World Health Organization

National Onchocerciasis Elimination Committees

A handbook for expert advisory groups in Africa

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National onchocerciasis elimination committees: a handbook for expert advisory groups in Africa

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Contents

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The draft document was reviewed for technical accuracy by Philip Downs (Sightsavers, United Kingdom of Great Britain and Northern Ireland), Achille Kabore (FHI 360, United States of America), Yaobi Zhang (Hellen Keller International, United Kingdom of Great Britain and Northern Ireland) and Diallo Nouhou (Ministry of Health and Public Hygiene, Guinea).

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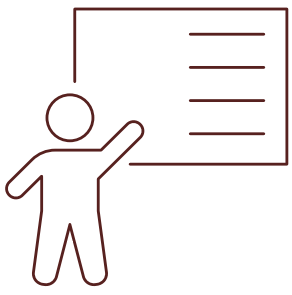
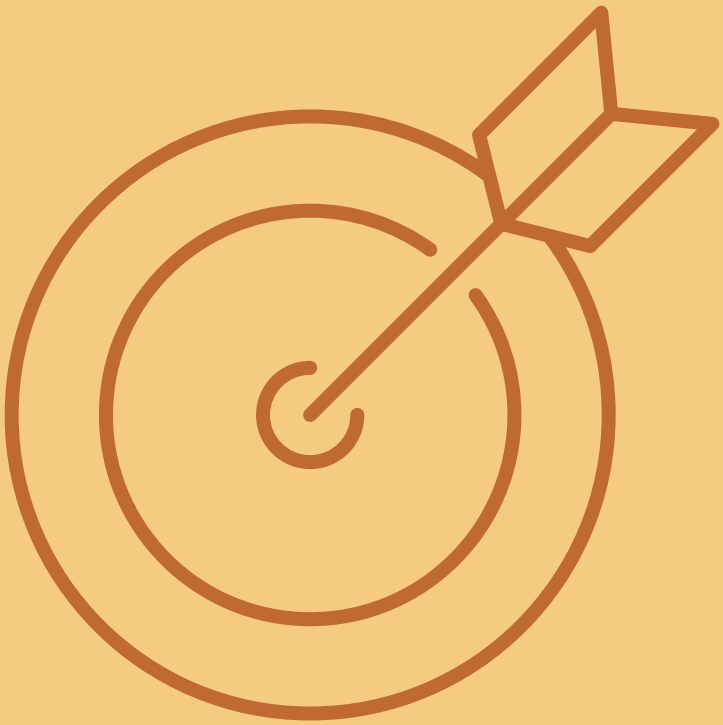


Abbreviations

APOC	African Programme for Onchocerciasis Control
CDD	community drug distributor
GONE	Global Onchocerciasis Network for Elimination
LF	lymphatic filariasis
MDA	mass drug administration
NOEC	National Onchocerciasis Elimination Committee
OCP	Onchocerciasis Control Programme in West Africa
OEM	onchocerciasis elimination mapping
OTS	WHO Onchocerciasis Technical Advisory Subgroup
REMO	rapid epidemiological mapping of onchocerciasis
TaNT	test and not treat
WHO	World Health Organization

[1]
This handbook's purposes



The guidance is informed by successful country case studies and lessons learnt that can be adapted to your country.

What does it contain?

National onchocerciasis elimination committees (NOECs) play a vital role in national neglected tropical disease (NTD) programmes. The purpose of this handbook is to provide practical guidance on:

how to establish an NOEC – defining objectives, setting up a formal committee, selecting committee members, drafting terms of reference and engaging the right people;

how to operate an NOEC – guiding implementation of national strategic plans, establishing monitoring and evaluation (M&E) systems, creating annual work plans, designing contingency plans and reporting on progress; and

how to use the tools available to NOECs – making the best use of tools for onchocerciasis surveillance and monitoring, communication, resource mobilization and capacity-building.

The guidance is informed by successful country case studies and lessons learnt that can be adapted to your country.

