polio global eradication initiative

BEST PRACTICES IN MICROPLANNING FOR POLIO ERADICATION

World Health Organization

Best practices in microplanning for polio eradication

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ACKNOWLEDGEMENTS

These best practices documents for polio eradication have been developed from the contributions of many people from all over the world. The people concerned have themselves spent many years striving to eradicate polio, learning from successes and failures to understand what works best and what does not, and quickly making changes to suit the situation. In writing these best practices the aim has been to distil the collective experiences into pages that are easy to read and detailed enough to be adapted for other health programmes.

'To strive, to seek, to find, and not to yield'

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SUPPLEMENTS TO THIS DOCUMENT (PROVIDED IN SEPARATE DOCUMENTS)

- BEST PRACTICES IN MICROPLANNING IN AREAS WITH POOR ACCESS (INCLUDING THE KOSI RIVER AREA OF BIHAR, INDIA)
- BEST PRACTICES IN MICROPLANNING FOR CHILDREN OUT OF THE HOUSEHOLD: AN EXAMPLE FROM NORTHERN NIGERIA
- BEST PRACTICES IN INNOVATIONS IN MICROPLANNING FOR POLIO ERADICATION
- BEST PRACTICES FOR PLANNING A VACCINATION CAMPAIGN FOR AN ENTIRE POPULATION

ACRONYMS

AEFI	Adverse event following immunization
AFP	Acute flaccid paralysis
GPEI	Global Polio Eradication Initiative
HC	Health centre
NGO	Nongovernmental organization
OPV	Oral polio vaccine
RCM	Rapid campaign monitoring
SIA	Supplementary immunization activity
SOP	Standard operating procedure

BEST PRACTICES IN MICROPLANNING FOR POLIO ERADICATION (POLIO SUPPLEMENTARY IMMUNIZATION ACTIVITIES)

INTRODUCTION

DOCUMENTING BEST PRACTICES FROM POLIO ERADICATION

Objective 4 of the *Polio Eradication & Endgame Strategic Plan 2013–2018* calls for the Global Polio Eradication Initiative (GPEI) to undertake planning to "ensure that the investments made to eradicate poliomyelitis contribute to future health goals, through a work programme that systematically documents and transitions the GPEI's knowledge, lessons learnt and assets". As outlined in the Plan, the key elements of this body of work include:

- ensuring that functions needed to maintain a polio-free world after eradication are mainstreamed into ongoing public health programmes (such as immunization, surveillance, communication, response and containment);
- transitioning non-essential capabilities and processes, where feasible, desirable and appropriate, to support other health priorities and ensure sustainability of the global polio programme;
- **ensuring that the knowledge generated and lessons learnt from polio eradication activities are documented and shared with other health initiatives.**

THE SCOPE OF DOCUMENTING BEST PRACTICES

Best practice documents deal with technical aspects of polio eradication. The documents will include clear guidelines, case studies of effective programmes and processes, case studies of failures, and innovations developed at the national, regional and global levels, and will highlight areas where other programmes could benefit from the polio practices to achieve their health priorities. A series of technical subjects are being developed on:

- improving microplanning
- ensuring quality acute flaccid paralysis (AFP) surveillance
- monitoring the quality of supplementary immunization activities (SIAs)
- securing access for Immunization in security-compromised areas
- targeting and planning for vaccination of older age groups during polio SIAs
- coordinating cross-border vaccination campaigns
- integrating other antigens or other interventions into polio SIAs
- targeting and planning for the vaccination of nomadic populations during polio SIAs
- benefiting f om other relevant technical areas where WHO country, regional and headquarter polio teams have signifi ant expertise.

THE PURPOSE OF THIS DOCUMENT

THE RELEVANCE OF THIS DOCUMENT TO OTHER HEALTH INITIATIVES

Many public health interventions are currently delivered through a campaign approach, which is likely to continue. This approach not only includes vaccines but other interventions for communicable diseases and nutrition, for children and, in certain circumstances, for an entire population, especially those facing emerging diseases.

THE SCOPE OF THIS DOCUMENT

This document describes best practices in microplanning for polio eradication campaigns, also known as supplementary immunization activities (SIAs) with oral polio vaccine (OPV). A microplan must aim to reach 100% of the target population, usually children aged under 5 years. Experience over the years has shown that the poliovirus can continue to circulate in quite small populations of unvaccinated children, thus requiring that the microplan be sufficient y detailed to reach every child with OPV.

The elements for making a microplan are described, along with the relevant best practices learnt over time. This document is a practical guide with working examples that can be adapted as needed. The best practices can serve as a guide for other public health programmes.

Over the last 25 years, microplanning for SIAs to eradicate polio has undergone changes and innovations. Errors were made and corrected, best practices were learnt through trial and error, without any textbook to follow. This document highlights what works best, but also indicates what does not work as well. The great strength of the polio eradication initiative is its fl xibility and ability to identify problems rapidly in order to make signifi ant changes, even at short notice.

This document does not replace the many guides, technical sheets and training materials already in existence; these published documents provide detailed information on strategies, principles, methods and operations. This document outlines the same strategies and elements, but gives advice on how the tried-and-tested practices can best be put into action. It does not include budget examples, which vary greatly from country to country.

DEFINITION OF A MICROPLAN

A microplan is a population-based set of components for delivering health-care interventions – in this case, supplementary polio vaccination for every child aged under 5 years. The microplan contains technical details and can be adapted as needed at every level, whether by national institutions, health-care workers or community participants. It is not a reference book but a dynamic set of tools that can be used and modified at any time o suit the demands of implementation according to the circumstances.

The microplan is divided into six sections:

- resource estimate
- cold chain and logistics
- operations
- supervision
- recording and reporting tools
- monitoring

OBJECTIVE OF THE MICROPLAN

Every person engaged in making and implementing the microplan must have a clear understanding of the objective: to achieve polio eradication through the systematic immunization of every child in the target population with polio vaccine.

Polio eradication microplans have adopted the innovative strategy of house-to-house vaccination over time. The health services in countries in which polio has been endemic did not reach everyone, and underserved communities had a greater burden of polio. Services were therefore brought to the community.

ENGAGING THE OPERATIONAL LEVEL IN MICROPLANNING

The microplan must work with the health service at the operational level, usually the health centre.

- Microplans must be validated in the field and not from afar at a high level of command.
- The details of their implementation must consider the real situation of the people in field operations.
- Standards must be set to plan and secure supplies and logistics, but flexibility to make changes to suit local conditions must be possible at every step.

Important lessons learnt

The polio SIA microplan is not just a collection of spreadsheets and budgets, it is a flexible and evolving set of plans at each level of operation that can be adapted and corrected rapidly, even between each campaign round.

The microplan requires field validation; spreadsheets may not reflect the reality of operations at the field level where access is difficult and resources are scarce. Detailed plans must be made at the operational field level (health centre or an equivalent institution).

Assigning teams to vaccinate children in a certain number of households per day in a defined area is often more effective than designating a total number of children per day.

The microplan must be able to show the details of exactly where every person needs to be and when, as well as their duties and movements during the entire period of the SIA.

Coverage data alone are not a reliable way to measure the results of a microplan. It is better to triangulate data using a variety of sources, for example supervisory reports, independent monitoring and surveillance data, to understand whether a microplan is adequate or needs to be modified.

MICROPLANNING ELEMENTS

CAMPAIGN STRATEGY DECISION

The campaign strategy must be decided and understood by the health service and community: *the immunization of all children aged 0 to 59 months with OPV on an equitable basis regardless of prior immunization status, location and social condition in a defined wide area (country, province).*

ESTABLISHING A COORDINATION STRUCTURE

A structure that can oversee and coordinate the development and implementation of the microplan must be established. It must include national-level decision-makers and representatives at other levels involved in the area of the microplan's operations. Imposing a plan at any one level should be avoided as full participation at every level is essential to make the plan work.

SETTING THE REQUIRED MICROPLANNING STANDARDS

Planning standards must be set for supplies, logistics, human resources, transport, equipment and the span of management control. The standards should be fl xible enough to allow local variations.

ESTIMATING MICROPLAN RESOURCES

- Make an initial population-based estimate of the total requirement for supplies, logistics, human resources, transport and cold-chain equipment at the highest level.
- Use the same population-based method to estimate requirements for supplies, logistics, human resources, transport and equipment at each level: province, district, subdistrict, health centre.
- Estimate resources according to the local characteristics, such as the extent of urban and rural areas, as they should not be standardized.
- Use simple form to estimate population distribution, supplies and human resource requirements at the district and health centre levels as conditions may vary greatly from place to place.

PLANNING THE COLD CHAIN AND LOGISTICS ELEMENTS

The microplan should include information pertaining to:

- the availability and deployment of cold-chain equipment;
- a plan for transporting vaccine and supplies.

PLANNING THE OPERATIONAL ELEMENTS

The operational aspects of the microplan should include:

- management procedures;
- a training plan;
- a health centre session plan (see Figure 1);
- a vaccination team daily logistics checklist;
- an individual team movement plan (see Figure 2);
- detailed operational maps and itineraries for the teams, organized by the number of households to visit with start and end points;

- fixed site information;
- house-marking information;
- finger-marking information;
- a special team deployment plan for transit points, markets and streets;
- a community engagement plan.

PLANNING THE SUPERVISORY ELEMENTS

The microplan should describe the duties of supervisors in detail. At every stage in its development and implementation, supervisors are expected to observe operations and take corrective action where needed. Their duties include:

- field validation
- immunization supervision and training
- team planning and scheduling
- responsibility for operational maps
- pre- and post-implementation checks
- checklist updates.

USING RECORDING AND REPORTING TOOLS

Simple field-based tools should be used to collect and report data on the implementation of the microplan.

MONITORING THE MICROPLAN

A plan for deploying monitors who will check the preparations and implementation of the microplan must be put into place.

ESTABLISHING A COORDINATION STRUCTURE

A coordination structure should include national-level decision-makers and representatives at other levels who are involved in the area of the microplan's operations. One innovation has been to establish Emergency Operation Centres working at the province and district levels to coordinate polio outbreak activities, including the extent of the SIA, the budget allocation, communication and training strategies, monitoring plans and cross-border activities.

