



EPI

POLIO GLOBAL
ERADICATION
INITIATIVE

mOPV2 MANAGEMENT, MONITORING, REMOVAL AND DISPOSAL

Technical Guidance

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Abbreviations

AFP	Acute Flaccid Paralysis
bOPV	bivalent OPV (contains Sabin types 1 and 3)
CCO	Cold Chain Officer
cVDPV	Circulating Vaccine-derived Polio Virus
DVAMS	District Vaccine Accountability Monitoring Supervisor
EOC	Emergency Operations Centre
EOMG	Eradication and Outbreak Management Group
EPI	Expanded Programme on Immunization
GPEI	Global Polio Eradication Initiative
IM	Independent Monitoring
IPV	Inactivated Polio Vaccine
LWG	Logistics Working Group
mOPV2	mOPV2 monovalent OPV (contains Sabin type 2)
NAC	National Authority for Containment of poliovirus
NGO	Non-Governmental Organization
NLWG	National Logistics Working Group
NPCC	National Polio Certification Committee
NRA	National Regulatory Authority
OBRA	Outbreak Response Assessment
OPRTT	Outbreak Preparedness and Response Task Team
OPV	Oral Polio Vaccine
RI	Routine Immunization
RR	Rapid Response
SAGE	Strategic Advisory Group of Experts on Immunization
SIA	Supplementary Immunization Activities
SOPs	Standard Operating Procedures
SR	Surge Response
STOP	Stop Transmission of Polio
tOPV	trivalent OPV (contains Sabin types 1, 2 and 3)
UNICEF	United Nations Children's Fund
VAM	Vaccine Accountability Monitor
VDPV	Vaccine-derived Polio Virus
VVM	Vaccine Vial Monitor
WHO	World Health Organization
WPV	Wild Polio Virus



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Introduction

Introduction

Following the last wild poliovirus type 2 case in northern India in 1999 and the global certification of the eradication of wild poliovirus (WPV) type 2 in 2015, type 2 containing oral polio vaccines were withdrawn from routine immunization programmes worldwide (tOPV-bOPV switch) in April 2016, to prevent the incidence of vaccine-derived polioviruses (VDPVs).

As type 2 mucosal immunity is declining in populations worldwide, there is an increased risk of rapid virus spread. For this reason, any new detection of type 2 polio virus, whether in persons or in the environment, constitutes a public health emergency.

The criteria for type 2 monovalent Oral Polio Vaccine (mOPV2) use following a detection of type 2 polio virus are described in the [GPEI's Standard Operating Procedures \(SOP\) for responding to a poliovirus event and outbreak](#).

When the use of mOPV2 is necessary to protect children from paralysis and stop transmission, it is critical for countries to respond quickly with high-quality campaigns and ensure vaccine management is of the highest standard to minimize the risks associated with reintroduction of Type 2 Sabin vaccine in the environment. Poor mOPV2 vaccine management has a risk of contributing to re-infection of type 2 poliovirus in unprotected children.

Risks associated with mOPV2 management include:

- Sub-optimal mOPV2 vaccine management resulting in lost vials
- Accidental leak of mOPV2 vaccine to routine immunization programmes

There are many similarities between mOPV2 and bOPV in terms of vial size, storage conditions, heat sensitivity and dosage. As type 2 WPV was certified as eradicated, there are several precautionary restrictions in terms of access, storage, withdrawal and disposal of mOPV2.

Specific features of mOPV2 include:

- not registered in countries using the vaccine, but licensed in the country of origin and prequalified by WHO,
- accessible only from a global stockpile controlled by WHO and its release requires a special request mechanism. It is not available for purchasing directly from the manufacturers.
- may have very short shelf life (2-6 months) remaining on arrival to countries
- needs strict stock management practices and accurate storage/transaction records at all supply chain levels
- Impacts the status of post switch inventory of poliovirus type 2 in the implementing countries. This inventory will need to be reconducted as part of GAPIII Phase I on Containment. Thus,
 - Requires containment between the SIA rounds¹.
 - Needs total withdrawal from all health structures at the end of the outbreak response. Management or disposal of remaining usable mOPV2 follows outbreak response assessment (OBRA) or OPRTT recommendations.

¹ Containment here means all mOPV2 vials must be kept in separate equipment or containers and appropriately labelled as "mOPV2 for campaign only" for usable vials and "mOPV2 for destruction" if vials are unusable.

- Requires validation of mOPV2-free status at the end of SIA rounds

It should be noted that mOPV2 is not a hazardous material and should never be referred to as such. It is a safe and effective vaccine that needs special attention to reduce risk of further circulation of type 2 vaccine virus.

Purpose

The purpose of this document is to provide guidance on access, storage, monitoring, withdrawal, destruction and disposal procedures for mOPV2, which differ from the standard bOPV. For cold chain logistics and vaccine management guidance, readers should refer to the [Guidance Note on Cold Chain Logistics and Vaccine Management during SIAs](#) and WHO/UNICEF [Effective Vaccine Management Guidelines](#).

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**Activities
to be held
before
the campaign**

Activities to be held before the campaign

Estimating mOPV2 campaign needs

A four-step vaccination strategy has been endorsed by GPEI for outbreaks and events in high-risk contexts for all poliovirus types. The GPEI's vaccination strategy consisting of a rapid response (RR or Round 0), targeting children in the epicentre of the outbreak zone, two SIA rounds (R1 and R2) targeting a much larger population, and a mop-up round.

Where quality is clearly inadequate in a large geographic area, break-through isolates are identified, or the outbreak continues to spread to unvaccinated areas, additional SIAs should be considered and planned.

Target populations can be based on the administrative population, the number of children vaccinated during previous SIAs, and/or quality micro-planning if time allows. A quality microplan is the best source as it contains current information on populations sizes and includes missed children from previous SIA's. The mOPV2 request form allows for a wastage factor of 1.15 in estimating the mOPV2 supply requirement. The formula for estimating mOPV2 campaign vaccine consumption is thus:

$$\text{mOPV2 supply} = \text{Target population} \times 1.15$$

If the country has an mOPV2 stock balance from the previous outbreak response rounds, the number of usable doses from that balance should be deducted from the estimated need. If population estimates are not reliable, a 10 - 15% buffer stock can be requested for the rapid response round (Round 0). See Annex 3 for a summary of key tasks, responsible persons, as well as associated timelines.

Protocol for release of mOPV2

The use of mOPV2 in response to a high-risk event or outbreak is released *from the global stockpile* under a **strict protocol**.