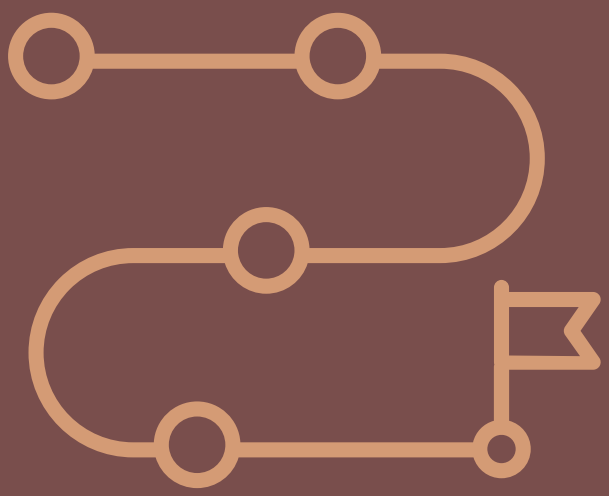
Who is it for?

This handbook is intended for NOEC chairs and members, national programmes, health officials and anyone involved in onchocerciasis elimination efforts.

How was it developed?

This handbook was developed through an extensive global consultative process involving NOECs, national programmes and other key stakeholders. The approach to development is described in Annex 1 and declarations of interest are summarized in Annex 2.

[2]
Establishing an NOEC



National oversight committees, as recommended in the WHO onchocerciasis guidelines (WHO, 2016), are often referred to as national onchocerciasis elimination committees or NOECs.

Defining the role of the NOEC: responsibilities and objectives

National oversight committees, as recommended in the WHO onchocerciasis guidelines (WHO, 2016), are often referred to as national onchocerciasis elimination committees or NOECs.

The term NOEC is broadly used in this handbook, though there are variations among countries in how NOECs are organized and named. For example, because of the co-endemicity with lymphatic filariasis (LF) some countries have opted for integrated LF and onchocerciasis committees, or at least include the LF programme in the NOEC meeting. Sometimes the NOEC is viewed as a sub-committee of a larger national neglected tropical disease (NTD) technical or scientific committee. Other countries have opted for standalone disease-specific committees with their own separate technical expert subgroups. As of 2024, of the 31 countries endemic for onchocerciasis, 25 were known to have formed an NOEC (the status was unknown for Angola, Central African Republic, Equatorial Guinea, Gabon, Liberia and Sudan).

Broadly, WHO encourages NOECs to meet at least annually to provide (Fobi et al., 2015):

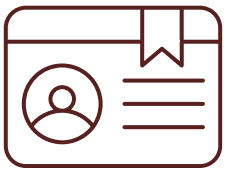
- technical advice on onchocerciasis elimination to the national ministry of health or its equivalent (“health ministry/ies”);
- support to the government and NTD programmes within the health ministries to prepare and update a national guideline and national “road map”/plans for elimination (e.g. national quinquennial plans);
- recommendations on where ivermectin treatment can be safely stopped;
- support to the government in preparing the country’s dossier for verification of interruption of transmission; and
- advocacy on behalf of the national programme for necessary resources.

Legal and institutional framework: setting up a formal committee

A country’s NOEC should be created by a ministerial decree or officially installed by the health ministry. This decree would then be renewed periodically until a country is verified by WHO as having eliminated transmission of onchocerciasis.

It is recommended that the health ministry also provide NOEC members with a mandate to review programme data.

Membership and governance: selecting committee members



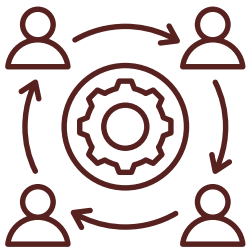
The national onchocerciasis programme team, led by the national programme manager or coordinator, serves as the secretariat of the NOEC. The role of the secretariat is to prepare data and data visualizations for NOEC meetings, or as requested by the Chair of the NOEC.

The Chair of the NOEC is generally appointed by the health ministry and should be someone independent of the government and experienced in onchocerciasis control and elimination. The health ministry should also appoint 10–15 members including national experts and at least one international expert such as:

- Epidemiologist
- Biostatistician
- Medical entomologist (black fly ecology and biology)
- Medical parasitologist (onchocerciasis control and elimination)
- Medical sociologist or social scientist
- Public health specialist
- Laboratory specialist (diagnostics)
- Geographer (specializing in geographical information system (GIS)/ epidemiological mapping/modelling specialist if available
- Water/environmental or hydrology expert, limnologist, if available.