The coordination structure's various committees and national and subnational committee members should ensure that:

- the same standards are applied everywhere;
- correct and appropriate messages are disseminated everywhere;
- all microplanning materials and all resources are available when and where needed.

Table 1. Coordination structure committees

National committee	is responsible for the overall monitoring of the planning, implementation and evaluation stages.
Technical subcommittee	follows up on the technical aspects of the process, verifying the national work plan and its target population and age groups; and assesses the adequacy of the training modules for every level.
Logistics subcommittee	ensures the availability of vaccines, adequate cold chain, transportation and supplies; and develops and implements the logistical distribution plan.
Social mobilization subcommittee	develops social mobilization materials and key messages, and plans their dissemination; and coordinates the recruitment of local social mobilization and community engagement focal points at the subdistrict level.
Finance subcommittee	ensures the availability of funds and their timely release to all levels, as well as the post-campaign financial eport.

SETTING THE REQUIRED STANDARDS FOR SUPPLIES, LOGISTICS, HUMAN RESOURCES, TRANSPORT AND COLD-CHAIN EQUIPMENT

BEST PRACTICE FOR SETTING MICROPLANNING STANDARDS

Planning standards should be set on realistic estimates, especially regarding the amount of work that vaccinators and supervisors must conduct in the time available. To keep an equitable workload throughout, it is necessary to vary the standards according to accessibility, distance and other local conditions including security. Regardless of their assigned workload, all vaccination teams are responsible for vaccinating children in their assigned area whether the children are in the house or out of the household.

ASSIGNING DAILY TARGETS OF TOTAL HOUSEHOLDS PER DAY OR TOTAL CHILDREN PER DAY

In the early years of polio eradication, countries would implement two or three rounds of polio immunization per year, and many children were missed. Often teams were set targets of around 200 children or more per day to vaccinate, and they would stop work when they had achieved the target number. They would then claim 100% coverage, even though additional children may have been in the assigned area. In later years as operations intensified, some countries would hold as many as 12 campaigns per year but, as it became critical that no child be missed, the strategy of setting total children as a target had to be modified. Communities became reluctant to accept many vaccination rounds and had to be convinced of their purpose. More time had to be spent on engaging the community and gaining its trust.

House-to-house vaccination provided the opportunity to engage families and convince them of its benefits but it proved more time-consuming and fewer children could be immunized per working day. Microplans were changed; in urban and semi-urban areas, it became more effective to assign each team to a certain number of households per day (approximately 50Ð75) than to designate a certain number of children.

- **In urban areas**, street maps can be used, and vaccination teams can be assigned a certain number of households to visit. A team's daily work can be precisely mapped, with identified start and end points. The houses can be numbered and the vaccination team can mark them according to the immunization status of the children within. Supervisors and monitors can more easily follow up on the work of the teams.
- **In rural areas,** such as villages where houses may not be organized on a street pattern, setting the target of reaching every household and every child in a village is more effective. However, simple maps showing designated start and end points can still be used, together with house-marking.

Table 2. Example of the standardization of resources (variable according to country and location)

Variable	Standard
Population aged <5 years (0 to 59 months)	Varies by country (approx. 13.5%)
Population aged <10 years	<5 years population x 1.5
Population aged <15 years	<5 years population x 2
Vaccinators per team	2 (minimum)
Support staff at post or in team	1–2
District refrigerator capacity	100 litres per refrigerator
Health centre refrigerator capacity	Approx. 20 litres per refrigerator
Number of households to be visited for immunization per day Average number of children aged 0 to 59 months per household	50–100 households 3 children
Number of children immunized per team per day	100–200 in urban areas 60–80 in rural areas
Number of teams per supervisor	4–5 in urban areas 2–3 in rural areas 2 in transit areas
Fuel consumption of a 4x4 vehicle	15 litres per 100 km on good roads 20 litres per 100 km off the road
Fuel consumption of a motorbike	4–5 litres per 100 km
Maximum daily distance for a national supervisor	150 km
Maximum daily distance for a team supervisor	100 km
Maximum daily distance for a vaccination team	30 km, if motorized
OPV wastage in 20-dose vials during SIA	15%; 1.2 wastage factor
Volume of a dose of 1.5 ml OPV	1000 doses per 1.5 litres cold storage volume
Capacity of 1 vaccine carrier with 4 ice packs	Approx. 1–1.5 litres
Capacity of 1 ice-pack freezer	Approx. 100 ice packs
Number of finger-marking pens needed per eam	2 pens per team per day of work

MICROPLAN RESOURCE ESTIMATE

(see Annex 1 for examples)

- Make an initial population-based estimate of the total requirement for supplies, logistics, human resources, transport and cold-chain equipment at the highest level.
- Use the same population-based method to estimate requirements for supplies, logistics, human resources, transport and equipment at each level: province, district, subdistrict, health centre.
- Estimate resources according to the local characteristics, such as the extent of urban and rural areas, as they should not be standardized.
- Use simple formats to estimate population distribution, supplies and human resource requirements at the district and health centre levels, as conditions may vary greatly from place to place.

BEST PRACTICE FOR ESTIMATING RESOURCES

- The microplan must start with an estimate of total resources, made several months in advance so supplies can be ordered and delivered in time.
- When planning a campaign, it is best to estimate the total resources needed in a timely manner.
- Time will be needed to gather the resources: vaccine must often be ordered from overseas, vehicles distributed, personnel trained and supervisors assigned. The extent of all these resources needs to be known well in advance at every level.
- Early planning estimates are also essential because a shortage of resources is more likely at the district level.
- Accurate resource estimates are calculated from population estimates, but the latter may vary according to the information source. Planning estimates should be made from the bottom-up, using the same framework despite varying population totals (i.e. using the same type of logistical plan with standardized variables but with values that may change from village to health centre to district due to the many different population estimates at each level).
- It is always best to slightly overestimate the population to ensure sufficient accines and other resources are available.

COLD CHAIN AND LOGISTICS MICROPLAN

(see Annex 2 for examples)

The microplan should include information pertaining to:

- the availability and deployment of cold-chain equipment
- a plan for the transport of vaccine and supplies.

BEST PRACTICE FOR PLANNING THE COLD CHAIN AND LOGISTICS

- Every province should estimate its cold-chain equipment situation early on. During a campaign, the demand for refrigerators, cold boxes to carry vaccine and freezer space is high.
- All districts should manage their cold-chain resources accordingly and well in advance.
- A district that has a shortfall in cold-chain equipment can receive assistance through the deployment of equipment from the province level or a neighbouring district.
- If district centres are not far from each other, pooling freezer capacity for ice packs may be possible at a shared location.
- Vaccine should be distributed from the province to the district no later than one month from the start of the campaign. Equipment can also be transported in advance in case of a shortfall.
- The province and district should regularly update their lists of equipment according to local transport information and the cold-chain equipment plan.

OPERATIONAL MICROPLAN

The operational aspects of the microplan should include:

- management procedures;
- a training plan;
- a health centre session plan (see Figure 1);
- a vaccination team daily logistics checklist;
- an individual team movement plan (see Figure 2);
- detailed operational maps and itineraries for the teams, organized by the number of households to visit with start and end points;
- fixed site information;
- house-marking information;
- finger-marking information;
- a special team deployment plan for transit points, markets and streets;
- a community engagement plan.

OPERATIONAL MICROPLAN FOR THE HEALTH CENTRE

- After the microplan resource estimates have been made, detailed operational plans will be required. The operational microplan is like a workplan: it describes the dates and places where teams, community representatives, volunteers and supervisors will need to be located on each day.
- The details outlined in the operational microplan depend on an assessment of the local situation and cannot be standardized.

BEST PRACTICE FOR MANAGING OPERATIONAL MICROPLANS

1. Send a simple message to all participants

The goal is to vaccinate all target-age children in a given geographical area.
Teams are assigned to specific a eas and must visit every household in that area to ensure vaccination.
Supervisors will check that teams have visited every household and that no child has been missed.

2. Divide the operational area into three categories of access

The number of children or households to be reached will depend on access and the time the teams have to work. Operational areas can be mapped, and vaccination teams and supervisors can be assigned accordingly.

Table 3. Three categories of access

1. Easy access: households can be reached on foot each day	50–80 households per day or 200 children
2. Intermediate access: transport is needed between areas, but households can be reached on foot	30–50 households per day or 100 children
3. Difficult a cess: areas include geographical obstacles, such as rivers, hills or bush tracks with poor road conditions	30–50 households per day or 100 children

3. Pay special attention to high-risk areas

High-risk areas require the best vaccinators and supervisors suited to the areas. Community mobilizers and influencers must be identified in advance to accompany teams.

High-risk areas can include those with:

- recent circulation
- low performances in previous rounds
- low routine coverage
- low surveillance performance
- settlements of urban poor
- new and informal settlements
- remote rural populations
- minority populations
- highly mobile populations
- nomads.

4. Select the best vaccinators

- Large numbers of vaccinators are needed to deliver OPV drops. If possible, select vaccinators from the community by engaging community leaders. This may be more effective than recruiting vaccinators through health service officials.
- Vaccinators should be from the same ethnic group as the target population, be familiar with the location and speak the same language. Previous experience is desirable.
- Sufficient female vaccinators should be available, given the need to engage mothers with young children.
- Nursing students, other university students and nongovernmental organization (NGO) staff often work well as vaccinators.
- Supervisors may be health service staff, teachers, NGO staff and other people with knowledge of the community.

BEST PRACTICE FOR TRAINING VACCINATORS

- All vaccinators and supervisors must be trained preferably in small groups by experienced senior staff and partners.
- The location of training is important. It should be local, and the participants should be able to hear clearly and interact with trainers with no outside distractions.
- The vaccinator's basic job is to administer vaccine, tally, and mark the finger and the house. The vaccination team should not be overloaded with other jobs unless they are essential to the plan.