As per the GPEI SOPs for responding to a poliovirus outbreak or events, Day0 is regarded as the as the day that the sequencing results from the laboratory is received by WHO HQ. For any type 2 outbreak or high-risk event that may require a vaccination response, the country must present a risk assessment and then signed [mOPV2 vaccine request form](#) to the Advisory Group on mOPV2. The mOPV2 Advisory group will rapidly review the risk assessment and recommend a course of action to the WHO Director General. Upon approval by the WHO Director General, the mOPV2 vaccine stock with the shortest shelf-life will be released by UNICEF Supply Division from the global stockpile.

mOPV2 self-producing countries must *follow the same protocol*.

A rapid mOPV2 response round must be initiated within 14 days of outbreak confirmation. Therefore, vaccine arrival and transport procedures should be expedited to distribute all necessary doses at least two days before the round.

The mOPV2 request form is available on the [GPEI website](#)

mOPV2 reception, storage, distribution and transport

Upon arrival, it is advisable to move the vaccines immediately to freezers or walk-in freezer rooms in MoH facilities, where they can be routinely monitored, during the completion of vaccine arrival procedures. If this is not possible and the vaccines should remain in the airport cold stores until all arrival and customs procedures are concluded, access should be given to MoH staff to monitor the vaccines regularly.

Outbreak response managers should ensure that all institutions/persons responsible for checking and accepting vaccines on arrival are aware that this vaccine is not registered in the country and must be accepted as per the WHO pre-qualification or NRA/MoH provided waiver.

Physical inspection and verification of the mOPV2 shipment will be made by the consignee named in the request form and/or its designated authorized representative, using the vaccine arrival report (VAR) accompanying the shipment. If the consignee reasonably determines that all or part of the vaccine consignment does not conform to the requirements set out in the VAR, the consignee MUST immediately notify WHO and UNICEF of the non-conformity. It is important to note that mOPV2 bulk is no longer in production, therefore requesting countries will receive vaccine with the nearest expiry date, which might be considerably shorter than other products shipped for routine (essential) immunization. This should not be a point of non-conformity. This is also applicable for the VVM stage on arrival. Since the vaccine will be shipped for a campaign round to be held in a short time, VVM reading closer to discard point should not initiate rejection procedures.

VAR should be duly filled, signed and sent to the UNICEF Country Office within 24 hours of vaccine arrival. MoH and partner staff must ensure all arrival procedures are carried out, especially inspection, physical count for verification of quantities received and that accurate records are maintained.

Key actions for countries on mOPV2 distribution and management are as follows:

Preparation

- Develop a budgeted logistics plan for the campaign including distribution, transport and reverse logistics activities based on available micro plans.
- Update the cold chain equipment inventory.
- Identify alternative cold storage (for vaccines) and freezing (for ice packs) sites detailing requirements and period of possible engagement. Share emergency contact details and conduct constant follow up.
- Train all campaign staff (vaccinators, team leaders, supervisors, cold chain managers, etc.) on mOPV2 management, recording and reporting requirements.
- Prepare simple written job aids.
- Inform staff that all vials they receive should be returned to higher level facilities either for disposal or storage for further rounds.
- Estimate, budget and procure all packing and transportation material requirements for this return before the campaign.
- Prepare a vaccine vial disposal plan detailing the method and site of inactivation, transport to disposal sites, validating quantities received for disposal, method of disposal, disposal committee members and timelines.

Storage and Stock Management

- Ensure that an adequate logistics management system is in place to manage the mOPV2 stocks. Maintain records of all transactions using standard national recording templates (e-stock management tools, ledgers, issue/receipt vouchers, stock and bin cards, etc.) duly signed by appropriate authorities.
- Separate mOPV2 boxes from other vaccines and clearly mark all boxes using labels, colored scotch tape or marker pens. Repeat this procedure at every step when there is a change in packaging – region, district, or health center - within the cold chain system.
- Ensure dedicated equipment (Freezers/Refrigerators) are provided for storage of mOPV2 at each level clearly labelled “mOPV2 ONLY – for SIAs use.”
- Where neighboring districts/health facilities that are not implementing the response activities are used for temporary storage, all balance of mOPV2 stocks must be removed immediately after completion of the activity.
- Ensure temperature is continuously monitored, analyzed and corrective actions are taken to maintain the appropriate temperature range to preserve the potency of mOPV2 (-25°C to -15°C at national or regional levels and +2°C to +8°C at lower levels).
- Clearly mark all cold chain equipment (refrigerators, cold boxes, vaccine carriers) containing mOPV2 at every level.

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3

**Activities
to be held
during
the campaign**

Activities to be held during the campaign

At the beginning of each campaign day, vaccinators must be provided vaccines placed in small (12cmX15cm), re-sealable or locally available clear plastic bags with an additional stock of empty bags. At the end of the campaign day, vaccinators must return all vials (unopened, fully or partially used) placed in the re-sealable plastic bags, to the same health facility or sub district distribution point where they received the vaccine vials in the morning.

Health facilities/sub district vaccine distribution points must then keep the remaining usable vials under cold chain, to be used for the next day. All unusable vials must be kept in thick plastic cargo bags and returned to the higher level at the end of the campaign for disposal.

To ensure proper mOPV2 management in the country, it is necessary to set up a parallel monitoring system covering both forward and reverse mOPV2 logistics, in addition to the existing vaccine management system. This parallel system should be used by Vaccine Accountability Monitors (VAM) to monitor daily utilization patterns, stock balances and unaccounted vials.

Multi dose Vial Policy (MDVP) during mOPV2 campaigns

The MDVP 2014 revision (<https://apps.who.int/iris/handle/10665/135972>) defines several conditions under which multi-dose vaccine vials can be kept open for extended periods of time during outreach activities and campaigns. It is worth mentioning that the MDVP was revised well before the tOPV/bOPV switch, and the introduction of mOPV2, which is the first vaccine in EPI to be used under containment.

It is not recommended to implement MDVP in mOPV2 campaigns, due to a number of reasons. Firstly, it is difficult to ensure that the mOPV2 vials continue to be kept at the recommended temperatures after opening, because of possibly occurring substandard vaccine carriers used in campaigns and the inability of VVMs to reflect short, high-temperature exposures. Secondly, it is mostly not possible to keep open vials free of contamination in field conditions. Thirdly, mOPV2 use requires 100% accuracy in vaccine accountability records. Since it would not be possible to accurately count the leftover doses in opened vials at the end of the day, implementation of MDVP reduces the precision of accountability reporting.

Evidence from six countries with high mOPV2 use shows that the difference in vaccine wastage rates reported from countries implementing MDVP (DRC, Niger), and countries not implementing MDVP (Nigeria, Somalia, Kenya, Mozambique), is only 1.1 %. Although preventing vaccine wastage is important, maintaining full accountability for a vaccine under containment such as mOPV2 is imperative for GPEI.