The Chair and national programme manager or coordinator may wish to invite other subject-matter specialists as observers at meetings. These may include:

- Representatives of WHO
- Director of NTDs, health ministry or his/her representative
- Director of the Mectizan Donation Program or its representative
- In-country nongovernmental organization (NGO) implementation partners in onchocerciasis elimination
- Representatives of donors of the onchocerciasis programme
- Focal person(s) in charge of national elimination of LF/*Loa loa* infection
- Research scientists (including operational research) in onchocerciasis elimination
- National coordinator(s) for onchocerciasis elimination or NOEC chairs of bordering countries.



Terms of reference: outlining roles and tasks

The TOR is critical in establishing the roles and responsibilities of the secretariat versus those of the NOEC Chair and its members.

A terms of reference (TOR) should clearly define the committee's roles and responsibilities. The TOR should also cover the frequency of the meetings, disposition of reports, press releases, administrative responsibilities for arranging committee members' travel, per diem and honorarium policies, and financing.

The TOR is critical in establishing the roles and responsibilities of the secretariat versus those of the NOEC Chair and its members. It also serves to maintain institutional memory and reporting channels even when personnel change over time.

The following responsibilities are recommended to be included in a country's NOEC TOR:

Technical responsibilities

a. Interpret onchocerciasis data and provide technical advice to the national onchocerciasis programme, looking focus by focus.

b. Review data to assess where and when transmission may have been suppressed and recommend which localities could conduct pre-Stop ivermectin mass drug administration (MDA) surveys.

c. Assess where and when transmission may have been "suppressed" for recommendation to proceed with pre-Stop surveys or "interrupted" for recommendation on which transmission zones to proceed with Stop ivermectin MDA surveys.

d. Recommend enhanced interventions (twice-per-year treatment, vector control, micro-planning, intensified supervision, coverage/adherence surveys, alternative treatments, etc.) where deemed necessary.

e. Recommend post-treatment surveillance activities during the 3–5-year period following ivermectin treatment cessation.

f. Be familiar with the activities of the national LF elimination programme if it is also using ivermectin MDA and, if possible, coordinate assessments and post-treatment surveillance activities.

g. Assist in prioritizing specimen collection and laboratory analysis so essential data are available for review.

h. Classify parts of the country on the WHO continuum with respect to "active transmission," "suppression of transmission" and "suspected interruption".

i. Support desk review of potential transmission in areas that have never received MDA to determine whether they are non-endemic or in need of OEM.

j. Develop a working definition of a transmission zone relevant to the country's context and datasets (this will help with intervention planning).

k. Support the health ministry to develop and update a national guideline, road map and/or strategic plan for onchocerciasis elimination in the country using WHO guidelines and other relevant research findings.

l. Support the national programme to prepare the country's dossier for verification of interruption of transmission nationwide.

m. (Where co-endemic with Loa loa), assist the health ministry in developing a system for monitoring and reporting serious adverse events, as well as a potential alternative treatment strategy.

n. Take appropriate action within the limit of laws and protocols to help or fast-track elimination

Administrative responsibilities

a. Develop the meeting agenda, identify and invite subject-matter specialists for specific discussions, and send meeting invitations

b. Report findings and recommendations of the NOEC to the appropriate levels of government leadership

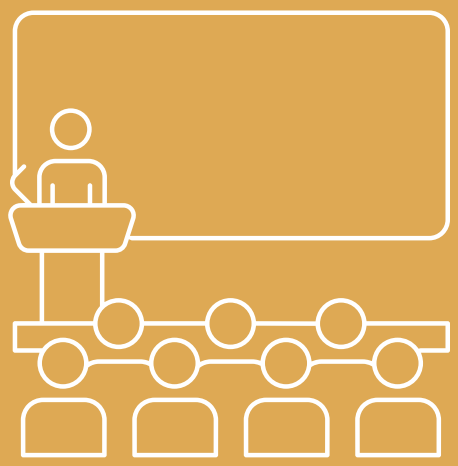
c. Convene ad-hoc meetings if necessary

d. Maintain fluid communication via email between NOEC meetings

e. Define voting rights of members and procedures, terms of service and renewal, and attendance obligations

f. Maintain an updated list of committee members and observers and their contact details