Vaccinator training

- The training of vaccinators should not be left to newly trained supervisors; it should be undertaken by the most experienced professionals.
- The training site should be near the area where the teams will work (such as schools), with enough room for participants to be seated.
- The vaccinators' attention should be gained through interactive training in a number of small groups (around 20 persons) rather than in large groups.
- The training course should take one day, with half of the day spent on hands-on training and role playing with simulated vaccination activities.
- The training should be completed around five days before the campaign starts.
- An additional 5–10% more vaccinators should be trained in case of absentees on the campaign days.

Simple but clear vaccinator training content

- Vaccinators must know the campaign's purpose and objective.
- Every team and supervisor must use a map during each day of the campaign.
- Maps showing the boundaries where each team will work can be made during training or provided by supervisors.
- The maps for vaccinators must show landmarks where they should start and finish each day's work, and the route each team should take to move from house to house each day.
- Every team and supervisor must provide their mobile phone numbers to facilitate supervision and report problems.
- House-to-house vaccination should follow the assigned route shown on the map, with vaccinators marking houses and fingers as they go.
- Vaccinators should communicate politely with families, even those that refuse the vaccination.

- Training should include answers to frequently asked questions.
- Teams should know how to systematically record households to be revisited or absent children, noting the names of absent children, locked houses and family refusals on the back of the tally sheet.
- Follow-up of absent children should be conducted before the end of the day.

Key questions for vaccinators to avoid missing children

- At the household door: "How many mothers are in this house?"
- Then ask each mother: "How many children do you have?"
- To make sure all children, especially young infants, are included, ask each mother:
  - "Do you have an infant?"
  - "Do you have any sick children?"
  - "Do you have any visiting children?"
  - "Are any children sleeping?"

Vaccine distribution plan for vaccinators and supervisors

- Every vaccinator should know where to pick up vaccine and replenish it.
- Health centres should set up cold boxes and/or refrigerators where teams can conveniently pick up vaccine and ice packs before starting the day's work.
- Supervisors should have vaccine carriers with vaccine to replenish teams when needed.

Figure 1. Health centre session plan

Health Centre _____ Dates of Campaign _____ Vaccine Pick-Up Points _____

Name of area	High risk Yes/ No	Cate-gory of access	Total house-holds	Team number	Names of vaccinators and mobile phone number	Names of volunteers	Dates of visit to each area for campaign	Number of house-holds per day to be reached	Vials of OPV needed per day	Mode of transport	Supervisor name and mobile phone number	Village community focal point name and mobile phone number	Community engagement person name and mobile phone number
Town Centre North	No	1	200	1	2 vaccinators		23/12	100	20	walk			
							24/12	100	20	walk			
Town Centre South	Yes	2	150	2	2 vaccinators		23/12	50	10	walk			needed
							24/12	50	10	walk			
							25/12	50	10	walk			
Village 2	No	2	60	3	2 vaccinators		23/12	60	10	walk			
Village 3	Yes	3	75	4	3 vaccinators		24/12	75	20	bus and walk			
Total													

BEST PRACTICE IN HEALTH CENTRE SESSION PLANNING FOR VACCINATOR TEAM MANAGEMENT

The health centre session plan is organized by areas served. Teams are managed according to the area they will visit. The number of households per day, the number of people on the team and the community support will depend on local knowledge of the area. Some high-risk areas will require more time and community engagement, especially if there is vaccine hesitancy. It may be possible to split the work in one area over more than one day, but more distant areas may have to be completed in one day, due to transport constraints. Remote areas may require an overnight stay. Staying in communication by mobile phone is essential.

Figure 2. Individual team movement plan

	Health Centre_____ Supervisor Name and Phone#_____ Team Number and Phone#_____						
Day #	Route to be taken by team, with start and end points	**OPV required**	**Markers required**	**Vaccine carrier**	**Tally sheets and pens**	**Transport type if required**	**Vaccine pick up point**
		vials	**unit**	**(specify)**		**(specify)**	**(specify)**
Day 1	Town centre: 100 households Start at 08:00 with fi st house on the right of the market and end at the bus station	20	2	1	2	walk	at health centre
Day 2	Village 2: approx. 60 households Take bus from bus station to village, then walk in village and complete **all households** starting at the school and ending at the school	20	2	1	2	local bus and walk	at bus station fi ed post
Day 3							
Day 4							

BEST PRACTICE IN INDIVIDUAL TEAM MOVEMENT PLANS

Each team has an individual plan to show exactly where it must go each day. The health centre assigns teams to each area but, in the assigned area, the team must follow an assigned route, visit all the assigned households and vaccinate all children aged 0 to 59 months in those households. The team movement plan must be based on the local situation; in some communities, households will not open the door until late in the morning while, in others, mothers and children leave the house very early to go to the market. Each team's simple map shows how it must move from household to household with assigned start and end points. Each household should be marked by the visiting team to show the house has been visited and the status of the children within.

OPERATIONAL MAP FOR TEAMS

BEST PRACTICE IN OPERATIONAL MAPPING

(see also the separate section on GIS mapping)

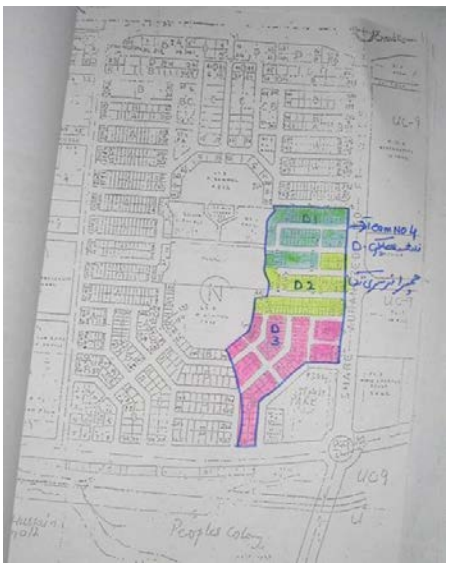
Each team should have its own map to show exactly where the team will work each day according to the team movement plan.

The image on the left shows a large town map on which team areas have been shaded: Day 1, Day2, Day 3.

Hand-drawn maps are also useful when they show:

- streets and landmarks within each settlement and city;
- houses and hamlets lying outside the main roads;
- major landmarks (such as rivers, bridges, health centres, schools, markets, nurseries, train/bus station, police check points, etc.);
- roads and tracks;
- the limits of the team's catchment area (the border of their working area).

The location where each team works can be shown as in the example below.



BEST PRACTICE IN HOUSE-MARKING

House-marking is evidence that a team has visited a house. It informs teams, supervisors, monitors and evaluators about whether a household was visited, all children were immunized or the house needs to be revisited.

The definition of a household should be applied fl xibly: a household can be the smallest family unit or a compound. It can include temporary settlements, boat people or nomads. Each household should be marked. In compounds where several households share the same entrance, each household as well as the main entrance should be marked.

Houses should be marked with a crayon, or any other locally accepted product, but never with ink markers. The mark should be placed on, beside or above the door. If that is not possible, any other immobile object (a rock, tree, fence, etc.) should be chosen. The location of the mark should preferably be protected from rain. Houses can be marked in many ways; the marking has not been standardized in all countries.

Examples of simple basic house-marking

T15 H23 29/6 4/4

Ⓥ Interpretation: Team 15 visited (V) household number 23 on 29 June and immunized all four children. (The tick mark is circled.)

T18 H7429/6 2/3 +1

V Interpretation: Team 18 visited (V) household number 74 on 29 June, two out of three children were vaccinated. but some children were missed and the household needs to be revisited (no circle). When the team revisits, it adds +1 to the house-marking.

Some houses may be locked and empty. Houses should be marked for revisiting only when individuals in the target age group are absent and can be immunized by a revisit during the campaign. A list of houses to be revisited should be made on the back of the tally sheet and each team should submit it to the supervisor at the end of each day.

The marking on the wall indicates that all 10 children in the household were vaccinated on 2 March 2010.

BEST PRACTICE IN FIXED SITE CAMPAIGN IMMUNIZATION

Many years of experience have shown that a successful campaign cannot be conducted with fi ed sites alone. A combination of fi ed site and door-to-door vaccination is sometimes used, often on the fi st day of the campaign, after which the campaign becomes focused on door-to-door visits.

- The fixed sites should be in prominent and convenient places in the shade with enough space for mothers and children to wait.
- The site is fixed, but the personnel are not. Vaccinators, volunteers and social mobilizers should all move around the site to look for children to vaccinate.
- Health centres and hospitals can remain open and function as fixed site posts for the duration of the campaign.
- The exterior of schools, places of worship, bus stations and other locations can be vaccination areas for a certain number of days but should not replace door-to-door visits.
- Banners and posters should draw attention to the site.

Each fi ed site should have at least two vaccinators to immunize children and record doses administered, and two support staff to help manage the fl w of waiting clients and to mobilize mothers and children in the area.

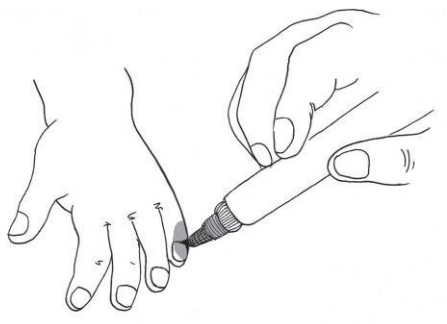
Each child of eligible age is tallied on the tally sheets and gets a finger-mark. There is no need to record addresses or other information.

BEST PRACTICE IN FINGER-MARKING

Finger-marking during SIAs allows teams, supervisors, monitors and evaluators to know whether a child has actually been immunized. Fingers should preferably be marked with indelible ink markers, rather than with gentian violet or other products that usually do not stay visible sufficient y long. Fingers marked the correct way and with quality markers, stored and handled appropriately, will normally remain visible for the duration of the campaign and a few days thereafter. It is important that teams strictly follow the recommended method for finger-marking. A ways cap the finger-mar er pen after use to prevent it from drying out.

Finger-marking process:

- The finger should be marked after administering the OPV and not before.
- Before marking, the team should properly clean the child's nail using a piece of cloth/cotton.
- Only the **child's left little finger** should be marked – NO other place.
- The ink should be applied on **the nail and nail bed**. Marking the nail bed is important because the stain will remain longer.
- The ink should be allowed to dry for 30 seconds.



