

External assessment of the quality of polio outbreak response in Syria

September 21 to 25, 2014

Draft report



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1 Background

After being polio-free for more than 12 years, Syria suffered a polio outbreak in 2013 following importation of wild poliovirus type 1 (WPV1) which was genetically linked to virus circulating in Pakistan during the first half of 2013. A total of 36 cases were reported, largely during the 4th quarter of 2013, with only one (most recent) case reported in 2014, at the end of January.

WPV1 was exported from Syria to Iraq where two cases were detected in April 2014, near the capital Baghdad. The Director-General of WHO declared the international spread of wild poliovirus in 2014 a Public Health Emergency of International Concern (PHEIC), under the International Health Regulations (IHR 2005), and issued Temporary Recommendations to reduce the international spread.

According to these emergency recommendations, Syria, as one of the four countries 'exporting' wild poliovirus in 2014, is requested to ensure that all residents and long-term visitors (visits longer than 4 weeks) receive a dose of oral polio vaccine (OPV) or inactivated poliovirus vaccine (IPV) between 4 weeks and 12 months before international travel.

Before the current crisis, the immunization programme in Syria had been one of the best programmes in the region. Coverage with 3 doses of OPV was above 90% until 2010 and then declined sharply to 68% (according to administrative reports) in 2012, largely due to the ongoing crisis. EPI services have also been badly affected by conflict. It is estimated that >40% of health facilities, largely primary health care centers which provide 80 to 90% of EPI services, have gone out of service, with another 24% of facilities partially damaged.

Also, transport of vaccines into contested areas, particularly to besieged areas controlled by the opposition, has become very difficult. Many health workers have left insecure places and moved to safe areas; this mission noted unusually large numbers of health workers in hospitals in the safe areas visited (i.e. in the main Suweida governorate hospital, and in Damascus city hospitals).

Due to the conflict situation in the country, and because of prolonged silent WPV1 circulation that was detected in both Israel and Palestine, a large multi-country outbreak response vaccination activity was launched in 8 countries of the Middle East, which responded to the high risk of a much larger outbreak in the sub-Region with multiple OPV SIAs (supplementary immunization activities). As of September 2014, more than 100 million doses of OPV have been given to children <5 in >40 OPV SIAs since December 2013.

The Syrian EPI, in collaboration with WHO and UNICEF, developed a 6-month outbreak response plan. For the first phase of the response, the plan included the implementation of 6 nationwide OPV SIAs, strengthening of AFP surveillance, improving routine immunization services, enforcing communication and social mobilization efforts and establishing effective coordination between national and international polio and EPI partners.

No cases have been reported since the end-January 2014. A plan was developed for the second phase of response, covering the period May-December 2014. The new plan focused on SIA quality, including on efforts to increase access to children in high risk and difficult to access areas, and on continued strengthening of AFP surveillance, targeted communication strategies and routine immunization.

At the time of this mission, nine polio response OPV SIAs had been conducted - all full NIDs except for the most recent SIA which was a sub-national immunization day (SNID, in early September).

The current assessment was conducted in the context of the WHO recommendation to conduct systematic external evaluations of the quality of outbreak response in all polio-free countries affected by new outbreaks. One of us (RT) had recently visited Syria to observe the SNID in early September; findings of this earlier mission were considered during the external review.

Objectives of the assessment were to assess the status of outbreak response activities and the quality of strategy implementation, including:

- the quality and coverage of immunization campaigns (SIAs);
- if surveillance is sensitive enough to reliably indicate whether or not wild poliovirus is still circulating anywhere;
- if communication and social mobilization activities are adequate to assure optimal vaccination coverage of all high risk groups, and
- to provide recommendations to correct, adjust and improve response activities if required

2 Activities

The assessment took place from 21 to 25 September 2014. Members of the assessment team were Dr Shoubo Jalal, communications expert from the UNICEF Regional Office (MENA Region) in Amman, Dr Ahmed Haran, polio eradication expert from the WHO Sudan polio eradication team, and Dr Rudi Tangermann, WHO HQ, Geneva, with technical assistance from Dr Salah Haithami, Medical Officer, Polio Eradication Team, EMRO, Amman, Jordan.

Following a comprehensive briefing and discussions at the national level and a visit to national polio laboratory in Damascus (day 1) the team visited hospitals and health centers in Damascus governorate (Damascus city) on day 2, followed by a visit to Rural Damascus governorate (day 3, health office and field visit to a nearby district of Rural Damascus) and to Suweida governorate, south of Damascus (day 4). Observations of field SNID activities during Dr Tangermann's visit in early September were made in Damascus city, and the governorates of Hama and Latakia.



It should be noted that due to the prevailing security situation, international staff can visit only selected areas outside Damascus; the team could not review any of the areas deemed by MoH to have 'difficult access' or to be inaccessible.

The assessment ended with debriefings both at the political level (with the new Minister of Health, 24 September) and with technical staff of MOH and local partner organizations, as well as with the WR Elisabeth Hoff (25 September).

3 Supplementary immunization activities (SIAs)

3.1 SIAs: main findings

Based on previous field visits (RT) and discussions during this mission, the assessment team noted that the engagement in SIA work of health leaders and health staff at all levels had remained strong - even though nine SIAs had been conducted since the beginning of the outbreak to date. Also, community acceptance and even demand had not diminished much in general.