[3]
Operational guidance for effective NOECs



Creating a national strategic plan: key activities to inform development

National strategic plans give the health ministry a blueprint for the elimination of onchocerciasis. NOECs should constantly ask the following questions to assist the national programme in further developing plans and monitoring progress:

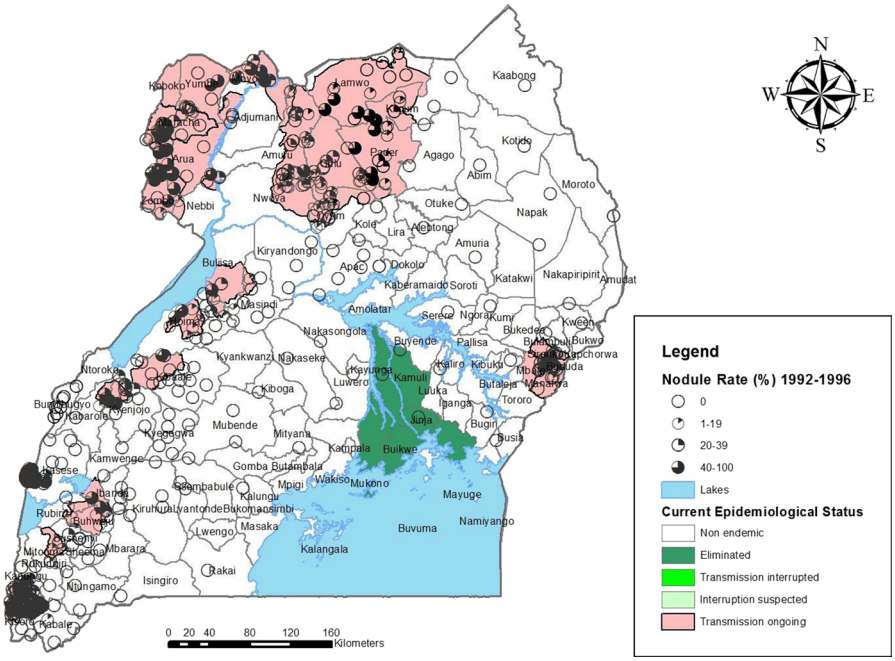
- Where are we now?
- How did we get to where we are now?
- Where do we want to be in the future (e.g. by 2030)?
- How are we going to get there?
- What additional skills or resources do we need to put in place?
- Are there particular challenges to overcome?
- How do we know when we have achieved our strategic objective?

To answer these questions, the NOEC should contribute to the following activities.

1. Collate historical epidemiological and entomological pre-control results to generate baseline data.

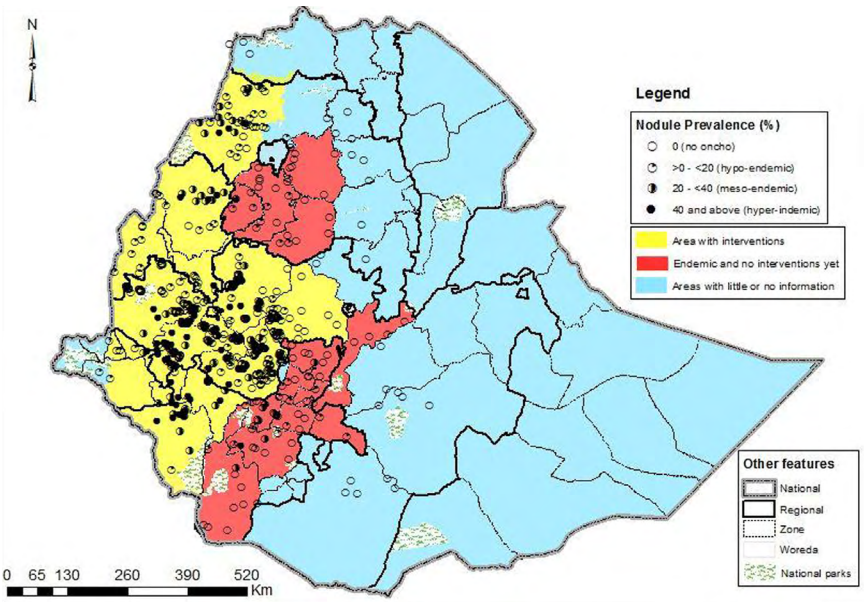
The NOEC should support the national programme to collate data from before control measures were put in place and use them to generate the baseline data/ endemicity map of onchocerciasis for the country. The results can come from pre-control skin-snip prevalence and/or nodule prevalence surveys (i.e. rapid epidemiological mapping of onchocerciasis; REMO) to determine pre-control endemicity, as shown in Fig. 1a for Uganda and Fig. 1b for Ethiopia. Ideally, these data can be stored on a secure online repository so that they are not lost and can be preserved regardless of changes to either the NOEC or national programme.