BEST PRACTICE IN TEAM MANAGEMENT AT TRANSIT POINTS

The locations of common transit points include:

- railway stations
- bus terminals and major road crossings
- highway checkpoints

- tollbooths on highways
- major river bridges
- ferry crossings
- airports
- children's parks
- religious and social community event venues.

Vaccination teams assigned to work at transit points need special training and careful supervision. In many countries, thousands of children move in and out of transit points every day. They would be missed by teams that only visit households. An important factor is engaging the cooperation of the people who are in transit with their children, although they are often in a hurry and may resent the presence of vaccinators. It may be helpful to engage youth groups, to steer parents with children towards the vaccinators. Local authorities and police must approve the vaccination work at transit points.

Planning steps

- Every important transit point should be identified and mapped.
- Trained vaccinators should be deployed at the transit points depending on the size of the area and the movement of traffic and public at various times of the day.
- Transit teams should be deployed for all the SIA days. This may require two shifts to cover traffic moving from early morning to late evening.
- Vaccination teams should be deployed at all exit/entry points in big transit areas with multiple entries and exits.
- A supervisor should be deployed for every 2–3 transit teams.

Microplanning steps

- Visit the transit point to estimate the likely workload.
- Estimate the number of target children passing through the transit point and the number of entry and exit points.
- Take into consideration variations in traffic load in the mornings and evenings.
- Judge the most appropriate location for placing vaccination teams.

Transit team vaccinator training

Transit team vaccinators need dedicated training because their work is different from that of house-to-house teams. Some transit teams are static, working at major crossings to vaccinate children as they pass by. Others are mobile, entering buses or trains and vaccinating children inside them.

Transit team vaccinators need to know:

- the basics about polio eradication and how to handle vaccine and vaccinate;
- how to negotiate entry to crossing points, buses and trains;
- how to approach parents politely in crowded circumstances;
- how to check for vaccinated and unvaccinated children by finger-mark;
- how to convince parents reluctant to accept vaccination;
- the importance of actively seeking children.

Vaccine and the cold chain

- Transit teams should be given enough vaccine vials for the estimated number of children passing through the site. A team may need as many as 1000 doses of OPV (50 x 20-dose vials) for major transit points, such as large railway stations.
- All vials (empty, full or partial) should be returned to the cold store at the end of each day. Every vaccination team and supervisor should have a vaccine carrier to store the daily vaccine requirements.

Information, education and communication/mobilization

- Posters and banners should help indicate and make visible where transit teams are operating.
- Tee shirts, caps and identification badges should be worn so parents can easily identify the team members.
- Radio and television messaging should be developed and shared through appropriate channels to ensure parents are sensitized to transit teams operating in their areas.
- The controlling authority (e.g. railway or bus terminus authorities) should ensure endorsements and announcements at the transit point.
- Religious leaders should make announcements at places of worship.

Supervision

- At least one supervisor should oversee every 2–3 transit teams.
- If transit teams are deployed in shifts, every shift should have separate supervisors.
- Supervisors should move around to check vaccinators' activities carefully.

Working at transit points

- Vaccinators must identify parents and caretakers with target children at transit points and politely ask to check the children's vaccination status.
- If unimmunized children are present, vaccinators should immunize them and mark the finger.
- Vaccinators must obtain consent from parents before vaccinating children. If a child is alone, vaccinators should try to locate the child's parents or caretakers to ask permission to vaccinate the child.
- If parents refuse vaccination, vaccinators should politely try to convince them to accept OPV. If parents refuse, vaccinators should not waste time trying to persuade them.
- Vaccinators should check all children for finger-markings, even when parents claim children have been immunized.
- Every vaccinator deployed must be independent and should carry vaccine, marker pens and tally sheets.

Recording and reporting

The tally sheet should record:

- date, place and timing of activity
- number of children checked for vaccination status
- number of children vaccinated
- number of vaccine vials received, spent and returned.

Figure 3. Transit team management form

Location for transit team	Team number	Names of vaccinators	Name of supervisor and mobile phone number	Hours of work

Figure 4. Form for community engagement activities in high-risk communities

Location of community	Names of vaccinators	Name of person selected for community engagement and mobile phone number	Name of supervisor and mobile phone number	Dates of engagement

BEST PRACTICE IN COMMUNITY ENGAGEMENT IN HIGH-RISK COMMUNITIES

High-risk communities

High-risk communities are defined as a eas with:

- recent circulation
- low performances in previous rounds
- low routine coverage
- low surveillance performance
- settlements of urban poor
- new and informal settlements
- remote rural populations
- minority populations
- highly mobile populations
- nomads.

High-risk communities need careful microplanning to make sure the community is visited by the best possible teams, best supervisors and persons from the local community who can engage and influen e the community.

Certain high-risk communities may be reluctant to accept vaccination and other interventions. In these circumstances, it is necessary to engage the community through a person it knows well and trusts. Such a person may be a religious or other leader who is well informed and able to explain why vaccination is needed and its benefits o the community.

Community engagement

Communities can be engaged through team work involving a visit from a trusted community person, a supervisor and the vaccination team all working together.

1. During local planning

- Identify influential people in the community by visiting it and asking the advice of the community.
- Brief the identified influential people on polio eradication: describe what the health service is trying to achieve with polio eradication, and describe how important it is that every child in the target age group be vaccinated.
- When in the community, identify volunteers who can help to mobilize the community with the influential persons.
- Aim to find local people who are well-known and are welcome in any house in the community.
- Be prepared to pay volunteers and community influen ers for their work. It is better to have a formal engagement with an agreed allowance than to depend on voluntary assistance, especially in poverty areas.

2. During house-to-house campaign visits

- Make sure all eligible children in a household are identified and vaccinated.
- Get a community volunteer to help by entering the house and speaking to mothers.
- If the community is known to be hesitant about vaccination, ask the influential person present to answer questions and convince the community to allow the children to be vaccinated.
- Note any households that refuse immunization on the back of the tally sheet, with some indication of why the refusal occurred. Refusals can be addressed by different people according to the reason for refusal.

SUPERVISION MICROPLAN

(see Annex 3 for examples)

The duties of supervisors include:

- field validation
- immunization supervision and training
- team planning and scheduling
- responsibility for operational maps
- pre- and post-implementation checks
- checklist updates.

DIFFERENCES BETWEEN SUPERVISING AND MONITORING POLIO ERADICATION SIAs

- **Supervisors** support teams during training, preparation and operations. They are mobile, observe the work and take corrective action often on the spot, and report their findings at feedback meetings.
  - Supervisors should not be burdened with long checklists to complete when they are observing intra-campaign house-to-house team operations. They should devote their time to visiting teams and taking corrective action. They may carry vaccine to vaccinate missed children.
- **Monitors** observe operations and take note of the quality of operations, but do not take corrective action. Their reports are compiled, discussed at feedback meetings and used to take corrective action through the supervisors.
  - Monitors have more time to complete checklists and to consolidate and report their findings. They do not usually carry vaccine.

BEST PRACTICE FOR MANAGING SUPERVISORS

Supervisors should understand their roles clearly. They need hands-on training, and the quality of their work is monitored. District and health centre supervisors should monitor team supervisors.

Field validation of the microplan

Supervisors must check the details of the operational microplans in advance.

Table 4. The roles of supervisors

Pre-implementation (see checklist under Annex 3)	District and health centre supervisors	Team supervisors
	• Oversee and follow up microplan development • Use checklists to review SIA readiness and take timely corrective measures • Review and validate supervisory plans and maps	• Ensure all teams have supplies, equipment, maps, plans and transport and take corrective action where needed • Check details on team maps and movement plans and ensure team boundaries are clear • Make sure all team members have been trained and no untrained people on the team are used as substitutes

Table 5. Implementation observation and corrective action

During implementation (see checklist under Annex 3)	District and health centre supervisors	Team supervisors
	• Check and correct manpower deployment, access and supply problems • Monitor the work of team supervisors • Participate in rapid campaign monitoring with external supervisors	• Follow and manage vaccination team activities and take corrective action • Oversee teams travelling house-to-house • Oversee revisits and the vaccination of missed children • Carry vaccine in the vaccine carrier to restock teams
	• Collect and consolidate reports from all levels • Provide daily feedback at evening meetings to solve problems	

Selection of team supervisors

Supervisors should be selected from among people who have some responsibility and respect in the community, such as school teachers and NGO staff, among others. Retaining good supervisors is essential because they make an important contribution.

Training

All supervisors must preferably be trained in small groups by experienced senior staff and partners. They should be trained by the most experienced professionals, which often includes external supervisors. The training course usually lasts two days. It should cover everything in the vaccinator training, plus hands-on field ork training on the second day:

- Before the start of the campaign, supervisors should visit locations where the population is known to be mobile to update their maps with new settlements.
- Maps should show where each team is working so supervisors can visit them and observe their work closely.
- Supervisors should be familiar with the high-risk areas and know the names of the community leaders who can act as influencers.
- Supervisors should solve problems and especially deal politely with refusals, requesting the support of people who can engage with the community.
- Supervisors should use simple checklists and debrief with teams at the end of the day, advising on corrective action.
- Supervisors should attend evening meetings with external supervisors to report their daily findings

Mobility

- Supervisors must be mobile during the day and visit every team assigned to them.
- All supervisors must have a daily plan and map to manage their movements.
- Supervisors should encourage and support teams by making regular visits to the vaccinator teams throughout the day.
- Supervisors may use some form of transport to move from team to team, but must walk with each assigned house-to-house team.

Evening supervisor meetings

- Evening meetings for supervisors should be chaired by the district administrator or a person of equivalent level in the presence of team supervisors and external supervisors.
- The agenda should be action-oriented and focus on corrective action, including strengths and weaknesses, and the action to take the next day. A full account of the day's procedures is not needed.
- External supervisors can take the opportunity to review tally-sheet samples (a tally-sheet audit).