Lowest level storage points (district/sub-district/health facility stores)

- Ensure the vaccine vial monitoring form (or stock book) is signed by the team supervisor as the team is receiving the vaccine vials.
- At the end of the campaign day receive and count all open vials (fully or partially used) and unopened vials. Compare the batch number on returned vials with those of vials issued in the morning and ensure a match.
- Update the vaccine vial monitoring form accordingly at the end of each implementation day and ensure that the form is counter-signed by team supervisors.

Team Supervisors

- Issue unopened vaccine vials of accepted quality (not expired, VVM not reached to discard point and labels intact) placed in clear plastic bags to the vaccinators on a daily basis.
- Distribute additional plastic bags to the vaccinators to be used during implementation, and for returning of all vials at the end of the day.
- At end of the day receive, count and check all opened vials (fully or partially used) and unopened vials, update and sign the tally sheet, and ensure it is signed by the vaccinators.
- Return all the vials to the health facility or sub district level distribution point you received them and submit the signed vial monitoring form.

Vaccinator

Receive unopened vials (not expired, VVM not reached to discard point and labels intact) from supervisor, document the number of vials received on the tally sheet and sign. In case additional vials are resupplied during the day, ensure that these are added on the tally sheet.

- Place unopened vaccine vials in sealable plastic bags to protect their labels from moisture and keep them in the vaccine carrier with frozen ice packs to maintain cold chain.
- Once a vial has been opened, place in a separate sealable plastic bag designated for opened vials (fully or partially used) and keep the plastic bag safely inside the vaccine carrier.
- At the end of each day, return all open and unopened vials kept in separate bags to the supervisor or health facility, record the number of vials returned in the tally sheet, and sign the vial monitoring form.

Vaccine Accountability Monitors (VAM)

Vaccine accountability monitors (VAM) are the new members of the vaccination teams during mOPV2 campaigns. One Vaccine Accountability Monitor is recommended for every 2-5 vaccination teams working in the same sub district. Teachers, higher education students or graduates residing in same district are the potential VAM candidates. The VAMs are trained on the accountability process for mOPV2 and the use of the vaccine vial monitoring form during training for mOPV2 campaigns at the district level. Below are the activities expected from VAMs during mOPV2 campaigns:

- The VAM should liaise with the store manager (or local campaign manager) to understand the daily vaccine distribution plan.
- At the beginning of each day, the VAM records details of all vials given to each team (number of vials, batch number of each vial, team number, and the name and phone number of the team supervisor) in the vaccine accountability monitoring forms. Both VAM and store manager keep a separate copy of the vaccine accountability form.
- During the day each VAM visits 2 – 5 of the assigned vaccination teams and fills the supervisory check list (as provided in Annex 2).
- At the end of the day, team supervisors return all used and unused vials to the VAM and store manager.
- The VAM together with the store manager checks and compares all vials returned with the recorded details. If details match, team supervisor signs off for the day and the VAM reconciles the data with the store manager.
- The summary is then returned to the district and presented during the evening review meeting

- The store manager and VAM must also reconcile children immunized with the number of doses/vials used before transmitting data to the district.
- If there are missing vials, vaccinator and the team supervisor MUST search for the missing vials together.
- The VAM must check the sub district level for absence of mOPV2 (or tOPV) vials at the end of the round and report it to the district level (using reporting format in Annex 2). Finding of any mOPV2 vial or any type 2 vials should also be reported immediately to the district supervisor for immediate action, which may include a complete sweep of the district.

District Vaccine Accountability Monitoring Supervisors (DVAMSs)

In order to enhance mOPV2 vaccine accountability, the programme shall engage district vaccine accountability monitoring supervisors. The DVAMSs will coordinate the activities of mOPV2 management at the district level working with the district team especially the district cold chain officer. The DVAMS will be trained on the accountability process including monitoring and supervision of the VAMs within the district, liaising with the district team, daily monitoring and reporting of vaccine balance during implementation and the end of implementation activities. Their role will include the following:

- Cross check the quantity of mOPV2 vials received by the district through a physical inventory
- Participate in the distribution of vaccines to the sub district distribution points, ensuring that the district vaccine accountability forms are completely and correctly filled
- Visit on daily basis select sub district level distribution points to ensure compliance with SOPs for mOPV2 vaccine management
- Visit on daily basis some vaccination teams to ensure compliance with SOPs for mOPV2 management
- At the end of the campaign, ensure that all vials of mOPV2 are returned and accounted for using the mOPV2 district vaccine accountability forms (Annex 2).
- Check all cold chain equipment at the district and selected sub district levels to verify absence of type 2 vials in the system
- Prepare and share a report with the district and provincial teams on the absence of type 2 vaccine in the district (Annex 2).



4

**Activities
to be held
after
the campaign**

Activities to be held after the campaign

mOPV2 withdrawal and destruction

After each campaign round, the central/regional stores should retrieve all mOPV2 vials within 5 days of completion of the rounds. All mOPV2 vials should be counted and quantities reported to the national level within 7 days using the standard Form A (see Annex 2).

The National Logistics Working Group (NLWG) should collate all **Form As** from the lower levels and summarize into the national level Form A. The Global Polio Eradication Initiative (GPEI) Coordinator/Incident Manager (IM) should work closely to ensure this documentation is submitted to the National EPI Manager, Ministry of Health, UNICEF Country office. Form A documentation should be submitted to the UNICEF and WHO Regional Offices /Rapid Response Team and GPEI Outbreak Preparedness and Response Task Team (OPRTT) Secretariat within 14 days after the second response campaign.

Where there are remaining **opened** (partially or fully used), **expired, damaged/unusable (VVM beyond discard point)**, those mOPV2 vials must be taken out of the cold chain and transported to the regional or provincial level. These vials should then be inactivated and securely destroyed (see Annex 1). This process should be reported using the Vial Disposal Report (see Annex 2). Decision to dispose of expired, damaged or VVM compromised mOPV2 vials, should be taken by the country outbreak response team.

Remaining unopened and usable mOPV2 vials should be kept in a designated high-level store with negative (-25°C to -15°C) temperature storage facility until the next response round, OBRA or OPRTT decision. Temperature monitoring and management MUST be maintained at all times during storage of the mOPV2 stock. If a country has a remaining stock balance after all planned SIAs are conducted, the country team should inform and consult the relevant regional offices (WHO & UNICEF) and OPRTT. The country team should have available the stock-balance report with expiry dates and the VVM status. The country team should also be able to report on the reason for the remaining stock-balance.