Fig. 1a. Pre-control onchocerciasis endemicity in Uganda based on REMO result in 1996.



Source: Katabarwa et al. (2018).

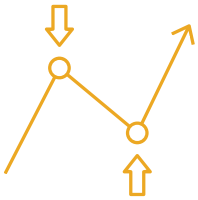
Fig. 1b. Pre-control onchocerciasis endemicity in Ethiopia based on REMO results.



Source: FMOH Ethiopia (2015).

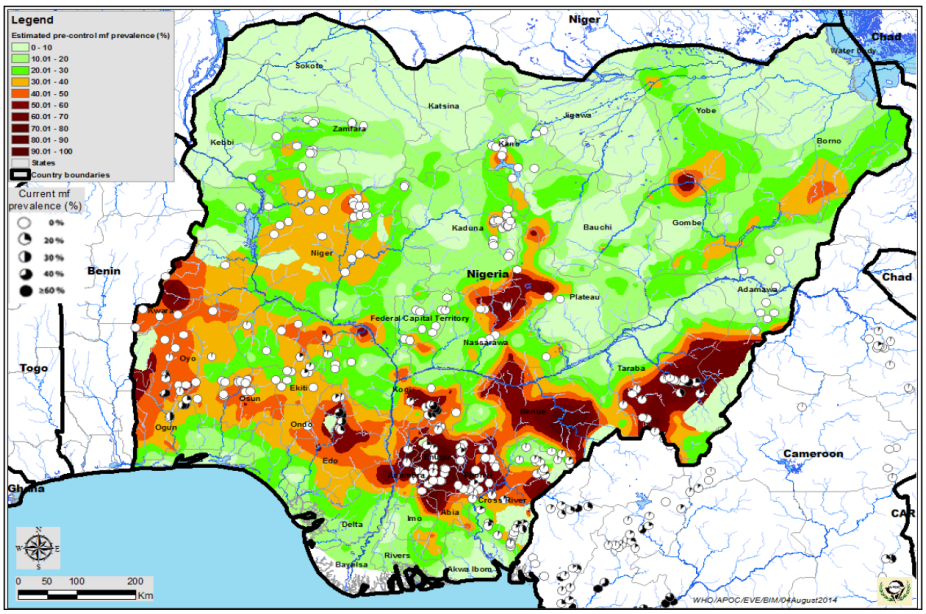
2. Collate available epidemiological and entomological impact evaluation data.

The NOEC should support the national programme to collate any impact evaluation data (including data from the Onchocerciasis Control Programme in West Africa (OCP), the African Programme for Onchocerciasis Control (APOC), the health ministry, research institutions and partners as well as from published articles) and use them to produce pre-elimination maps, as shown in Fig. 2 for Nigeria. These maps should be prepared for different periods of the programme to show progression.



The NOEC should support the national programme to collate any impact evaluation data

Fig. 2. Collated historical onchocerciasis epidemiological evaluation data on the impact of repeated MDA on onchocerciasis prevalence in Nigeria before elimination in 2015.