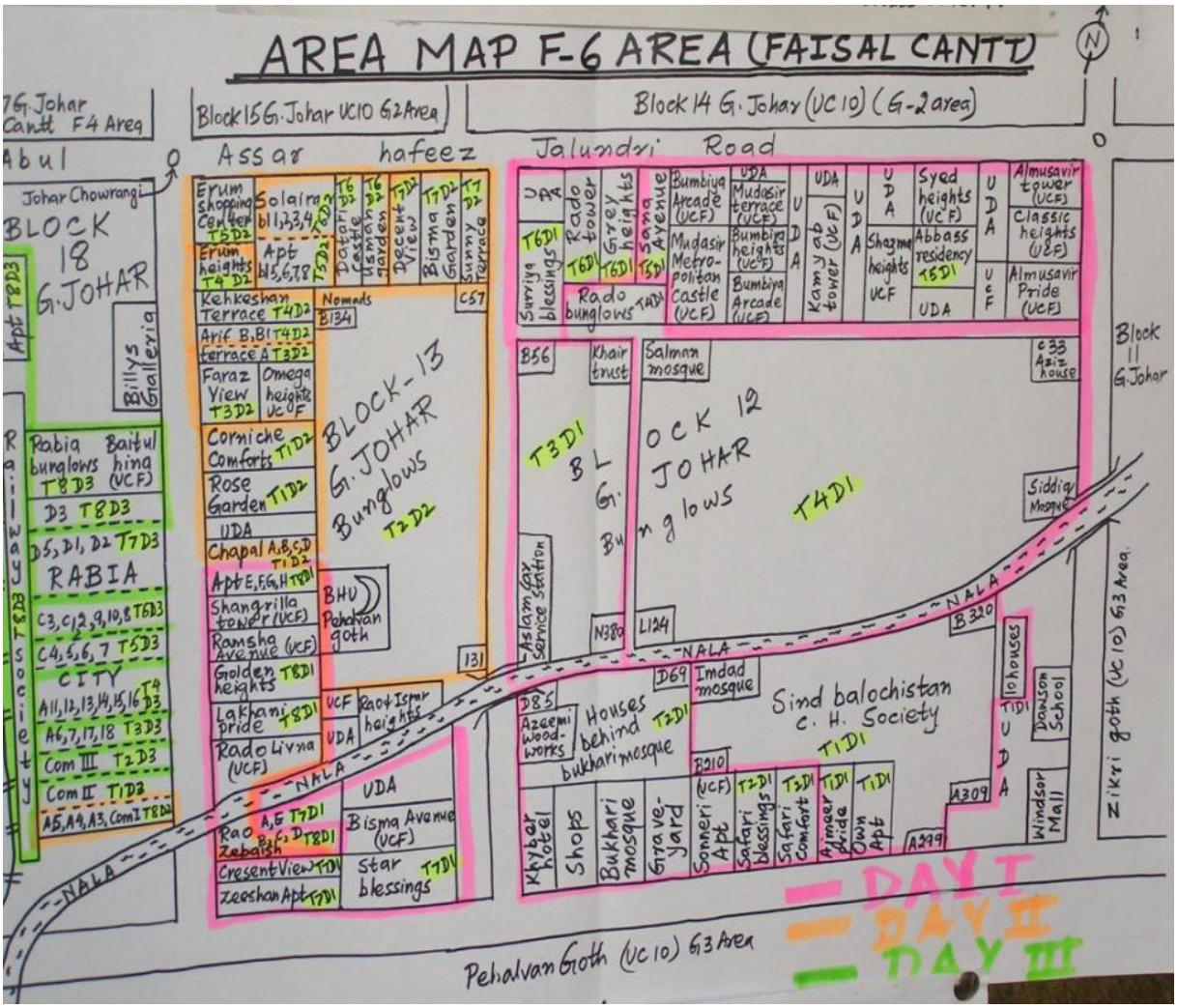
Figure 5. Overall district or health centre supervisory campaign plan

Health centre name	Supervisor 1 (name)	Supervisor 2 (name)	Supervisor 3 (name)	Supervisor 4 (name)
	Team #	Team #	Team #	Team #
Day 1 (date)	Teams 1, 2, 3, 4, 5	Teams 6, 7, 8, 9, 10	Teams 11, 12, 13, 14, 15	Teams 16, 17, 18, 19, 20
Day 2 (date)				
Day 3 (date)				
Day 4 (date)				
Day 5 (date)				

Figure 6. District or health centre daily supervisory plan

Health Centre Name _____ Date _____					
Supervisor name	**Mobile phone number**	**Team number for supervision**	**Location of villages for house-to-house vaccination**	**Location of high-risk areas for rapid campaign monitoring**	**Mode of transport**
A		1, 2, 3, 4, 5	Town South Side	marketplace and bus station	motorbike
B					
C					

SUPERVISORY MAP



EXAMPLE OF BEST PRACTICE IN SUPERVISORY MAP USE

This supervisory map shows the location of each team to be supervised on each day (Day 1, Day 2, Day 3).

Figure 7. Daily schedule of supervisory visits

Health Centre _____ Date _____						
SUPERVISOR NAME AND PHONE NUMBER	TIME LOCATION	TIME LOCATION	TIME LOCATION	TIME LOCATION	TIME LOCATION	18:00 AT HEALTH CENTRE
SUPERVISOR 1	TEAM NUMBER 14	TEAM NUMBER 15	TEAM NUMBER 16	TEAM NUMBER 17	TEAM NUMBER 18	
	09:00 AT BUS STATION	11:00 AT STREET BESIDE MARKET	13:00 STREET 45	15:00 STREET NEXT TO HIGH SCHOOL	17:00 MAIN ROAD	
SUPERVISOR 2	TEAM NUMBER 19	TEAM NUMBER 20	TEAM NUMBER 21	TEAM NUMBER 22	TEAM NUMBER 23	
	08:30 AT VILLAGE A	10:30 AT VILLAGE B	12:30 AT VILLAGE C	14:30 AT VILLAGE D	16:30 AT VILLAGE E	

BEST PRACTICE FOR MANAGING SUPERVISORY WORK

- All supervisors should have detailed plans and daily work schedules that describe precisely where they should be during the day.
- The date, place and time can be specified, which makes it easier to follow up and oversee the supervisors.
- One copy should be given to each supervisor, and one copy should be given to the health centre.
- Every supervisor should have the:
  - overall district or health centre supervisory campaign plan (see Figure 5)
  - district or health centre daily supervisory plan (see Figure 6)
  - supervisory map
  - daily schedule of supervisory visits (see Figure 7).

(See Annex 3 for examples of checklists.)

BEST PRACTICE IN SUPERVISORY CHECKLISTS

- Checklists are most useful to supervisors to check on team preparation when a large number of supply components must be put in place.
- Only a very brief and simple checklist should be used for intra-campaign supervision to allow the supervisor time to observe team operations in detail.

RECORDING AND REPORTING TOOLS

(see Annex 4 for examples)

Simple field-based ools should be used to collect and report data on the microplan's implementation.

- SIA result consolidation
- tally sheet.

RECORDING AND REPORTING THE RESPONSIBILITIES OF VACCINATORS

To record vaccinations, use:

- a tally sheet (see Annex 4)
- finger-marking
- house-marking.

Tally sheets can be used at a post or door to door during the vaccination campaign. They should not be fil ed in after the work has finished

- A tally sheet should be used to record the number of children immunized at a post or house to house.
- For the assigned number of houses, the team should record the numbers of the first and last house.
- Every day, each team should record the details of the houses to be revisited on the back of the tally sheets.
  - Some houses may be revisited on the same day and others on the next day, depending on team availability.
- Each day, the details of the vaccine received and vaccine vials returned (used and unused) should be recorded on the tally sheet.

RECORDING AND REPORTING THE RESPONSIBILITIES OF TEAM SUPERVISORS

Team supervisors must:

- review all tally sheets with teams;
- make a consolidated report;
- attend evening meetings and give feedback on corrective action to be taken;
- go through the tally sheets of their teams at the end of each day:
  - to provide appropriate instructions for vaccinators
  - to compile tally-sheet information and submit a daily report using the reporting form for supervisors;
- compare the ratio of the number of children aged 0–11 months to the number of children aged 12–59 months (the ratio should be 1 : 5);
- correlate the number of vials used with the reported number of doses administered according to the tally sheet;
- sign the tally sheet showing the time of their visit;
- verify the tally sheet looks authentic and has genuinely been used in the field

USING A DAILY REPORTING FORM

- The daily reporting form consolidates the data from the tally sheets.
- The same form can be used at each level.
- At the end of each day and each week, each district should send a consolidated report of children immunized. All reports should be analysed on a daily basis to be in a position to respond to problems and adapt the strategy. Questions to ask include:
  - Are there areas with specific p oblems and how were they corrected?
  - Were all teams and supervisors present?
  - Was vaccine availability ensured everywhere?

SIA RESULT REPORTING FORM

This form can be used at any level:

- at the health centre level to provide the teams' daily results;
- at the district level to provide consolidated results from each health centre;
- at the province level to provide consolidated results from each district.

The form should indicate at which level it is being used.

Figure 8. Form to report SIA results

Team/health centre/ district/ province (indicate which level)	Eligible population	Aged 0–11 months	Aged 12–59 months	Total	% of eligible popula-tion	OPV vials received	OPV vials used

MONITORING MICROPLAN

(see Annex 3 for checklist examples)

Microplan checks occur at three levels:

- pre-campaign monitoring
- intra-campaign monitoring
- post-campaign monitoring.

BEST PRACTICE IN USING CHECKLISTS

Checklists can become a burden on supervisors and monitors. To avoid this encumbrance, they should concentrate on collecting data that can be used immediately and only listing essential components for which action can be taken.

- The **pre-campaign readiness checklist** can be used by supervisors or monitors who visit health centres to ensure all the campaign components are in place.
- The **intra-campaign monitoring checklist** can be used by monitors who compile their observations according to the findings on each team.

Supervisors should use a simpler checklist, giving them time to concentrate on corrective action (see the section on supervision).

POST-CAMPAIGN RAPID CAMPAIGN MONITORING

The purpose of rapid campaign monitoring (RCM) is to find and vaccinate missed children.