On the recommendation of the Outbreak Response Assessment (OBRA) or OPRTT and RO, all remaining unopened vials will be inactivated and safely destroyed at the designated national level store as per national regulations for medical waste disposal (see annex 1). A decision to destroy remaining vials will be taken three months following the last reported cVDPV2 case. The OBRA/OPRTT will consider the following in their decision to recommend the destruction of stock balances:

1. Likelihood of the country conducting additional SIAs with mOPV2 within next three months (given nOPV2 roll-out and eventual prioritization) – SIA quality, potential of break-through, ongoing risk (i.e.: shared borders with another OB country)
2. Time since last cVDPV2 (6 months)
3. Risk of containment breach/leak from the cold chain – potential for unintentional or intentional misuse of mOPV2
4. Cold chain capacity to maintain stock-balance (given other vaccine product requirements, including nOPV2, COVAX, etc.)
5. mOPV expiry date within 3 months
6. Temperature management capacity in the store (temperature monitoring practices, power cuts, equipment breakdown, etc.)

The National Certification Committee (NCC) should be informed on the details of final disposal of mOPV2 after completion of the destruction of remaining vials. This information will be reflected in the containment section of the annual report for the certification for Regional Certification Commission for Polio Eradication.

Data verification, monitoring and correction

At each level, a **tracking system** must be put in place (National and State/Provincial Logistics Working Groups, District Cold Chain Officers/EPI focal points, sub-district heads of SIAs teams) to:

- Manage **timely** deployment of mOPV2 **to the outbreak-affected area only**;
- Ensure that all vials of mOPV2 from the central store are properly distributed through the supply chain to the immunization points;
- Ensure that all opened (fully, partially used or broken) vials are returned from immunization teams to health facilities or the district level and subsequently to the regional or provincial/state level;
- Ensure that all opened vials are inactivated and safely disposed at the end of the rounds in compliance with GPEI or national guidelines and national regulations for medical waste management
- Monitor mOPV2 stock at regional and national level pending recommendation from the first OBRA or OPRTT team on further strategic use or destruction
- Produce a final report within 2 weeks after each SIA round using the Form A that details the status of the mOPV2 stock at each level, doses received used, wasted, lost and returned in good condition. This report will be the basis of the OBRA validation.
- Ensure 100% accountability in 100% of storage and distribution points and at the team level. All personnel handling mOPV2 must account for the total number of vials they received at the end of the day or campaign. MoH and Partners must ensure implementation of the accountability framework at each level.

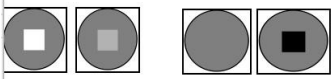
Recording, reporting and monitoring

With the aim to support the national authorities in the vaccine management for mOPV2 campaigns and to get a better oversight of vaccine usage, wastage, losses and balances, countries should use these simple forms and reports provided in Annex 2:

Forms explained bellow can be translated by implementing countries but **should not be modified**.

Tally sheet: the upper part is country specific. However, ensure that the lower part meant for vaccine management reflects the following:

Status of VVM
VVM OK = CAN BE USED - VVM NOT OK = DON'T USE



Vials received				Vials returned at the end of the day		
Beginning of the day	Replenishment 1	Replenishment 2	Total vials received	Usable Vials (1)	Unusable Vials (2)	Total vials returned

(1) Usable Vials : vials that have not been opened, whose VVM has not passed the discard point, whose label is legible and whose expiry date has not passed.
(2) Unusable Vials : empty vials, all opened vials (opened vials must not be reuse the next day), vials with an unreadable label and/or a VVM that has passed the discard point

- The number of vials received is recorded in the morning before the team begins vaccination.
- It must be signed by the vaccinators and the supervisor
- Avoid deletions or overwriting
- The number of vials at the end of the day cannot exceed the total received in the morning plus the replenished
- The number of vials received during the day (2nd reception) must also be noted on the tallysheet on the "replenishment" columns.

Vaccine accountability report: Vaccine accountability for mOPV2 is very important. For the purposes of mOPV2 management, accountability is defined as the responsibility of each member of the team handling mOPV2 to account for all vials of the vaccine received or kept in their custody, and to properly document and return all vials to the next upper level at the end of the campaign. Each VAM is expected to provide a report after the round using the format provided in Annex 2.

Form A (mOPV2 Distribution and Utilization Report): This form is provided for reporting mOPV2 stock levels

to EPI manager, national polio partners, and UNICEF after completion of each SIA round. The form can be used at each level: central, regional/district and the sub district. A copy of this form is provided in Annex 2.

- At the end of all SIA rounds, the subnational stores – at the provincial and district levels – and central store should report to the national EPI manager **within 7 days**.
- The national EPI manager should report to UNICEF country office within a maximum of **2 weeks** following each SIA round using a signed copy of the **consolidated** Form A.

mOPV2 vial disposal report: To ensure proper accountability and disposal of all mOPV2 vials, a vaccine vial disposal report should be prepared and submitted by the disposal committee after the disposal exercise is carried out. The vaccine vial disposal report should contain the **number of vials** received for disposal and the actual quantity of vials disposed. All members of the disposal committee must sign the report signifying compliance with the recommended procedures and the quantities disposed. In Annex 2, suggested mOPV2 Disposal Report is provided for reporting disposal of opened/unopened mOPV2 vials. This report must be completed and signed by the disposal team at the end of the process. The report should be shared with UNICEF RO and HQ immediately by the EPI management.