Finger-marking and post-campaign independent monitoring of coverage has been conducted from the beginning of the SIA series in >90% of health districts and has greatly helped to assess the quality and reach of the campaigns, in addition to generating helpful 'social data' to establish the most likely reasons for non-vaccination of children missed by the campaign. Monitors take along OPV and vaccinate all children found to have been missed during the SIA.

There was evidence that post-SIA evaluation meetings had been done regularly, in the presence of all main partners involved (MoH, WHO, UNICEF, Syrian Red Crescent, UNRWA and UNHCR) and that lessons learned had been used to improve subsequent rounds. In many (but not all) places visited, this included the ongoing revision and adjustment of microplans in order to reach more children at risk of being missed by the SIA, both in accessible and in difficult to access or inaccessible areas.

SIAs conducted by MoH in Syria rely mainly on parents bringing children to 'fixed vaccination posts' - the PHC centers. In addition, 'mobile teams' are used, consisting of two-person teams in vehicles which move into an area and conduct vaccination from a temporary fixed post. Some mobile teams also conduct house-to-house vaccination in selected areas. The number of 'mobile teams' has been increased considerably from round to round in most governorates (a range from five to nine-fold increase), indicating that governorate health teams realized the important role mobile teams can play to reach children which otherwise would not have been brought to the health center. Increased mobile team use has also permitted an increase of the use of true house-to-house vaccination.

Although SIA management teams did not consistently keep track of the proportion of SIA doses given at health centers vs. by mobile teams (out-of-house vaccination, house-to-house vaccination), governorate teams estimated that only between 10 and 20% of doses during recent SIA rounds were given during house-to-house activities.

In two of the governorates visited, a newly introduced risk assessment scoring system was used to produce district 'risk assessments'; this information begins to be used to better target SIAs.

Also, new booklets have been introduced to facilitate documentation of activities for both mobile teams and supervisors; these were not always filled out completely but in several areas began to be used, and were found to be very useful for campaign monitors and managers.

A multimedia mass media campaign accompanied the SIAs; communication materials including brushers, banners and megaphones were timely distributed to subnational levels based on pre-campaign identified needs for each governorate, in addition to some locally

designed and printed materials. While partnerships with local actors have been effectively utilized to facilitate implementation at governorate and district levels, these efforts are not systematically documented.

However, efforts to better target children at risk of being missed were still not sufficient. These efforts need to improve coverage of two main groups of children at risk of being missed:

- children in accessible areas - if parents do not come to health centers or mobile teams - or
- children in difficult to access or inaccessible areas - because teams cannot reach them.

Important data on reasons for non-vaccination generated by the post-campaign independent monitoring activity were used in only few places for fine-tuning preparations of subsequent SIAs.

While use of house to house vaccination increased in most areas, mobile team activities, particularly the balance between street / out of house vaccination and house to house activity, are still not well enough targeted. Microplans need to be made even more specific in that respect. Also, mobile team supervisors still are not sufficiently familiar with what constitutes good supervision - and in most areas visited observations from supervision and intra-campaign monitoring were not documented using the new supervisory checklists. The supervisory check list developed is comprehensive and include questionnaire to monitor the implementation and the performance of staff as well as some social data collected through household visits.

Coordination with partners, particularly with the Syrian Red Crescent, in their attempt to deliver vaccine into and conduct vaccination in inaccessible, 'blocked' areas, is ongoing. However, it was the impression of the assessment team that coordination of this aspect could be better, and that the results of efforts to reach 'blocked' areas were not always fed back to governorate or central level in time. Also, additional groups and NGOs may exist in many places which could help to coordinate delivery of vaccines and vaccination activities 'cross-line' and into besieged areas.

As one of the four infected countries found to be exporting WPV1 in 2014, Syria was requested to implement the 'temporary recommendations' issued by the DG/WHO under the IHR in early May 2015, including to ensure that all departing residents or long-term visitors have received a dose of OPV or IPV. At its second meeting in July, the IHR expert committee was informed about the progress in implementing polio eradication strategies in the country, including SIAs and AFP surveillance strengthening.

However, while the government of Syria agreed to fully comply with the temporary recommendations, there has so far not been an official declaration, at the Head of State level, that the interruption of poliovirus transmission is a national public health emergency.

It was reported in July that there are two sites in the country which will provide vaccine to departing travelers: one official vaccination site for international travelers (Damascus city), and a new vaccination site at the main land border crossing between Syria and Lebanon, established in mid-July. The IHR expert group was informed in late July that 800 travelers had received vaccine to date. Unfortunately, updated figures on the implementation of the temporary recommendations made for departing travelers were not available at the time of this mission.

3.2 SIAs: Recommendations

- 1 *Upcoming SIAs should give priority focus on reaching children known to be at risk of being missed: those who do not come to fixed posts / mobile teams, and those who cannot be reached.*
- 2 *Existing microplans and maps should be reviewed and revised where necessary to reflect the presence of children at risk of being missed, using local knowledge as well as data from independent monitoring about reasons for non-vaccination.*
- 3 *Wherever possible, house-to-house vaccination activities should be increased, targeting areas with children at risk of being missed.*
- 4 *The quality and efficiency of mobile teams should be improved through:*
 - *rationalizing mobile team workloads, based on previous round achievements, to avoid work overload, including to establish additional teams where necessary;*
 - *more detailed microplans, with better demarcation of areas assigned to each team by campaign day, and details on how teams should balance their 'temporary fixed post' vs. house-to-house activities;*
 - *using the pre-SIA training sessions, including on effective interpersonal communication (IPC), for both mobile teams / vaccinators and for supervisors to assure all field staff understand their roles;*
 - *improved supervision will be essential for further improvements in the efficiency and quality of house-to-house immunization*
- 5 *MoH and governorate health teams should work with existing partners (SARC NGOs, UNHCR, UNRWA) as well as with new partners and communicate with volunteers to increase coverage of children in areas with difficult or no direct access.*
- 6 *MoH, in coordination with other government departments, should continue to implement the temporary recommendations issued under the IHR to reduce the international spread of poliovirus. Additional efforts should be made to*
 - *declare interruption of transmission as a national public health emergency at high level, to*
 - *improve the monitoring of pre-departure polio vaccination of international travelers, and to*
 - *regularly report to WHO on progress in implementing the emergency recommendations.*