- Monitors conduct RCM in selected communities (often those at high risk) during and immediately after the teams have completed their work (the same day, or the next at the latest).
- Monitors should check 10 households door to door for the OPV status of children in the target age group (e.g. aged 0–59 months) in those houses.
- A sample of 10 households is preferable to 10 children because a selection of different houses will be more representative than a selection of many children in one house.
- Any community that fails RCM (two or more children out of 10 missed) should be revisited by a vaccination team.

Method

- Monitors should get a sample that is as representative as possible by choosing as many different areas as feasible in the time available (for example, 4□5 different streets, or 2–3 villages, or several clusters of houses).
- Monitors should go door to door to verify that at least one child in each house received the OPV, visiting approximately 10 households before moving on to the next area.
- Monitors much check each child aged 0–59 months (or another target age group) in each house and record the OPV status.
- Finger-marking is used to confirm OPV tatus.

Checking finger-marking for immunization status

- Vaccinated children should be marked: √
- Unvaccinated children should be marked: X
- If a child has not been vaccinated, the name and location of that child is noted on the form. The mother can be asked why the child is not vaccinated, which is also recorded on the RCM form.
- If a mother says her child was vaccinated, her response should be accepted and noted under the reasons, even if no finger is marked.
- Monitors should inform supervisors by phone if many unvaccinated children are found in one community, in order to organize an immediate mop-up campaign.
- The results should be totalled by age group: 0–11 months and 12Ð59 months.

Vaccinating missed children

- The monitor informs the team supervisor of missed children by mobile phone and provides the detailed monitoring form, which can be presented at feedback meetings.
- The team supervisor puts together a vaccination team to visit to the community.
- The team revisits the community and vaccinates all missed children, including any children not yet identified by the RCM eam.

Figure 9. Simple form for rapid campaign monitoring (RCM)

Province/District _____ **Village/Community** _____
External Supervisor _____ **Team Number** _____

RCM OPV – 0–59 months						
	0–11 months		12–59 months		**If NO,** write name, house and street number	**If NO,** write reason not vaccinated
Vaccinated OPV	**Finger-mark YES √**	**Finger-mark NO X**	**Finger-mark YES √**	**Finger-mark NO X**		
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
TOTAL						

Figure 10. Form to report results of rapid campaign monitoring

Health Centre Name_____ Monitoring Team Name/Number_____ Date_____						
Location of monitoring visit	**Vaccination team # assigned**	**Area selected for monitoring**	**# of households monitored**	**Total # of children checked**	**# of missed children**	**Supervisor notified**
Block 44	12	Omega Heights	10	15	2	Yes, team will return tomorrow
	13	Rose Garden	10	6	0	

BEST PRACTICE IN RAPID CAMPAIGN MONITORING

- Monitoring teams should visit as many different areas as possible, including areas known for low performance and high risk.
- The results should be discussed at the evening meeting.
- The more the information given to the supervisor is detailed, the easier it is to take action.
- Missed children should be identified by name and ocation so the team can return to vaccinate door to door.

CONCLUSION

These best practices in microplanning for polio eradication are based on many years of success and failure in interrupting poliovirus transmission in many diverse situations. The elements described, and the recommended steps and forms, are all aimed at keeping the microplan as simple as possible and relevant to the situation in the field. There is no ideal microplan; there are only examples. In fact, one of the greatest achievements of polio microplanning has been its capacity to remain fl xible and change rapidly, even from one day to the next, when problems arise. For polio eradication, achieving 80–90% of the goal is not an option – the only goal is 100%. Every child must be vaccinated, often through separate doses administered in successive rounds. Children missed results in continued transmission, and a pocket of local transmission, if not halted rapidly, can soon become an international outbreak.

ANNEX 1
MICROPLAN RESOURCE ESTIMATE

Calculation of a population-based estimate for total supply, logistics, human resources, transport and cold-chain equipment requirements at the highest level (usually the national level)

Figure A1.1. National resource and logistics microplan organized by provincial population

1. Name Province/ State	2. Total Population for year	3. OPV target population 13.5% (0 TO 59 MONTHS)	4. # households vaccinated by one team per day	5 # of team days required*	6. # days scheculed for implemen tation	7. # if teams required (2 OPV vaccinatiors per team)	8. # of vaccinators needed (2 per team)	9. # support staff (2 per team)	10. # of team supervisors (1 per 5 teams)	11. Total # of staff required (sum of 8+9+10)	12. # of 20 does OPV vials required = (target population x wastage factor (1.20/20)	13. Daily Transportation Need (1vehicle per supervisor moto, or car)	14. Volume of OPV does required in Litres = (target population x wastage factor x volume of 1 does OPV)/1000	15. Total refrigerator space required in Litres (+2 to +8 C)	16. Est. # of fridge units (20 L per fridge)	17. # of 20 L cold box required (1 per supervisor)	18. # of vaccine required (2 per team)	19. # of ice packs (2 x 4 icepacks for vaccine carrier) plus 20 per cold box	20. Est. # of freezers (1 per 100 ice packs)	21. # of immunizati on fixed posts (1 per 5 teams)	22. # Copies of recording/ reporting forms (team days x 2)	23. # sets of writing materials (exercise books and pens)	24. # finger marker pens (team days x 2)
A	1,000,000	135,000	50	900	5	180	360	360	36	756	8,100	36	243	243	2. 4	36	360	3,600	36	36	1,800	1,800	1,800
B	1,500,000	202,500	50	1,350	5	270	540	540	54	1,134	12,150	54	365	365	3.6	54	540	5,400	54	54	2,700	2,700	2,700
C	2,200,000	297,000	50	1,980	5	396	792	792	79	1,663	17,820	79	535	535	5.3	79	792	7,920	79	79	3,960	3,960	3,960
D	2,000,000	270,000	50	1,800	5	360	720	720	72	1,512	16,200	72	486	486	4.9	72	720	7,200	72	72	3,600	3,600	3,600
E	2,500,000	337,500	50	2,250	5	450	900	900	90	1,890	20,250	90	608	608	6.1	90	900	9,000	90	90	4,500	4,500	4,500
F	3,200,000	432,000	50	2,880	5	576	1152	1152	115	2,419	25,920	115	778	778	7.8	115	1152	11,520	115	115	5,760	5,760	5,760
G	2,200,000	297,000	50	1,980	5	396	792	792	79	1,663	17,820	79	535	535	5.3	79	792	7,920	79	79	3,960	3,960	3,960
H	1,300,000	175,500	50	1,170	5	234	468	468	47	983	10,530	47	316	316	3.2	47	468	4,680	47	47	2,340	2,340	2,340
I	2,300,000	310,500	50	2,070	5	414	828	828	83	1,739	18,630	83	559	559	5.6	83	828	8,280	83	83	4,140	4,140	4,140
J	2,500,000	337,500	50	2,250	5	450	900	900	90	1,890	20,250	90	608	608	6.1	90	900	9,000	90	90	4,500	4,500	4,500
TOTAL	20,700,000	2,794,500				3,729	7452	7452	745	15,649	167,670	745	5030	5030	50.3	745	7452	74,520	745	745	37,260	37,260	37,260

*assuming and average of 3 children aged 0 t0 59 months per household

This spreadsheet is an example of a population-based national resource estimate for a country with a total population of 20 700 000 implementing a nationwide campaign to immunize every child aged 0–59 months (estimated to be 13.5% of the total population) with OPV, regardless of prior immunization status. Each province is listed in this national spreadsheet, and supplies and resources are estimated according to the provincial populations.

BEST PRACTICE FOR ESTIMATING RESOURCES

The microplan must start with an estimate of total resources, made several months in advance so supplies can be ordered and delivered in time.
This spreadsheet is based on standards set by the country for supply, logistics, human resources, transport and cold-chain equipment. It is only an example and does not represent any policy; all fields an be modified a cording to the standards set at the national level. In this spreadsheet, each vaccination team of two people plus two support staff visit 50 households per day and vaccinate every eligible child in those households. This example assumes three children aged 0Ð59 months per household (an average of 150 children per day). The spreadsheet can be used at the province and district levels as shown in the following tables.

Figure A1.2. Province resource and logistics microplan organized by district population

1. Name Province/ State	2. Total Population for year	3. OPV target population 13.5% (0 TO 59 MONTHS)	4. # children to be immunized by one team per day	5 # of team days required*	6. # days scheculed for implemen tation	7. # if teams required (2 OPV vaccinatiors per team)	8. # of vaccinators needed (2 per team)	9. # support staff (2 per team)	10. # of team supervisors (1 per 5 teams)	11. Total # of staff required (sum of 8+9+10)	12. # of 20 does OPV vials required = (target population x wastage factor (1.20/20)	13. Daily Transportation Need (1vehicle per supervisor moto, or car)	14. Volume of OPV does required in Litres = (target population x wastage factor x volume of 1 does OPV)/1000	15. Total refrigerator space required in Litres (+2 to +8 C)	16. Est. # of fridge units (20 L per fridge)	17. # of 20 L cold box required (1 per supervisor)	18. # of vaccine required (2 per team)	19. # of ice packs (2 x 4 icepacks for vaccine carrier) plus 20 per cold box	20. Est. # of freezers (1 per 100 ice packs)	21. # of immunizati on fixed posts (1 per 5 teams)	22. # Copies of recording/ reporting forms (team days x 2)	23. # sets of writing materials (exercise books and pens)	24. # finger marker pens (team days x 2)
A	120,000	16,200	200	81	5	16	32	32	3	68	972	3	29	29	0.3	3	32	324	3	3	162	162	162
B	140,000	18,900	200	95	5	19	38	38	4	79	1,134	4	34	34	0.3	4	38	378	4	4	189	189	189
C	130,000	17,550	200	88	5	18	35	35	4	74	1,053	4	32	32	0.3	4	35	351	4	4	176	176	176
D	156,000	21,060	200	105	5	21	42	42	4	88	1,264	4	38	38	0.4	4	42	421	4	4	211	211	211
E	243,000	32,805	200	164	5	33	66	66	7	138	1,968	7	59	59	0.6	7	66	656	7	7	328	328	328
F	136,000	18,360	200	92	5	18	37	37	4	77	1,102	4	33	33	0.3	4	37	367	4	4	184	184	184
G	114,000	15,390	200	77	5	15	31	31	3	65	923	3	28	28	0.3	3	31	308	3	3	154	154	154
H	100,000	13,500	200	68	5	14	27	27	3	57	810	3	24	24	0.2	3	27	270	3	3	135	135	135
I	160,000	21,600	200	108	5	22	43	43	4	91	1,296	4	39	39	0.4	4	43	432	4	4	216	216	216
J	135,000	18,225	200	91	5	18	36	36	4	77	1,094	4	33	33	0.3	4	36	365	4	4	182	182	182
TOTAL	1,434,000	193,590				194	387	387	39	813	11,615	39	348	348	3.5	39	387	3,872	39	39	1,936	1,936	1,936