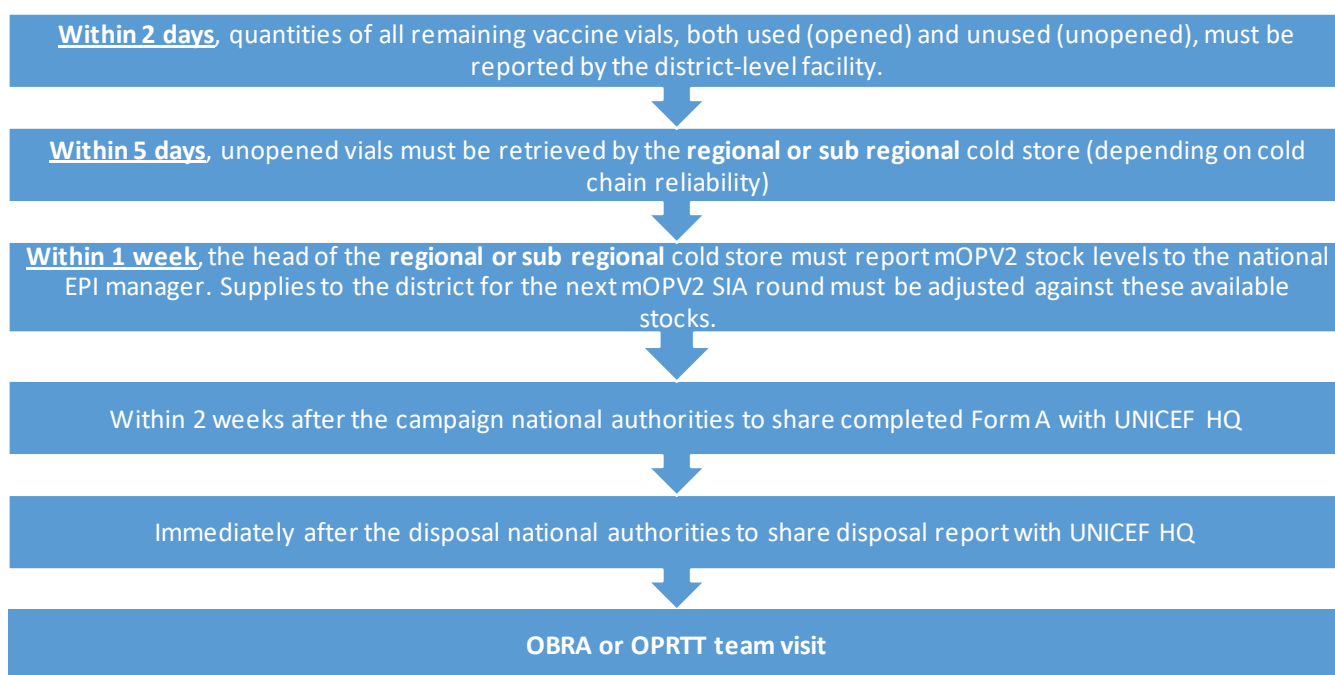


Figure 1: Timelines for collection and reporting of mOPV2 stocks and stock balances following completion of an SIA round

Managing broken vials of mOPV2 (or any type2 containing OPV) post switch

In the course of handling mOPV2 or any OPV2 containing vaccines, there could be breakages. Care should be taken to ensure that the environment is not contaminated with the contents of the vial. All cold chain equipment where vial breakage is noticed should be disinfected immediately with 0.5% chlorine solution (bleach solution – one-part household bleach and nine parts clean water). If there is a spill on the ground of a cold/freezer room, it should be soaked with the same solution to ensure all risk of contamination is eliminated. Vehicles used to transport empty, partially used vials or where leakage of mOPV2 vaccine is suspected should also be disinfected using 0.5% chlorine solution.

Critical points for handling of mOPV2 in response to a type 2 poliovirus outbreak

Managing mOPV2 at the country level

- Complete the **vaccine arrival report** (VAR) and provide to the UNICEF country office within 24 hours of the arrival of the vaccine consignment.
- **Label the vaccine** to be easily identifiable and differentiated from bOPV. Ensure the vaccine is relabeled in case of change of packaging at levels beyond national level. **Store and transport separately** from other vaccines in the cold chain. Do not distribute and use mOPV2 **beyond the areas** selected for outbreak response as per the national response plan.
- At the end of each SIA round, *return* all vials - **open (fully or partially used) as well as unopened** – to the central store. There, promptly *inactivate and safely destroy* all **open (fully or partially used) and unusable vials**. See Annex 1 guidance notes for the inactivation and safe destruction of mOPV2.
- At the end of each SIA round, *return* all **unopened usable vials of mOPV2** clearly labelled to the *central-level cold storage facility*.
- Follow the OBRA² or OPRTT team's advice on destruction or appropriate storage for future use of any remaining vials of mOPV2. If destruction is recommended, **inactivate and safely dispose** of all unopened vaccine vials to bring the country back to zero stock.
- **Provide full documentation of the number of mOPV2 vials used**, returned, lost and final usable stock balance, and disposal reports to aafsar@unicef.org for monitoring purposes.
- **Verify** removal of all mOPV2 vials from vaccination teams, health facilities and lower level stores following the final SIA round and recommendation from an OBRA to destroy remaining unopened mOPV2 vials.
- **The end-of-outbreak OBRA will advise the NAC or other appropriate authorities to endorse mOPV2 removal from the country.**

Monitoring and validation of type 2 OPV withdrawal

To minimize the risk of type 2 OPV remaining in the country after concluding the outbreak, the absence of mOPV2 (and tOPV) must be validated. This does not include validation of type 2 OPV inactivation or destruction, nor does it include the presence of type 2 poliovirus in laboratories or manufacturing facilities.

Many elements of the validation process, such as training, microplanning, selection of staff, and so on, are similar to the monitoring process undertaken during the switch from tOPV to bOPV.

The key steps of the validation strategy are to:

- Activate the National Polio Certification Committee (NPCC) or where not possible nominate a National Authority for Containment of poliovirus (NAC), or any other independent national body, to validate the absence of mOPV2 stocks following the response campaigns;
- develop a national plan with details on where and when to monitor, what to do in case mOPV2 is found, and so on;
- select and train independent monitors;

- conduct site visits at all cold chain stores, including private stores, from the national to the regional and district levels, and selected service delivery points (health facilities and sub district distribution points used for mOPV2 campaigns);
- take corrective action to remove any mOPV2 stocks found in the cold chain and mark these stocks for destruction; and
- obtain validation, from the NAC or the nominated independent national body, of the absence of mOPV2 stocks based on the reports from the monitors.

A special guideline for validation with necessary monitoring tools can be found in <https://bit.ly/2U3XuLp>

² An Outbreak Response Assessment (OBRA) is an assessment done by a multi-agency team 3 month after the date of confirmation of wild polio or circulating vaccine derived poliovirus (cVDPV) in the stools of an AFP case or environmental sample, with the aim of advising the MOH on the course of the outbreak response activities. After the last case of WPV or cVDPV2 the OBRA advises the Regional Office if the outbreak can be considered closed. The OBRA advises the MOH and partners what to do with left over mOPV2 in case of cVDPV2 outbreak.

A decorative graphic in the top-left corner of the page. It features a large, bold white number '5' set against a blue background. The background consists of several overlapping circles and curved shapes in various shades of blue, creating a modern, abstract design.

5

Annex

ANNEXES

Annex 1: Safe destruction and disposal of mOPV2

mOPV2 destruction and disposal guidelines are adapted from the tOPV guidelines used for the global switch from tOPV to bOPV.

Destruction of mOPV2

In the event that mOPV2 is deployed in a country, these guidelines are to be followed for the destruction and subsequent disposal of used and partially used mOPV2 vials between SIA rounds, and for the destruction and subsequent disposal of used, partially used and unopened mOPV2 vials after the final SIA round.

Several options for the inactivation and destruction of residual mOPV2 stocks are described below. Countries should adapt these guidelines according to their medical waste disposal and containment regulations.

Basic principles

- The VDPV2 event or outbreak response plan should include a detailed mOPV2 collection and destruction strategy for the country, both in between the SIA rounds and after the final SIA.
- Destruction of mOPV2 should be in accordance with national regulations. If the national regulations do not provide clear guidance, refer to the approaches for mOPV2 destruction discussed below.
- mOPV2 should be inactivated prior to disposal. The following are the recommended methods for inactivation, destruction and subsequent disposal of mOPV2:
 - Inactivation/destruction by boiling in drums, chemical inactivation, encapsulation or incineration at the provincial level 2 weeks after the round
 - Disposal by transporting to the waste facility or burying.

