conducted PCM after each of three NIDs. • PCM has been done in Jordan for the December and March SIA as well a rapid assessment among the Syrian refugees after the November NID. • Lebanon had PCM in January for both Nov & Dec rounds combined • Inconsistency in finger marking was noted in some areas while in others it was not being done at all, cards were used in Lebanon • No PCM in Iraq, Egypt, and West Bank/Gaza.
Data	• Lack of in-process monitoring hampers use of data for corrective actions during the campaigns • Inconsistency of the target population in all the countries has led to over/underestimation, hence incorrect coverage making it difficult to know the actual number of missed children • Use of PCM data made difficult by reporting only in percentage without providing the raw data while combining PCM for two round makes it difficult to identify SIA implementation challenges for a specific round

Figure 1: Distribution of WPV and compatible cases in Syria and Iraq, 2013-2014

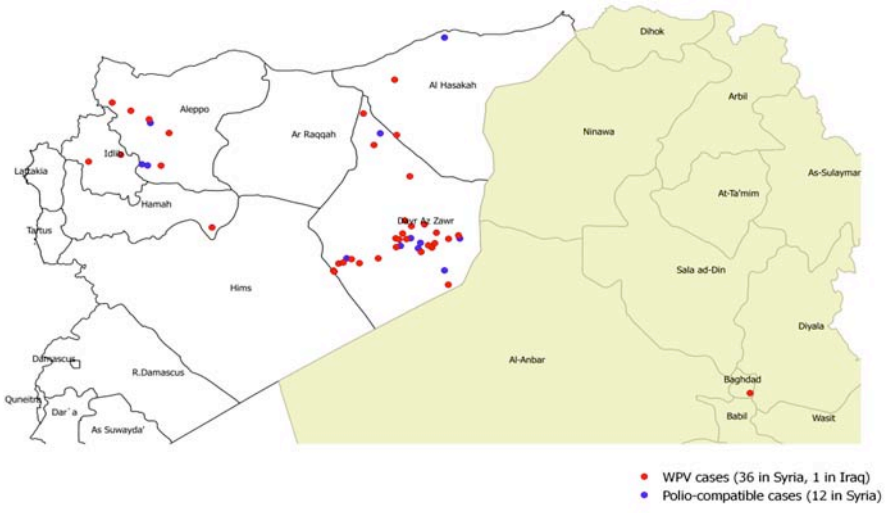


Figure 2: Sources of Information, Syria and Lebanon

Figure 3: Administrative coverage and parental campaign awareness, Syria, Lebanon, and Jordan

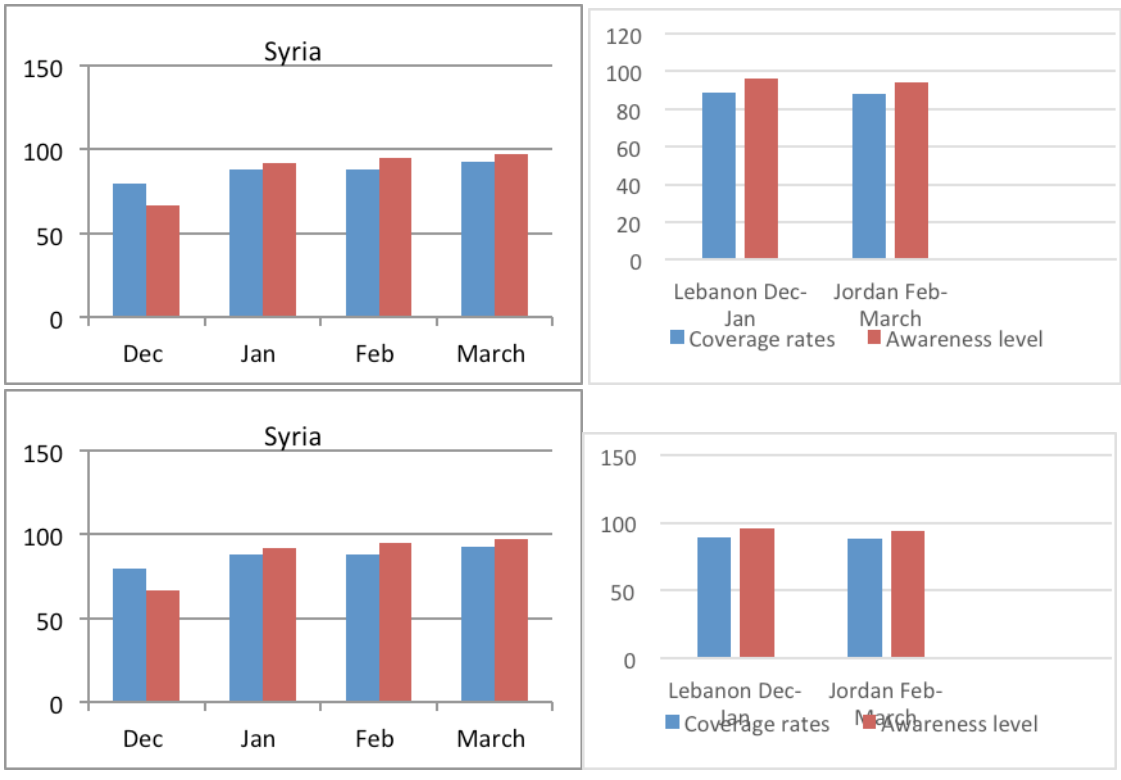


Figure 4: Estimated Polio Vaccination Coverage 2012