Figure A1.3. District resource and logistics microplan organized by health centre population

1. Name Province/ State	2. Total Population for year	3. OPV target population 13.5% (0 TO 59 MONTHS)	4. # children to be immunized by one team per day	5 # of team days required	6. # days scheculed for implemen tation	7. # if teams required (2 OPV vaccinatiors per team)	8. # of vaccinators needed (2 per team)	9. # support staff (2 per team)	10. # of team supervisors (1 per 5 teams)	11. Total # of staff required (sum of 8+9+10)	12. # of 20 does OPV vials required = (target population x wastage factor (1.20/20)	13. Daily Transportation Need (1vehicle per supervisor moto, or car)	14. Volume of OPV does required in Litres = (target population x wastage factor x volume of 1 does OPV)/1000	15. Total refrigerator space required in Litres (+2 to +8 C)	16. Est. # of fridge units (20 L per fridge)	17. # of 20 L cold box required (1 per supervisor)	18. # of vaccine required (2 per team)	19. # of ice packs (2 x 4 icepacks for vaccine carrier) plus 20 per cold box	20. Est. # of freezers (1 per 100 ice packs)	21. # of immunizati on fixed posts (1 per 5 teams)	22. # Copies of recording/ reporting forms (team days x 2)	23. # sets of writing materials (exercise books and pens)	24. # finger marker pens (team days x 2)
A	23,000	3,105	200	16	5	3	6	6	1	13	186	1	6	6	0.3	1	6	62	1	1	31	31	31
B	11,000	1,485	200	7	5	1	3	3	1	7	89	1	3	3	0.1	1	3	44	0	1	15	15	15
C	12,000	1,620	200	8	5	2	3	3	1	7	97	1	3	3	0.1	1	3	46	0	1	16	16	16
D	17,000	2,295	200	11	5	2	5	5	1	10	138	1	4	4	0.2	1	5	57	1	1	23	23	23
E	19,000	2,565	200	13	5	3	5	5	1	11	154	1	5	5	0.2	1	5	51	1	1	26	26	26
F	16,000	2,160	200	11	5	2	4	4	1	10	130	1	4	4	0.2	1	4	55	1	1	22	22	22
G	14,000	1,890	200	9	5	2	4	4	1	9	113	1	3	3	0.2	1	4	50	1	1	19	19	19
H	11,000	1,485	200	7	5	1	3	3	1	7	89	1	3	3	0.1	1	3	44	0	1	15	15	15
I	14,000	1,890	200	9	5	2	4	4	1	9	113	1	3	3	0.2	1	4	50	1	1	19	19	19
J	10,000	1,350	200	7	5	1	3	3	1	6	81	1	2	2	0.1	1	3	42	0	1	14	14	14
TOTAL	147,000	19,845				20	40	40	9	89	1,191	9	36	36	1.8	9	40	500	5	9	198	198	198

EXPLANATION OF THE FIELDS IN THE RESOURCE AND LOGISTICS MICROPLAN

These examples show a resource and logistics plan with 24 fields. Each field must comply with standards initially set at the national level. The advantage of this spreadsheet is that it shows the total resources needed such that, when prepared in advance, it allows organizing total needs in a timely manner and ordering the required resources.

1. Name of the province/state for implementation
2. Total population in the year of implementation
3. Target population (0–59 months = 13.5% of the total population)
4. Number of households to be visited for immunization by one team in one day (= 50 households). The assumption of three children aged 0–59 months per household represents an average of 150 children per day. (This field an be standardized in various ways, for example 100 or 200 children per day.)
5. Number of team days required (the target population is divided by the number of children to be immunized in one day, in this case, 50 households x 3 = 150 children per day)
6. Number of days scheduled to implement the plan (in this example, fi e days)
7. Number of teams required for implementation (the number of team days is divided by the number of days scheduled)
8. Number of vaccinators required (in this example, 2 vaccinators per team)
9. Number of support staff required (in this example, 2 support staff per team to help manage the team's work)
10. Number of team supervisors required (in this example, 1 supervisor per 5 teams)
11. Total number of staff needed (total vaccinators + support staff + supervisors)
12. Number of 20-dose vials of OPV required (target population x wastage multiplication factor for vaccine divided by 20)
13. Daily transportation required; total number of various vehicles needed for supervisor transport (1 per supervisor)
14. Volume of OPV doses expressed in litres (target population x wastage factor x volume of 1 dose in ml divided by 1000)
15. Total refrigerator space at 2Ð8 °C required in litres (same as the volume of OPV doses)
16. Estimated number of 100-litre refrigerator units required (refrigerator space divided by 100)
17. Number of 20-litre cold boxes required (1 per supervisor)
18. Number of vaccine carriers required (2 per team)
19. Number of ice packs required (4 ice packs per vaccine carrier x 2 per team = 8 per team + 20 ice packs for each supervisor cold box)
20. Estimated number of freezers required to freeze ice packs each day (1 freezer per 100 ice packs)
21. Number of immunization fi ed posts required (1 fi ed post per 5 teams) where a fi ed post can immunize and be used to replenish team supplies
22. Number of copies of recording and reporting forms (2 sets of forms per team day)
23. Number of sets of writing materials for teams (exercise books and pens for each team day)
24. Number of finger-marking pens (2 finger-marking pens per eam day)

NOTES ON BEST PRACTICE FOR ESTIMATING RESOURCES

When planning a campaign, it is best to estimate the total resources needed in a timely manner. Time will be needed to gather the resources: vaccine must often be ordered from overseas, vehicles distributed, personnel trained and supervisors assigned. The extent of all these resources needs to be known well in advance at every level. Early planning estimates are also essential because a shortage of resources is more likely at the district level. Accurate resource estimates are calculated from population estimates, but the latter may vary according to the information source. Planning estimates should be made from the bottom-up, using the same framework despite varying population totals. It is always better to slightly overestimate the population to ensure sufficient vaccines and other resources are available.

Figures A1.4. District and health centre estimates of population distribution and human resources

District _____

Health centre	Total population	Target population (#)	Villages (#)	Fixed posts	High-risk areas (#)	Border points if applicable (#)	Transit points #	Teams (#)	Vaccinators (#)	Volunteers (#)	Vehicles (#)	Community mobilizer name and phone #	Supervisor name and phone #
HC 1													
HC 2													
HC 3													
HC 4													
HC 5													
Total													

Health Centre _____

Health centre	Total population	Target population (#)	Fixed posts	High-risk village Y/N	Border village Y/N	Transit points #	Teams #	Vaccinators (#)	Volunteers (#)	Community mobilizer name and phone #	Supervisor name and phone #
Village 1											
Village 2											
Village 3											
Village 4											
Village 5											
Total											

NOTES ON BEST PRACTICE

At the district and health centre levels, when dealing with smaller populations and scarcer resources, big spreadsheets are a starting point but are inadequate to deal with the realities in the field. At this level, it is better to create simple, more detailed resource plans that will enable health centres to share and move resources, and identify those people who will share supervisory duties and will be available to work at the community level.

ANNEX 2
COLD CHAIN AND SUPPLIES

Figure A2.1. Cold-chain equipment availability and deployment
Province-level cold-chain and logistics plan organized by district (working example)

District (Names)	Target Population	Teams (#)	OPV VIALS	Vaccine Carriers			Cold Box			Ice packs	Storage capacity (Lt) in Refrigerator			Number of Freezers Required for Ice Packs		
				Required	Available	Shortfall	Required	Available	Shortfall	Required	Required	Available	Shortfall	Required	Available	Shortfall
1	16 200	16	972	32	25	7	3	2	1	324	29	100	0	3	2	1
2	32 805	33	1968	66	70	0	7	8	0	656	59	100	0	7	5	2
3																
4																
5																
6																
7																
8																
9																
10																
TOTAL																

NOTES ON BEST PRACTICE

Every province should estimate its cold-chain equipment situation early on. During a campaign, the demand for refrigerators, cold boxes to carry vaccine and freezer space is high. All districts should manage their cold-chain resources accordingly and well in advance. This example shows that a district may have a shortfall in cold-chain equipment but can receive assistance through the deployment of equipment from the province level or a neighbouring district. If district centres are not far from each other, pooling freezer capacity for ice packs may be possible at a shared location.

Figure A2.2. Vaccine and supply transport plan (working example)

Name of district	Total population for year	OPV target population 13.5% (0–59 months)	# of 20-dose OPV vials required = (target population x wastage factor (1.2)/20)	# of 20 L cold boxes required (1 per supervisor)	Vaccine transport vehicle	Date of distribution to district	Name of province person responsible for transport and phone number	Name of district person responsible for transport and phone number	Refrigerator/ freezer/cold box/ vaccine carrier shortfall needing transport or relocation	Location of ice pack freezer (in this district or a shared location)
1	120 000	16 200	972	3	Province truck	22 Jan			1 cold box from province to district 1	Located in district 1
2	140 000	18 900	1 134	4						
3	130 000	17 550	1 053	4						
4	156 000	21 060	1 264	4						
5	243 000	32 805	1 968	7						
6	136 000	18 360	1 102	4						
7	114 000	15 390	923	3						
8	100 000	13 500	810	3						
9	160 000	21 600	1 296	4						
10	135 000	18 225	1 094	4						
Total	1 434 000	193 590	11 615	40						

NOTES ON BEST PRACTICE

Vaccine should be distributed from the province to the district no later than one month from the start of the campaign. Equipment can also be transported in advance in case of a shortfall. The province and district should regularly update their lists of equipment according to local transport information and the cold-chain equipment plan.