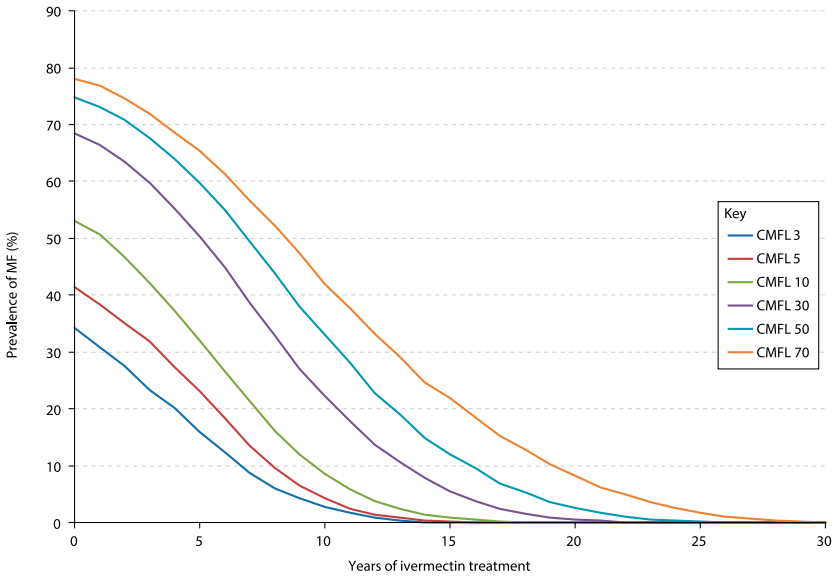
Source: Nwoke et al. (2023).

3. Compare historical epidemiological and entomological evaluation data with predicted trends in prevalence following the start of ivermectin treatment.

The NOEC should compare the historical evaluation data with the predicted trends in prevalence using epidemiological modelling simulations as appropriate (Fig. 3). Hypothetical examples are provided below to show:

- transmission when it is suspected to have been interrupted (Table 1);
- when interruption of transmission is on track (Table 2); and
- when transmission is ongoing in a transmission zone (Table 3).

Fig. 3. Predicted trend in prevalence after ivermectin treatment.



Source: APOC/WHO (2010).

Note: The ONCHOSIM simulation model shown above predicts that annual ivermectin MDA with 70% geographical coverage can significantly reduce onchocerciasis prevalence, though the trajectory depends on epidemiological and operational factors. Achieving elimination often requires exceeding 70% therapeutic coverage (≥ 80% recommended for elimination phases) or increasing treatment frequency in persistent hotspots.

Table 1. Hypothetical example of historical onchocerciasis epidemiological data before elimination and predicted trend in prevalence after 15 years of ivermectin treatment (ONCHOSIM simulation) in a transmission zone where it was concluded that onchocerciasis transmission was suspected to have been interrupted.

Community	Pre-control prevalence		Result of historical epidemiological survey		
	Mf +ve (%)	CMFL (Mf/snip)	Number examined	Mf +ve (%) [95% CI]	Predicted prevalence
A	58	18.2	220	1.8 [1.0–2.6]	1.5
B	47	14.9	190	0.9 [0.3–1.5]	0.7
C	63	22.1	210	2.1[1.2–3.0]	1.8
D	52	16.7	180	1.2 [0.5–1.9]	1.0
E	41	12.3	200	0.5 [0.1–0.9]	0.4

CI: confidence interval; CMFL: community microfilarial load; Mf: microfilariae; +ve: positive.

Table 2. Hypothetical example of historical onchocerciasis epidemiological data before elimination and predicted trend (ONCHOSIM stimulation) in prevalence in a transmission zone, where it was concluded that interruption of onchocerciasis transmission was on track.

Community	Pre-control prevalence		Result of 2014 epidemiological survey		
	Mf +ve (%)	CMFL (Mf/snip)	Number examined	Mf +ve (%) [95% CI]	Predicted prevalence
A	75.2	14.6	143	4.9 [1.9–7.9]	2.7
B	69.4	13.5	183	3.3 [1.0–5.6]	1.3
C	48.9	4.9	101	5.9 [1.8–10.0]	0.3
D	63.3	6.8	103	2.9 [0.3–5.5]	0.7
E	69.1	10.6	123	12.2 [6.3–18.1]	1.2
F	72.9	13.5	153	0.0 [0.0–2.4]	2.0

CI: confidence interval; CMFL: community microfilarial load; Mf: microfilariae.

Table 3. Hypothetical example of historical onchocerciasis epidemiological data before elimination and predicted trend in prevalence after 15 years of ivermectin treatment (ONCHOSIM stimulation) in transmission zones where it was concluded that transmission of onchocerciasis was still ongoing.