4 Acute Flaccid Paralysis (AFP) surveillance

4.1 AFP surveillance: main findings

Following the detection of the outbreak, an AFP surveillance strengthening plan was developed, which included conducting trainings and sensitization sessions on AFP surveillance with doctors and health workers as well as basic refresher training on AFP surveillance for surveillance staff.

There was evidence that this activity has begun, at central and governorate level, but that it is lagging behind in some governorates. To date, more than 35 AFP training workshops have been conducted, with more than 1400 participants. The AFP surveillance guidelines have been updated and were used in the basic training of surveillance staff; the printed guidelines are about to be distributed. A new AFP alert poster for health facilities has been designed but not yet been produced or provided to the field.

The detection of AFP cases has considerably increased, with rates of reported non-polio AFP (projected for 2014) and proportion of AFP cases with adequate stool specimens in 2014 above the expected levels in most governorates (except Raqqa, Aleppo and Quneteira). Documentation and completeness of surveillance files (case investigation forms, documentation of active surveillance and of zero-reporting) was found to be good at all levels.

Active surveillance visits are regularly done and well documented; the network of surveillance sites, for active surveillance, appears to include all relevant hospitals and facilities, including the largest children's hospital in the country in Damascus, which for several years has been reporting 50% and more of all reported AFP cases.

There is a policy to collect 3 contact specimens for each reported AFP case to increase sensitivity of surveillance; two of the 36 polio cases were confirmed through a positive contact specimen (while the index case remained negative). The great majority of cases do have contact specimens collected - even though the completeness of contact specimen collection is lower in the governorates with large contested and inaccessible areas compared to areas with better access.

Despite difficult working conditions (i.e. limited space, electricity outages) the national polio lab continues to provide reliable service to the programme; the lab was once again accredited by WHO in 2014.

The national expert group for case classification is meeting regularly to classify cases and provide technical guidance to the programme. The programme issues a weekly AFP bulletin.

However, the team noted that considerable gaps remain in terms of AFP awareness among health workers in hospitals and facilities visited, particularly at the lower level. There were no visible posters to indicate the AFP case definition and telephone numbers to call.

The (non-medical) public health person conducting daily active surveillance visits to the large children's hospital in Damascus appeared well-informed and well-known in the hospital, visiting all relevant departments and documenting her searches well. However, there had not been a medical focal point for AFP in the same hospital for some time.

Also, while AFP reporting rates are >2/100.000 at the governorate level, reporting is considerably lower from difficult and inaccessible areas. Of note, the new supervisory checklist does include a question on AFP. However, health workers still do not routinely search for AFP cases during SIAs.

While the laboratory isolates SABIN viruses regularly (SABIN isolation rate at 8%), the non-polio enterovirus isolation rate in 2014 is only 1%; more than 50% of specimens reach

the lab in Damascus only after more than 3 days have passed after specimen collection (average 5 to 6 days). Specimens are stored in a freezer at the governorate level for one or more days, largely because couriers (from the health department) cannot easily travel to Damascus every day.

4.2 AFP surveillance: recommendations

- 1 *The existing AFP surveillance strengthening plan should be implemented fully to improve AFP sensitivity overall, especially in areas with difficult access.*
- 2 *Regular AFP training and sensitization sessions should continue, particularly targeting pediatricians and other health workers at active surveillance sites; planned AFP trainings at governorate level should be completed in all areas.*
- 3 *Active clinical focal points (ideally pediatricians with direct responsibility for the pediatric wards) to assure close collaboration with visiting public health staff should be designated and present in all active surveillance sites.*
- 4 *The planned large wall poster with an 'AFP alert' (i.e. case definition, name and telephone number of AFP focal point and of public health department) should be produced, distributed and displayed in all appropriate places inside all active surveillance sites.*
- 5 *Existing community-level sites of the disease early warning system (EWARN, more than 450 EWARN sites functional under MoH Syria), for which AFP is already one of the conditions to report, should give priority to AFP reporting, especially if the site is near or in areas with access limitation.*
- 6 *Pre-SIA training for SIA field staff should emphasize the need for AFP reporting during SIAs, i.e. that mobile teams should ask families for recently seen cases of paralysis.*
- 7 *Surveillance teams at all levels should assure that for each reported AFP case specimens are collected from at least three contacts.*
- 8 *To reduce storage time in the governorate health office, or avoid storage altogether if possible, couriers should bring specimens to Damascus as soon as possible after collection.*
- 9 *WHO and MoH should introduce LogTag temperature monitors, as planned, to monitor the temperature inside specimen containers during transport.*
- 10 *The network of Active Surveillance sites should continue to be reviewed and prioritized twice a year. Each health district should have at least one active surveillance site.*
- 11 *The national surveillance and governorate surveillance teams should review the very large ZERO-reporting network and consider reducing the number of sites, especially where there is overlap with the EWARN network.*

5 Communication and social mobilization

5.1 Communications and social mobilization: main findings

To support the polio outbreak response, a national communication strategy has been developed and implemented at central level utilizing a mix of media and means of communication (TV, Radio, Newspapers, SMS). The objective was to address communication and information needs for both routine and supplementary immunization. Consensus

workshops to promote the communication strategy were held at the governorate level; however, it was observed by the review team that the governorate level SIA communication frame work which was developed in March is not fully implemented.