ANNEX 3
CHECKLISTS

Figure A3.1. Team logistics checklist

DATE	TEAM LOGISTICS CHECKLIST				
District or HC			Province		
Staff & Supplies & Transport needs	**VACCINATION TEAMA**				
	Team #:1	**Team #:2**	**Team #:3**	**Team #:4**	**Team #:5**
Assignment area					
Vaccinator names					
Volunteer names					
Supervisor Names					
Target Pop estimated (#)					
OPV needs (does)					
Finger markers (#)					
House Mark Chalk (#)					
Vaccine carrier (#)					
Cold box (#)					
Ice packs (#)					
Tallysheet (#)					
Summary sheet (daily)					
Supervisory check list #					
Vehicle					
Motorbike					
Other (specify): .....(#)					
Fuel (Lt)					

Supervisory role for team logistics

- Every team must be checked each day at the health centre to make sure they are prepared and all logistics are in place to proceed on their assigned itinerary for the day.
- Supervisors at the health centre can use this checklist at the beginning of the day to ensure all supplies and personnel are available.

Figure A3.2. Supervisory checklist for pre-implementation

At the health centre: check each item for campaign readiness	Comments
Microplan	
All villages are included in the district plan	
All items are included according to the template, with correct calculations	
Any supply shortfall has been identified, with the action neede	
Maps show catchment areas and location of posts/teams/supervisors per day	
Budget has been accurately calculated	
High-risk areas/RCMs	
High-risk areas have been identifie	
Rapid campaign monitoring plan is available with supervisors/monitors/sites/dates	
Supervisors understand RCM methods	
Cold-chain logistics supply	
Adequate vaccine storage space for OPV is available in regional and provincial stores	
Adequate vaccine carriers/ice packs/freezer capacity is available at each level	
Logistics/supply transport plan is available to supply all areas	
Standard operating procedures (SOPs) are in place for replenishment in health centres if stocks run low	
Advocacy	
Local politicians have been informed and are ready to participate/contribute	
Local NGO meetings are held to enlist their support for monitoring and for the transport of supervisors/teams	
Social mobilization	
Each region/province has a local media plan to promote/advertise SIA	
Any other local social mobilization materials are available	
A plan for community volunteer training is available	
A plan for involving community officials and olunteers is available	
A plan for identifying community engagement focal points is available	
Immunization safety	
All supervisors know how to report adverse events following immunization (AEFI)	
AEFI Investigation forms and SOPs are available to supervisors	
Team management	
A plan for team training is available with simple training materials/tally sheets	
A team strategy, with fi ed post in the morning and mobile post in the afternoon, is in place	
Teams are available for mop-up if RCM fails	
A team/post distribution plan is available	
Supervisor management	
The plan shows available supervisors or a shortfall	
A plan for training supervisors, including RCM training, is available	

At the health centre: check each item for campaign readiness	Comments
A supervisor mobility/transport plan is available to follow an assigned area	
Supervisors have checklists	
External supervisors have a system for calling teams to do mop-ups when RCM fails	
Reporting system	
A system for the daily collection and consolidation of tally sheets into reports is available	
A computerized database for the consolidation of reports and their dispatch by email to provincial/regional/national offi es is accessible	
Monitoring system	
Region/provinces have a system for the daily monitoring of results	
The health centre has a system to react daily to a failed RCM by ordering an immediate mop-up	
A system exists at the national level to receive and react to regional reports on at least a weekly basis	

Figure A3.3. Simple supervisory intra-campaign checklist

Simple supervisory intra-campaign checklist	Note team numbers for comments and corrective action
Cold-chain/vaccine supplies	
Marker pens/tally sheets	
Post organization, staffing, working hours	
Recording on tally sheets/missed children	
Team movement plan and map	
Team operating hours	
Finger-marking quality	
House-marking quality	
High-risk communities	
Presence of community leaders and volunteers	
Availability of community engagement persons if needed	

Simple supervisory intra-campaign checklist	Note team numbers for comments and corrective action
Revisiting houses with missed children	
End of day or next day	
Vaccinating children out of the household, in streets and markets	

BEST PRACTICE IN SUPERVISION DURING CAMPAIGNS

The main duty of the supervisor during a campaign is to take corrective action during team operations. This very short checklist is used as a *reminder* of what to look for; it is not a monitoring form that requires analysis. Supervisors should plan to visit each team at least twice during the day. They should observe team operations and take corrective action, which they record on the simple checklist.

Figure A3.4. Intra-campaign monitoring checklist

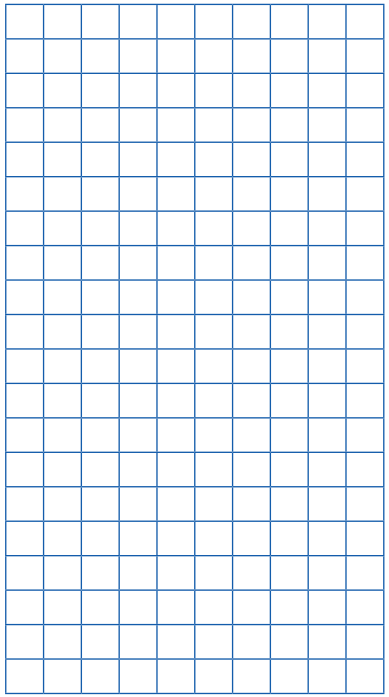
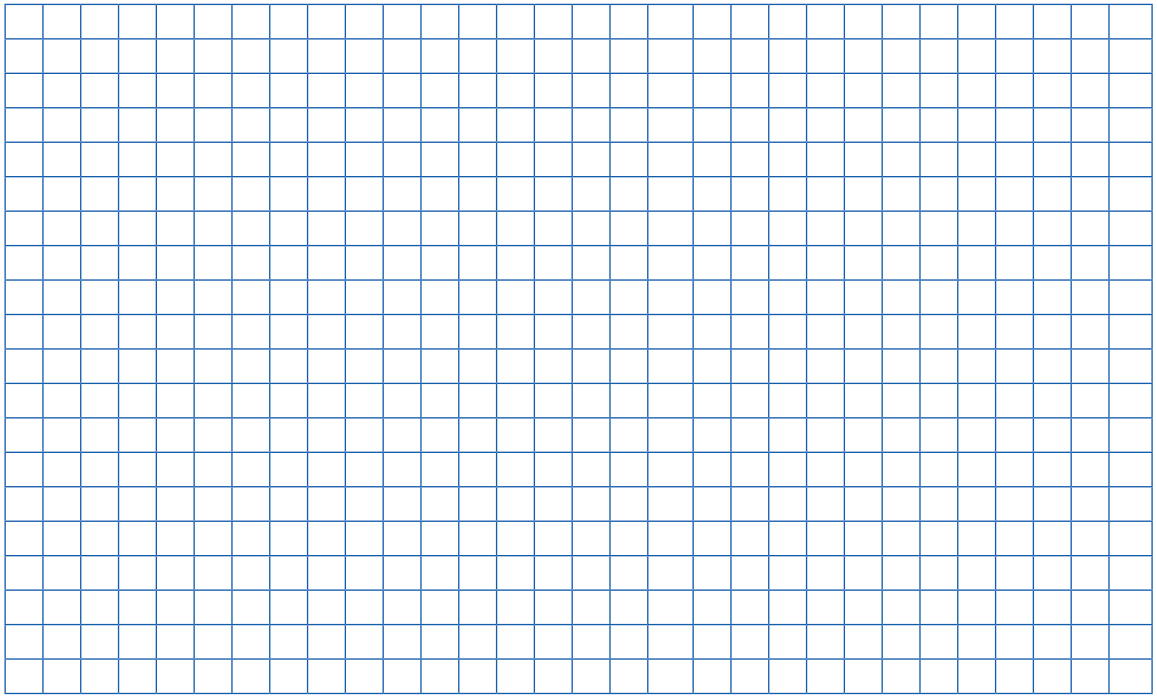
Intra-campaign monitoring checklist question	Yes/No					Comments
	Team 1	Team 2	Team 3	Team 4	Team 5	
Community engagement						
Is the post clearly identified by banne s and posters?						
Are health workers/volunteers actively searching for every eligible child, at house or out of house?						
Cold chain/supplies						
Are vaccines stored in vaccine carriers with two ice packs?						
Are sufficient vials of OPV inside the accine carrier?						
Are there any stock-outs of OPV?						
Are sufficient mar er pens available?						
Are sufficient ally sheets/recording forms available?						
Organization of the post						
Is the post well organized, with good client fl w?						
Are sufficient accinators and volunteers available? Does the post have enough people?						
Recording and reporting practices						
Are tally sheets being used correctly?						
Is every child being finger-mar ed?						
Are missed children listed on the back of the tally sheet for a house revisit?						
House-to-house operation						
Does the team have a plan and map?						
Is the team going house to house according to plan?						
Are houses being marked correctly?						
Are teams asking for all mothers and all children?						
Are teams working morning and afternoon according to plan?						
High-risk communities						
Are teams visiting high-risk communities?						
Are community leaders and volunteers involved in house-to-house operations?						
Are local leaders engaging the community appropriately?						
House revisiting						
Are teams revisiting houses at the end of the day where children were previously absent?						

ANNEX 4
TALLY SHEET

Figure A4.1. Daily tally sheet of vaccinated children for teams

Region _____ **Province/City** _____ **District** _____ **Village/Location** _____ **Date** _____ **Team Number:** ____
Number of households to be visited for OPV_____ **Total vaccinated** _____ **Start house number** ____ **End house number** ____

Instructions: Put a check mark (√) in each box appropriate for the child's age.

NUMBER OF CHILDREN IMMUNIZED WITH OPV	
0–11 months	**12–59 months**
	
Total number _____	**Total number** _____ **Grand total** _____

OPV vials received ..... **OPV vials used** ..... **AFP cases found**.....
A LIST OF HOUSES TO BE REVISITED IS ON THE BACK OF THIS FORM

Signature of supervisor and time of visit

www.polioeradication.org

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