Steps for inactivation/destruction/disposal

The inactivation/destruction and disposal of mOPV2 can be summarized as follows:

- Step 1: Evaluate the total volume of mOPV2 vials to be destroyed.
- Step 2: Choose an appropriate method to inactivate mOPV2.
- Step 3: Dispose of the inactivated/destroyed mOPV2 vials.

Step 1: Assess the total volume of mOPV2 vials to be destroyed

Use the formula below to estimate volume of mOPV2 vials to be destroyed

$$mOPV2 \text{ volume for destruction (in litres)} = (\text{number of mOPV2 vials} * 15) / 1000$$

Assumptions: mOPV2 will be supplied in 20-dose vials. Based on field experience the following are the volumes occupied by the corresponding number of unboxed vials of mOPV2

- 20 vials occupy approximately 0.3 Liters
- 50 vials occupy approximately 0.7 Liters
- 100 vials occupy approximately 1.5 Liters

Step 2: Choose an appropriate method to inactivate mOPV2

mOPV2 can be inactivated/destroyed by boiling, chemical inactivation, encapsulation or incineration of the mOPV2 waste. Each method of inactivation is described below, with its advantages and disadvantages. The country and context will determine which method is used at each level.

Methods for inactivation/destruction of mOPV2, and their associated advantages and disadvantages:

- **Boiling:** Boiling involves immersing vials in boiling water for approximately 30 minutes, which destroys pathogenic microorganisms. Glass vials can be safely boiled, and do not need to be opened prior to boiling. After boiling, the inactivated vials should be disposed in accordance with national or local waste management guidelines.
- **Chemical inactivation:** Chemical inactivation of mOPV2 involves opening and immersing mOPV2 vials in 0.5% chlorine solution for at least 30 minutes. The solution should be nine parts clear water to one-part household bleach. After this treatment, vials and leftover chlorine solution must both be disposed in accordance with national or local waste management guidelines.
- **Incineration (inactivation and destruction):** Incineration should be carried out at a temperature of ≥ 1100 °C for safe destruction of glass vials containing mOPV2 (for example, using rotary-kiln incinerators and industrial furnaces).
 - It is important to note that the temperatures reached in the primary waste chamber of the incinerator can vary. For instance, low-temperature burning (< 800 °C) using single-chamber cement or brick-covered incinerators is not recommended because this is environmentally hazardous.
 - Additionally, medium-temperature burning (800–1100 °C) using dual-chamber incinerators may cause glass vials to explode or partially melt and is also not recommended.
 - Co-incineration in industrial furnaces (such as cement kilns) will both inactivate and destroy mOPV2 vials and can be done in partnership with an industrial facility.
 - The resulting ash and any other post-incineration residue must be treated as toxic waste and disposed in accordance with national or local waste management guidelines.

Warnings:

- Glass vials may shatter and harm the operator, or they may melt and cause damage to the incinerators.
 - Sealed vials may explode under pressure (during incineration and autoclaving) and endanger the operator.
-
- **Encapsulation (sequestration and destruction):** Encapsulation destroys mOPV2 without immediate inactivation (and without opening the vials) by making it inaccessible and unusable. This method involves filling containers three-quarters full of mOPV2 vials, adding an immobilizing material (such as sand, cement or clay) and sealing and burying the containers. The encapsulated waste must be disposed in accordance with national or local waste management guidelines.

If an off-site facility will be used for inactivation/destruction and disposal of mOPV2, vials should be packed, labeled and transported according to local regulations.

Transporting mOPV2 to an off-site facility for destruction

Transporting mOPV2 vials for offsite destruction and disposal requires a well-prepared contract with a competent transportation company. Waste trucks should use the most direct and safe route for the journey. The transport should be scheduled well in advance to ensure the availability of a responsible person in the destruction facility.

A fundamental requirement for the vehicle transporting mOPV2 vials is to be roadworthy. The payload should be secured to minimize the risk of accidents and spillages. Any vehicle used to transport health-care waste should fulfil several design criteria:

- The body of the vehicle should be of a suitable size appropriate with the design of the vehicle.
- There should be a solid separator between the driver's cabin and the vehicle body.
- There should be a suitable system for securing the load during transport.
- Internal angles should be rounded to eliminate sharp edges to permit more thorough cleaning and prevent damage to waste containers.
- The vehicle should be marked with the name and address of the waste carrier.
- A medical waste sign should be displayed on the containers, as well as an emergency telephone number.
- The driver should be provided with details of the waste being carried.
- Vehicle should be kept locked at all times, except when loading and unloading, and kept properly maintained.

Before sending mOPV2 vials offsite, transport documentation should be prepared and carried by the driver. This documentation should be designed to take into account the control system for waste transportation in operation within a country.

The consignment note for a vehicle carrying mOPV2 vials should include the following information in case of accidents or official inspection:

- source of the waste
- pick-up date
- destination
- driver name
- number of containers or volume
- receipt of load received from responsible person at pick-up areas.

This information allows quick and effective countermeasures to be taken in the event of an accident.

Recording both quantity and the weight of the vials is useful for further disposal reporting.

On completion of the journey, the transporter should complete the consignment note and return a copy to the sender.

Note: After unloading, the vehicle must be disinfected using recommended methods of disinfection or as provided for in national guidelines and regulations.

If it is not possible to destroy the vials immediately on arrival, the destruction facility should provide a safe storage place for the vial packages.

Step 3: Dispose the inactivated mOPV2 vials

After mOPV2 has been inactivated, the waste (following one of the above methods, except for encapsulation) must be disposed using either of the following two recommended approaches:

- transport the waste materials to a waste facility (for example, a sanitary landfill, municipal dump, industrial waste site or another facility meeting national and local waste guidelines); or
- bury the waste materials onsite in a secured and fenced-off burial site.

The following documents can be used for additional information:

Universal standards precaution for health care workers

http://www.who.int/csr/resources/publications/EPR_AM2_E7.pdf

Safe management of wastes from health-care activities

https://apps.who.int/iris/bitstream/handle/10665/85349/9789241548564_eng.pdf?sequence=1

Annex 2: mOPV2 Utilization and Disposal reports

Form A

End of round mOPV2 Distribution and Utilization Report

GPEI SIA Round #: _____; Round starting date ___/___/___; Round ending date ___/___/___

Please tick the type of administrative level (i.e. National, Regional, Province, District, Sub-District) you are reporting from and enter the address

National;
 Regional;
 Province;
 District;
 Sub-District:

Name of the reporting store/facility: _____

Number of children targeted: _____ Number of children immunized: _____

Number of doses used: _____ Wastage Rate: _____

mOPV2 vials received and distributed at this round							
# of vials in stock at the beginning of the round	# of vials received to conduct the SIA round	# of vials distributed from this store	# of Usable Vials (1) received from lower level	# of Unusable Vials (2) received from lower level	# of vials, unaccounted for	Physical inventory balance of Usable Vials (1) vials in stock	# of Usable Vials (1) returned to higher level
A	B	C	D	E	F	G	H

(1) Usable Vials: vials that have not been opened, whose VVM has not passed the discard point, whose label is legible and whose expiry date has not passed.