In line with the national strategy and the needs, capacity-building workshops (TOTs - 'trainings for trainers') on IPC were organized for health education focal points. The mission found that this has been effectively replicated in Rural Damascus, targeting lower level EPI and communication staff, while the process has not yet started in other governorates. Most of the teams visited during the review at PHC and district level indicated the need for capacity building in communication.

At central level, MoH informs other Ministries (Ministry of Religious Affairs, Ministry of Education, and Ministry of Interior) of SIA dates through official letters. Inter-departmental and inter-sectorial coordination needs to expand further towards more effective partnerships, requesting other concerned Ministries and line departments to mobilize further and to develop their own action plans to support the campaigns.

In this context, the team noted that in all three governorates visited, there was evidence that inter-sectorial partnerships were critically important and very effective in facilitating and supporting campaigns, particularly to reach and vaccinate children in hard to reach areas. In these areas, local actors facilitated entry of vaccination teams, accompanied the team to mobilize people, facilitated the identification of key volunteers and assisted in resolving refusal issues; these local initiatives, however, were not well documented.

The communication strategy included the recruitment of local volunteers in contested and inaccessible areas, in order to increase community awareness of the importance of immunization overall and of the polio SIAs. Both Rural Damascus and Suweida governorates have identified and engaged community volunteers for high risk areas during the past campaign. The review team met with some enthusiastic young volunteers in Al Asad village center. It is recommended to target the community volunteers with IPC training as well. In spite of the high percentage of family awareness of the need to vaccinate to stop the polio outbreak (97%), post-campaign independent monitoring results showed that >60% of the reasons for children being missed were related to communication issues, such as caretakers 'not being informed' or 'not interested'.

Data on reasons for non-vaccination generated by post-SIA monitoring are not being shared systematically with governorate level and lower level SIA managers in a timely to inform the subsequent plans of communications. Hence, governorate levels communication plans in some places were limited to activities and logistical needs.

The supervisory check list developed by MoH is comprehensive and includes communication-related questions to help supervisors in monitoring SIA implementation and the performance of staff, and to collect some 'social data' during household visits.

Health education focal points at governorate levels report to be doing engaged in intra-campaign monitoring and also indicated that weekly supervisory visits for communication are scheduled for PHCs (Rural Damascus, Suweida). However, some of the health facilities visited reported that such visits had not occurred at the facility.

It was also apparent during the review that the knowledge on EPI, outbreak response and key campaign messages among hospital (clinical) and para-medical staff in the hospitals and health facilities visited was quite low. The availability of campaign educational materials was also limited at hospital levels.

The MoH EPI team realizes the important role played by the media in supporting quality SIAs. A media engagement plan is currently being developed and journalist meetings are scheduled to be conducted prior to the next campaign. The review team noted that this will be critical for the upcoming October polio SIA, due to the negative impact of the serious AEFI that occurred in Idleb recently. Fifteen infants had died following the injection of measles vaccine for which a muscle relaxant drug used by anesthesiologists had erroneously been used instead of the proper diluent.

The assessment mission acknowledges the progress made to implement supportive communication and social mobilization strategies to date. However, it was clear also that there was an urgent need to boost the communication/social mobilization human resource capacity at both central level and in several critical governorates, including rapid recruiting of additional dedicated staff. Just as for implementing the SIAs, additional and improved supervision will be needed to assure proper implementation of communication activities at all levels.

5.2 Communications and social mobilization: recommendations

- 1 There is an urgent need for additional experienced staff to boost the capacity of the central level EPI team to handle EPI and polio outbreak response communication and social mobilization issues.*
- 2 It is critical that governorate level communication plans are reviewed and implementation is monitored systemically, with particular focus on hard to reach areas.*
- 3 Support from additional and new partners (Ministry of Higher Education, Ministry of Education) should be sought to jointly work on EPI and outbreak response communication and social mobilization issues.*
- 4 Supervision of communication activities at all levels should be improved and better documented. Findings from supervisory visits should be used to improve performance, especially in areas where no post-campaign independent monitoring is conducted.*
- 5 Data on reasons for non-vaccination from post-SIA independent monitoring should be shared with all levels, particularly the local / district level to assure that this valuable information is used to inform and better target communication activities.*
- 6 Materials to inform, orient and educate the public on outbreak response activities and EPI should more systematically be shared with health workers at the hospital and PHC level, beyond the EPI / vaccination team.*
- 7 The draft integrated communication plan for routine EPI and polio outbreak response should be finalized as soon as possible.*

6 Routine immunization

6.1 Routine immunization: main findings

The conflict situation in Syria has negatively impacted on PHC and routine EPI services on many levels. In addition to limiting the access of communities to services, main factors

are the destruction of health facilities and infrastructure, interruption of electricity with impact on vaccine cold chain, the disruption of the flow of vaccine from recognized international manufacturers, and lack of operational budgets to conduct outreach activities, as well as inability to transport vaccines to contested areas. Two other conflict-related factors are the decreased supervision and absence of social mobilization.

Considerable efforts have clearly been made to utilize polio outbreak response and SIA activities to strengthen EPI services, especially in difficult to reach areas. Both supervisory visits for SIA planning and implementation, as well as SIA-related social mobilization have also targeted routine EPI services; in many areas, both OPV and other EPI vaccines were brought into difficult-to-reach and contested areas.

Following the review of Phase I of the Middle East Outbreak, MoH Syria and partners developed an integrated communication plan for routine EPI / polio SIAs. A revised and expanded EPI manual for health workers, including a component on IPC, is close to completion, and a draft plan of strengthening routine EPI services has been completed, to be implemented as soon as possible.

Mobile teams operating in some areas (Lattakia governorate) were observed to provide both OPV and routine EPI vaccination.

However, the millions of contacts made during each SIA round are still not used sufficiently to promote routine EPI and remind mothers / caretakers need to be reminded that SIA doses are 'extra' and that all children need to complete the routine immunization schedule.

6.2 Routine immunization: recommendations

- 1 *The revised EPI Manual for health workers should be finalized and distributed as soon as possible.*
- 2 *The implementation of the national plan for strengthening routine EPI services should be accelerated, as agreed at the Middle East Outbreak Phase II review.*
- 3 *SIA teams at all levels should assure that vaccinator and supervisor training gives priority to assure that the millions of contacts made with families during each polio SIA are effectively utilized to promote routine immunization.*
 - *During polio SIAs, mothers and caretakers need to be reminded that SIA OPV doses are 'extra' and the child needs to be brought to the health center to complete the routine EPI schedule.*

7 Partner coordination

7.1 Partner coordination: main findings

A National Polio Outbreak Response Coordinating Committee with members from MoH, WHO, UNICEF, UNHCR and SARC were established and meet regularly. It is planned to include additional partners in the coordination work (NGOs, other government sectors, such as the Ministries of Education and Higher Education).

Regular updates on the polio effort and on EPI issues are also provided to the UN/NGOs Health Coordination Committee. The Syrian polio outbreak response team has also participated in all Regional Middle East Outbreak response review meetings, held to coordinate and synchronize SIAs and exchange experiences between the countries participating in the sub regional polio outbreak response.

The assessment mission acknowledged the considerable efforts made to coordinate polio response activities between partners. However, it was also apparent that there are still coordination gaps, such as the need for additional partners with access to areas that are contested or not accessible for the government; reports of amounts of vaccine brought into these areas, and numbers of children vaccinated should be shared more regularly and clearly, whether related to routine immunization or OPV SIAs.

7.2 Partner coordination: recommendations

- 1 Additional efforts should be made to seek support from additional and new partners (Ministry of Higher Education, Ministry of Education) to jointly work on EPI and outbreak response communication and social mobilization issues.*
- 2 For successful SIAs, it is critical to optimize access to areas that are hard-to-reach or inaccessible for MoH and government health services. It is urgent to further improve coordination with existing partners, as well as to seek support from possible additional and new partners with access to contested areas.*

Annex 1: Activities

Activities	Date	Venue
Arrival of assessment team	20 September (SAT)	<ul style="list-style-type: none"> • Sheraton Hotel
Technical briefing, desk review and interaction with MoH, visit to polio laboratory	21 September (SUN)	<ul style="list-style-type: none"> • WHO Syria Office, • Ministry of Health Syria • PHC Directorate MOH Syria • EPI MOH Syria • NPL Syria
Field visits: Damascus (urban) governorate	22 September (MON)	<ul style="list-style-type: none"> • Damascus Governorate PHC / EPI • Pediatrics Hospital Damascus • Health Area 6 PHC Directorate • 7th April Health Center
Field visits: Rural Damascus governorate	23 September (TUE)	<ul style="list-style-type: none"> • Rural Damascus Governorate PHC / EPI • Qudsiya Area (District) • Directorate of Health of Qudsiya Area • Al Assad Villages Center • Al Sabboura Center
Field visits to Suweida governorate and compilation of findings	24 September (WED)	<ul style="list-style-type: none"> • Suweida Governorate • Directorate of Health Suweida Governorate • Suweida National Hospital • Suweida Health Center • Debriefing with Minister of Health, Syria
Debriefing Departure of assessment team members	25 September (THU)	<ul style="list-style-type: none"> • Technical debriefing at MoH, with polio partners • Debriefing at WHO Syria

Annex 2: Persons met during the visit

Ministry of Health and polio laboratory, Damascus

HE Dr Nizar Wahba Yazigy, Minister of Health, Syria
Dr Ahmed Khalifawi, Assistant Minister of Health, Syria,
Dr. Ahmed Aboud, Director, PHC, MOH Syria
Dr. Nedal Abourshaid, EPI Manager, MOH Syria
Dr. Kinan Fanos, Head, AFP Surveillance, MOH Syria
Dr. Lamia Abou Ajaj, Assistant EPI Manager, MOH Syria
Dr Mazin Al Haddad, DG of Pediatric Hospital, Damascus
Dr Issam Anjuk, Head of General Pediatrics at Pediatric Hospital, Damascus, and Member of Polio Expert Committee, Syria
Dr Hazza'a Al Khalaf, Director of Public Health Laboratories, Syria
Dr Darein Garfoug, Head of National Polio Laboratory, Syria
Dr Bushra, National Polio Laboratory, Syria
Howida Abou-Azan, AFP data manager, MOH Syria
Nirmin Abdalazez, AFP Surveillance Data Analysis, MOH Syria
Ghazl Tabbal, Polio Room, MOH Syria