(2) Unusable Vials: empty vials, all opened vials (opened vials must not be reused the next day), vials with an unreadable label and/or a VVM that has passed the discard point

Title and name of the reporting officer : _____

Signature : _____

Reporting date : _____

Instructions to report on utilization of mOPV2 vials at the end of each SIA round

Vaccine:

- mOPV2 is a vaccine used exclusively to respond to an outbreak of type 2 vaccine-derived poliovirus (VDPV2).
- Type 2 poliovirus is an eradicated pathogen and so it is critical to have very precise counts of mOPV2 vaccine vials at each level of the health infrastructure.
- Once all SIA rounds are completed, all unopened vials must be returned to the national vaccine store and no mOPV2 vial should remain at any level of the health infrastructure.

Stock reporting:

- Form A should be used to report on mOPV2 stock levels from all administrative areas conducting mOPV2 SIAs.
- Vaccine quantities should be recorded as vials rather than doses.
- The vaccine cold chain responsible should fill the form to be reviewed by the immunization programme manager.
- The immunization officer responsible at the facility level should report to the district level within 2 days following completion of each SIA round.
- The immunization officer responsible at the district/regional level should retrieve all mOPV2 vials (opened and unopened) within 5 days following the completion of each SIA round and report to the upper level within 7 days.
- All unopened vials at the end of each round should be physically counted and their VVM status checked.

mOPV2 VIAL DISPOSAL REPORT

Date:

Round number (GPEI Number) :

Region:

District:

Disposal site:

Disposal method	
Inactivation/destruction	Disposal
<input type="checkbox"/> Boiling <input type="checkbox"/> Chemical inactivation <input type="checkbox"/> Incineration <input type="checkbox"/> Encapsulation <input type="checkbox"/> Other (please explain):	<input type="checkbox"/> Burying <input type="checkbox"/> Transfer to medical waste facility <input type="checkbox"/> Others – Furnace, Foundries, etc. (please explain):

Vials received for destruction		
N°	Health Structures	Quantities (Number of Vials)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
Total:		

Total number of vials disposed:	
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Attendees			
N°	Name	Position	Signature
1			
2			
3			
4			
5			

Additional comments:

mOPV2 Supervision Checklist for District Supervisors and Vaccine Accountability Monitors

S/N°	Indicator	Team No.	Team No.	Team No.	Team No.	Team No.
		Y/N	Y/N	Y/N	Y/N	Y/N
1	Does the vaccination team have a vaccine carrier to keep the vaccines in the right condition? <i>(Each vaccinator must have a vaccine carrier)</i>					
2	Are there adequate icepacks inside the vaccine carriers? <i>(Check that there are minimum 2 icepacks)</i>					
3	Is mOPV2 vaccine stored only in the vaccine carriers? <i>(Only mOPV2 and icepacks are kept in the vaccine carrier)</i>					
4	Is there any mOPV2 vial with VVM past the discard point? <i>(Check all the vaccine vials in the vaccine carrier and see if there are any that are in stage 3 or 4 and note. Remove and place in the used vials sealable bag if found.)</i>					
5	Are vaccinators checking the VVM on the vial before vaccinating children? <i>(Observe the vaccinators to see if they check the VVM before administering the vaccine)</i>					
6	Did the vaccination team receive adequate number of vials for the daily target? <i>(Check and compare the number of vials received with the number of vials planned for the day in the daily work plan)</i>					
7	Does the vaccination team have a dropper for each mOPV2 vaccine vial? <i>(Check if the number of droppers and number of vials are the same)</i>					
8	Does the vaccination team have adequate and correct forms for documenting the vaccination activity? <i>(Check to see if the teams have the right vaccinator tally sheets with provision for documenting number of vaccine vials received)</i>					
9	Are the forms being completely and accurately filled for each transaction? <i>(Check to see if number of vials received have been documented and that each child vaccinated is recorded immediately)</i>					
10	Is there adequate sealable bags to keep unused and used and partly used vaccine vials to reduce wastage? <i>(Check to see if all vials are kept in sealable vials - unused and in-use vials in the vaccine carriers and used vials separately kept outside the vaccine carrier)</i>					
Total Yes						
Total No						

VACCINE ACCOUNTABILITY MONITORING REPORTING FORM

Instruction guide:

- 1 This form should be filled by the Vaccine Accountability Monitor (VAM) after each mOPV2 round.
- 2 Vaccine quantities should be recorded as vials only in this report
- 3 The VAM should report to the higher level within 2 days following completion of each SIA round using the portion for VAM. If any mOPV2 or tOPV vial is found inform immediately the district EPI Manager
- 4 District VAM Supervisor should sample at least 30% of the sub district levels to verify absence of mOPV2 or tOPV ⁴ vials and report using the portion for district VAM supervisor.
- 5 Make sure all (opened and unopened) vials of mOPV2 (or tOPV) are returned back to a district vaccine store and ⁵ that no mOPV2 (or tOPV) vial remains at any other level of the health infrastructure in the district

Name and title of reporting Officer: _____	
SIA Round #: _____	Starting Date: _____ Ending Date: _____
Name of Sub District Level: _____	Name of District: _____ Name of Province: _____
No. of Children Immunized: _____	No. of Vials Used: _____

Vials received, distributed and returned at the end of the round

<i>This portion to be filled by VAM</i>				<i>This portion to be filled by District VAM Supervisor</i>			
# of mOPV2 vials received at the district level*	# of vials distributed to the sub district level	# of vials opened or unopened returned to the	# of vials missing	# of sub-district level sites visited for verification of the absence of type 2	# of sites visited where any mOPV2 or tOPV vials were found	# of vials of mOPV2 found	# of tOPV vials found

Remarks:

Signature: _____

Reporting date: _____

Annex 3: Overview of key mOPV2 management activities, roles and responsibilities

Before the campaign:

S/N	Task	Level	Responsible	Timelines
1	Use the standard mOPV2 vaccine request form to prepare request for the vaccine (Estimate vaccine requirements using wastage factor of 1.15)	National	National EPI Manager/NLWG	Within 3 Days of notification as part of the risk analysis
2	Prepare a logistics plan for the campaign which should include trainings, distribution plans, identify alternative storage and freezing sites, transport plans for forward and reverse logistics, waste management, and disposal	National	NCCO/NLWG	Within 3 Days of notification
3	Inform managers on the non-registration of mOPV2 and the need for authorities to provide waiver based on WHO pre-qualification for accepting the vaccine	National	UNICEF/WHO	Within 3 Days of notification
4	Prepare Logistics and VM budget in line with the logistics and VM plan.	National	NCCO/NLWG	Within 7 days of notification
5	Conduct inventory and gap analysis for cold chain equipment and plans to bridge gaps	National/Sub National	NLWG/Lower level LWGs	Before each round
6	On reception, inspect, count and verify vaccine quantities received with shipping documentation	All levels	National & Sub National CCOs/DVAMS/VAM	Within 24 hours
7	Keep mOPV2 in the freezer at all times, preferably at the national vaccine store during customs clearance procedures	National	National CCO/ National EPI Manager	Ongoing

8	Fill and transmit the mOPV2 VAR to UNICEF CO	National	National CCO	Within 24 hours of receipt of vaccines
9	Record transactions in national standard registers (e-stock tools, ledgers, stockcards, etc.)	All levels	National & National CCOs	Within 24 hours of transaction
10	Identify and mark all cold chain equipment to be used for storing or transporting mOPV2 using labels, scotch tape or marker pens	All levels	National & National CCOs	3-days to receipt of deliveries
11	Train all campaign staff on the basics of mOPV2 management and handling including the need for reverse logistics for disposal of opened/destroyed vials or storage of unopened and usable vials	National and sub national levels	National & Sub National SIA focal persons/LWGs	Day 7 to Day 10
12	Develop a distribution plan for the mOPV2 (where indicated plan with available stock balances)	All levels	National & Subnational CCOs	Day 7
13	Purchase sealable bags for all vaccination teams for storage of vaccines and empty/opened/damaged vials	National	National CCO/NLWGs	Within 7 days
14	Prepare daily workplan and vaccine distribution to teams based on micro plans or the last implemented workplan	Lowest distribution level	SIA focal persons/LWGs	One week to campaign
15	Distribute other logistics inputs such as data tools, pen markers, sealable bags, cargo bags...	National	National CCO	5 days before the campaign

During the campaign:

S/N	Task	Level	Responsible	Timelines
1	Distribute daily requirements of vaccines and other logistics inputs based on daily implementation work plans	From District to Sub district level (or the level teams are supplied with vaccine and consumables)	District CCO/Focal person in Charge of SIA/VAM	Daily (a day before the day's activity)
2	Vaccinators receive unopened mOPV2 vaccine vials and record number of vials received on the tally sheet	Team level	Vaccinators	Daily
3	Sign the vial monitoring form after receiving the vials. Make sure number of vials are correct as documented and received.	Team level	Vaccinators	Daily
4	Place vials in sealable plastic bags before putting in vaccine carrier	Team level	Vaccinators	Daily
5	Place used empty, and damaged vials in separate plastic bags	Team level	Vaccinators	Daily
6	Ensure the VVM is in usable stage before administering the vaccine to each child	Team level	Vaccinators	Daily during field activity
7	Conduct spot checks on sub district level distribution points and vaccination teams	Sub district distribution point/Team level	Senior Supervisors /DVAMS/VAMs	Daily
8	Monitor vaccine availability at each level daily during the campaign and respond to stock out as soon as possible	All levels	CCOs /EPI-SIA focal persons at all levels	Daily
9	At end of the day return all opened vials (fully or partially used) and unopened vials to supervisors and update supervisor's vial monitoring form.	Team level	Vaccinators	Daily
10	Ensure the vial monitoring form is signed by the team supervisor	Team level	Team Supervisor	Daily
11	Submit all the vials to the store you received them, and sign the vial monitoring form	Team level	Team Supervisor EPI- FP/VAM/DVAMS	Daily
12	Reconcile returned vials with collected vials at the distribution point level	Sub district distribution point	EPI Focal Point/VAM	Daily
13	Report vaccine status to upper level			

14	Give feedback to lower levels daily on vaccine situation/locations for ease of access	All levels	CCOs /EPI-SIA focal persons at all levels	Daily
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After the campaign:

S/N	Task	Level	Responsible	Timelines
1	Retrieve, count and report all mOPV2 vials to the next higher level	All levels	National, Sub National, District level CCOs and Sub District EPI-FP	1 – 7 days after campaign
2	Maintain all usable mOPV2 in freezers at -25°C to -15°C at all times until further guidance from OBRA or OPRTT is received	Designated higher store level for storage of mOPV2	Store Manager at designated store	Ongoing
3	Remove all opened and partially used vials from the cold chain and prepare along with empty vials for disposal	All levels	National, Sub National, District level CCOs and Sub District EPI-FP	1 – 7 days after campaign
4	At the end of all SIA rounds, subnational stores at the provincial and district levels should use the Form A to report all stock balances, opened/empty, unusable, and unaccounted vials to the National EPI manager	National and Sub National	National and Sub National level CCOs	1 weeks after the campaign
5	The national EPI manager should send the completed and signed reports (Form A) to UNICEF country office within a maximum of 2 weeks after each SIA round.	National	EPI Manager	2 weeks after the campaign
6	Take all expired, damaged and unusable VVM Stage mOPV2 vials out of the cold chain, inactivate and securely destroy them at the central or regional level	National and Sub National	National and Sub National level CCOs	1 – 2 weeks after the campaign
7	On the recommendation of OBRA or OPRTT missions, inactivate all remaining unopened vials and safely destroy them at the national level as per national regulations for medical waste disposal or suggested guidance (see annex 1)	National	National CCO/EPI Manager	2 weeks after recommendation from OBRA or OPRTT

8	Report all disposal of the vials using the disposal report template immediately after disposal. The report must be signed by the disposal committee and shared with the UNICEF RO and HQ.	National and Sub National	EPI Manager	Immediately after disposal
9	Reconvene the NPCC or nominate the National Authority for Containment of poliovirus (NAC), or any other independent national body, to validate the absence of mOPV2 stocks following the response campaigns	National	National EPI Manager/WHO /UNICEF	2 weeks after the last campaign
10	Develop a national plan with details on where and when to monitor, what to do in case mOPV2 is found.	National	NAC/EPI Manager	2 days after convening the NPCC or NAC (Day 0 of containment activity)
11	Conduct the validation exercise to validate absence of mOPV2 or tOPV in the system	NPCC	NAC/NPCC/EPI Manager	One month
12	Obtain validation report from the NAC or the nominated independent national body, of the absence of mOPV2 stocks based on the reports from the monitors	National	EPI Manager	One week after conclusion of the validation activity
13	Share the destruction and verification reports with the National Certification Committee for inclusion in the annual report	National	EPI Manager	One week after the destruction
14	Check for mOPV2 vials during all visits to all sites especially cold chain stores (Check inside fridges/freezers as well as cold boxes and vaccines carriers) to validate mOPV2 retrieval	All levels	All supervisors (Government and Partners)	Ongoing