Damascus Governorate Health Office

Dr. Allau Ibrahim, Director of Health
Dr. Imad Gamaal, Head of PHC Department
Ms Samaher Yunos, Surveillance Team
Ms Naema Uyoun, Surveillance Team
Mr William Hatoum, Head of Immunization
Dr Fadi Abu Samra, Director of Health District 6
Dr. Walid Ra'ad, Deputy Director, District 6
Mr Mohammed Salim Gaby, Head of Immunization, District 6
Ms Hanan Oda Bashi, Head of Health Education, District 6
Mr. Salem, vaccine manager / health education focal point, 7th April Health Center

Rural Damascus Governorate Health Office

Dr Abdullah Al Assaly, Director of Health
Dr Mohammed Al Tabba'a, Head, PHC Department
Dr Razan Al Tarabeishy, Head, Child Health and Immunizations
Dr Futoon Amin, Head, Health Education
Ms Hana'a Mohammed, Head of Vaccine Unit
Ms Basima Al Shama'a, Head of Surveillance Unit
Ms Sheirin Ghannon, Head, Vaccine Unit, Qudsiya
Ms Nuha Ahmed, Head, Statistics Unit, Qudsiya
Ms Kinana Al Ugdah, Statistics Unit, Qudsiya
Mr Lu'ay Kiwan, Head, Surveillance Unit, Qudsiya
Ms Rola Al Kurdy, Surveillance Unit
Dr Sawsan Togatly, Pediatrician

Dr Nazar Khider , Pediatrician

Qudsiya health district, Rural Damascus

Dr Mohammed Dabbor, Director

Ms Wafaa Moslim, EPI center

Ms Haifaa Saeid, EPI center

Ms Nisrein Ramadan, EPI center

Ms Samira As'aad, EPI center

Ms Luma Sa'ad, EPI center

Ms Sahar Ghanim, EPI center

Ms Lourin Othman, EPI center

Al Assad Villages Health Center, Qudsiay district, Rural Damascus

Dr Manal Nicola Alsabe'a, Deputy Director

Ms Zohour Ballol, Head of EPI

Ms Amal Hamdan, Head of Surveillance and Education

Ruba Morsil, Surveillance and Education Unit

Basim Sulaiman, Surveillance and Education Unit

Al Sabboura Health Center, Qudsiya district, Rural Damascus

Dr Mohammed Khair Ballan, Director

Khozama Swaigat, Director

Ms Widad Kannash, Head of Surveillance and Health Education

Ms Manal Al Sheikh, Surveillance and Education Unit

Abdulelah Ba'alabakki Surveillance and Health Education Unit

Ghada Jadid, Head of EPI

Khulod Al Assadi, Head of Statistics Unit

Suweida Governorate Health Office

Dr. Hassan Amrum. Director

Dr. Nahida Nasr , Head of PHC Department

Ms A'ada Hilal, Head of Immunization

Mr. Usama Al Mustafa, Head of Vaccine Store

Dr. Fandi Mahmoud, Director Suweida Governorate National Hospital

Dr. Iskandar Ghanim, AFP Surveillance focal point, Suweida Hospital

Dr. Ghassan Hussien, Head of Pediatrics, Suweida'a Hospital and Head of Suweida Governorate Pediatrics Association

Dr. Nashaat Shehada, Director, Suweida City Health Center

Ms Amira Salih Al Barouky, Head of AFP Surveillance and Health Education, Suweida City Health Center

Health Education team (Ms Reham , Mr Talal)

Annex 3: Figures

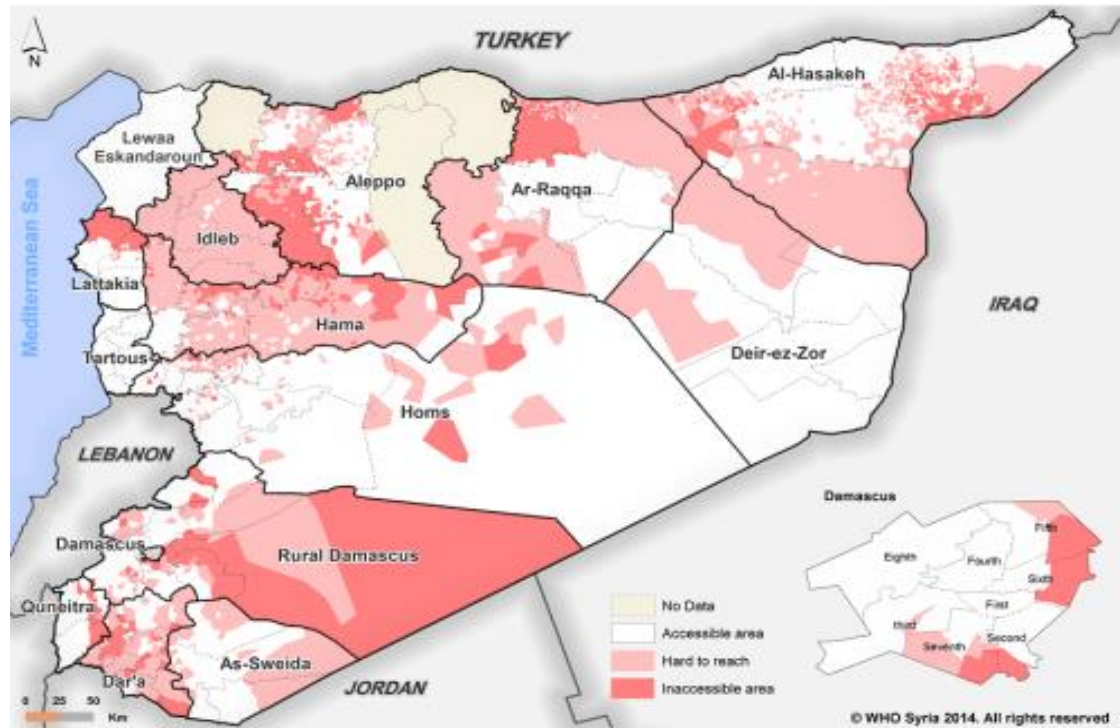


Figure 1: Hard-to-reach and inaccessible areas, June polio SIA, Syria



Figure 2: Satellite maps used to demarcate areas of team responsibility, June SIA, Syria

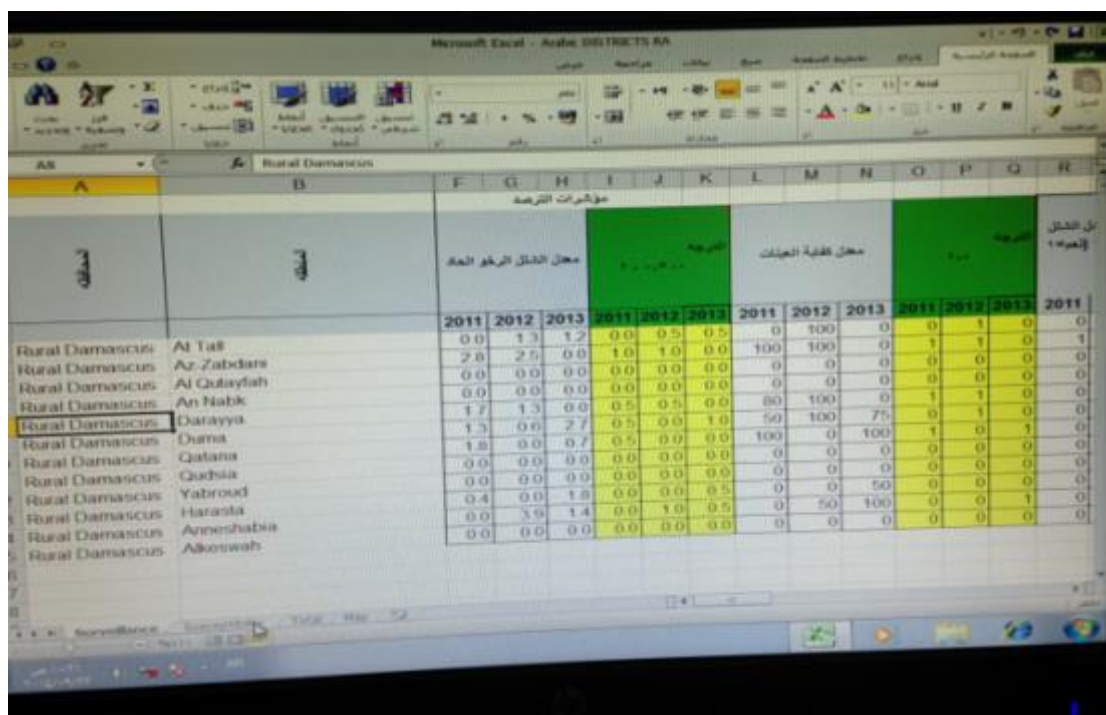


Figure 3: District level risk assessment and assignment of risk score, Rural Damascus, Syria

Governorate	U 15 yrs population	Total reported AFP cases	Polio	Pending classification	Compatible cases	Non-polio AFP cases	% Adequate stools	Annualized AFP rate	% NPEV	% SL
ALEPPO	1,323,858	13	0	0	0	13	69%	1.5	8%	15.4%
DAMASCUS	548,297	14	0	2	0	12	93%	3.9	0%	
DARA	383,124	8	0	0	0	8	100%	3.2	0%	
DEIR_AL_ZOUR	632,476	8	0	1	0	7	88%	1.9	0%	12.5%
EDLEB	662,640	10	0	1	0	9	90%	2.3	0%	30.0%
HAMA	622,794	22	1	0	0	21	95%	5.2	0%	
HASAKEH	598,262	12	0	0	0	12	92%	3.1	0%	
HOMS	535,242	18	0	0	0	18	94%	5.14	6%	5.5%
LATTAKIA	338,602	9	0	1	0	8	100%	4.1	0%	11.0%
QUNEITERA	112,500	2	0	0	0	2	50%	2.7	0%	
RAQUA	454,574	2	0	0	0	2	100%	0.7	0%	50%
RURAL_DAMASCUS	974,900	16	0	1	0	15	81%	2.5	0%	
SUWAYDA	107,381	7	0	1	0	6	100%	10.0	0%	
TARTOUS	334,761	8	0	0	0	8	100%	3.7	0%	12.5%
Total	7,629,411	149	1	7	0	141	91%	3.0	1%	8.0%

Figure 4: AFP data and indicators, by governorate, reported to MoH Syria as of mid-September 2014

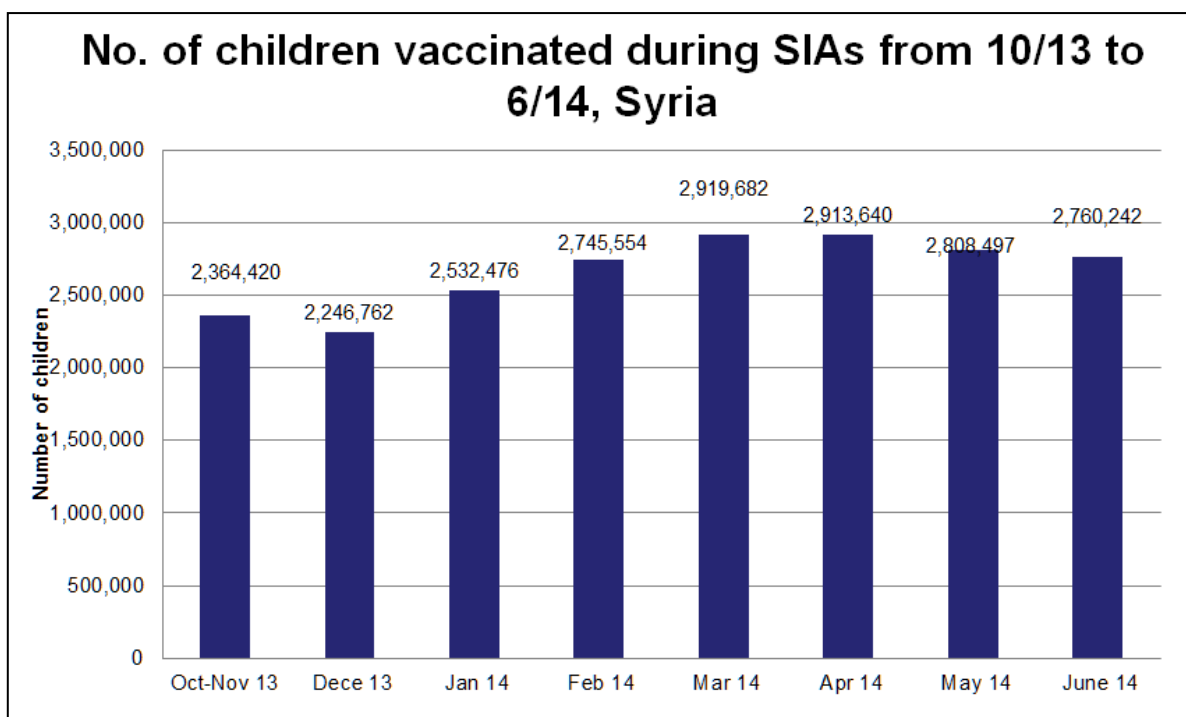


Figure 7: Number of children vaccinated during polio SIAs from October 2013 to June 2014, Syria

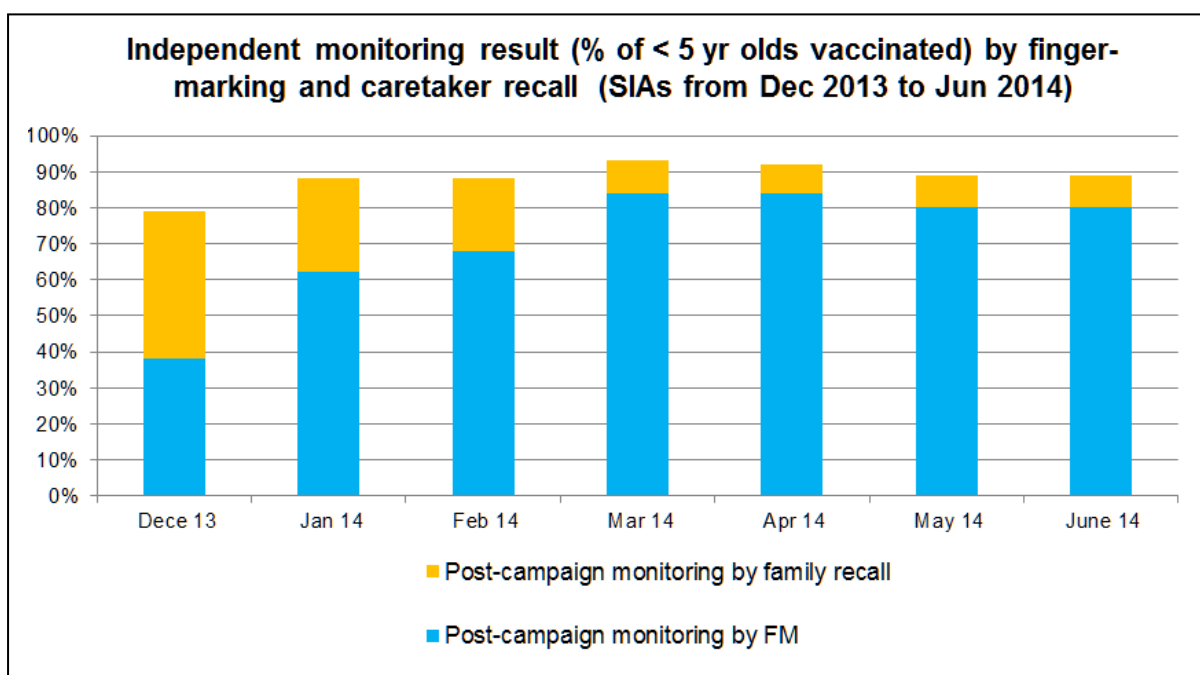


Figure 5: Results of independent post-campaign monitoring, by finger-marking and caretaker recall, SIAs from 12/13 to 6/14, Syria