Community	Pre-control prevalence of nodules (%)	Pre-control prevalence of nodules (%)	Pre-control prevalence of nodules (%)
		Predicted prevalence	Observed prevalence
A	22.0	1.0	5.0
B	30.0	3.0	8.0
C	50.0	29.0	44.0
D	37.0	11.0	51.0
E	60.0	33.0	34.0
F	40.0	15.0	35.0
G	11.0	0.0	19.0

Mf: microfilariae.

With these results, the status of onchocerciasis transmission can be classified into seven groups:

1. Zones where onchocerciasis is non-endemic.
2. Zones that are ivermectin-naive where the epidemiological status of onchocerciasis is unknown or limited and onchocerciasis elimination mapping (OEM) is needed (WHO, 2024) and integrated with Loa loa mapping in areas co-endemic with loiasis (WHO, 2020).
3. Zones where transmission is ongoing with MDA.
4. Zones where transmission is suppressed.
5. Zones where transmission is suspected to have been interrupted.
6. Zones where interruption of transmission has been achieved, MDA no longer provided and post-treatment surveillance has started.
7. Zones where transmission has been eliminated and post-elimination surveillance has begun.

4. Create a map of delineated transmission zones.

In coordination with the national programme, the NOEC should create a map of the country with colour codes for the seven different transmission zones. Nigeria (Fig. 4a) and Uganda (Fig. 4b) show colour codes in use in country maps.

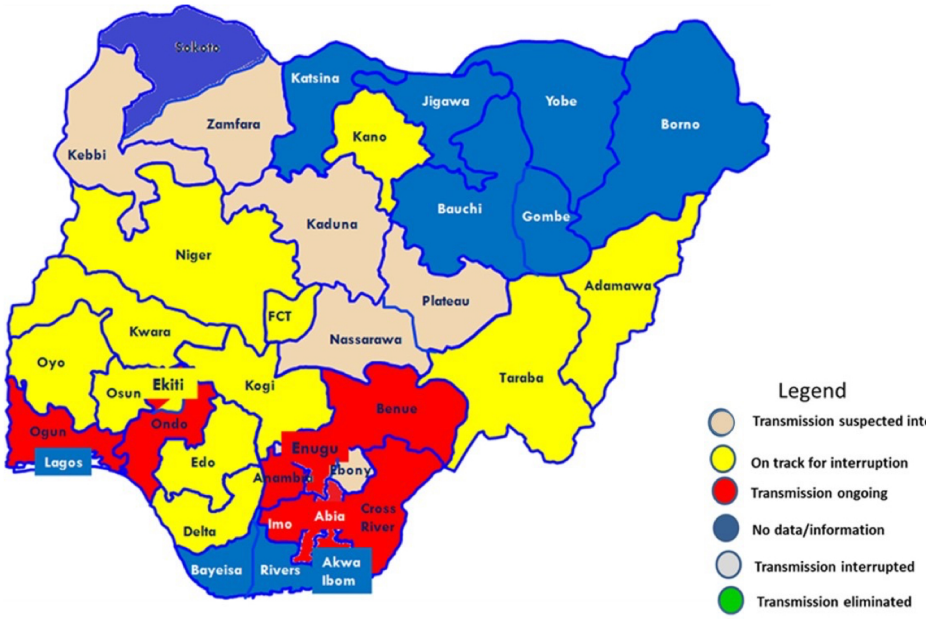
Note: The colour codes may differ from what has been suggested in this handbook. We recognize that it can be difficult to standardize the colour code for all countries; however, ideally a standard code is used to avoid confusion when regional results are discussed and shared. The colour code shown in Table 4 is recommended.

Table 4. Onchocerciasis transmission elimination status by colour code (example from Nigeria NOEC).

Colour code	Colour	Transmission status	Action required
None		Non-endemic	None
Orange		Limited or no epidemiological information or former hypo-endemic area	Conduct OEM and possible reclassification of transmission status
Red		Transmission ongoing	Continue MDA, conduct impact assessment or pre-stop surveys
Yellow		Interruption of transmission on track/suppressed	Continue MDA; conduct pre-stop-MDA; serological and entomological surveys
Purple		Transmission suspected to be interrupted	Continue MDA; conduct stop-MDA survey
Light green		Transmission interrupted	Stop MDA; conduct post-treatment surveillance
Light blue		Transmission eliminated	Stop MDA; conduct post-elimination surveillance

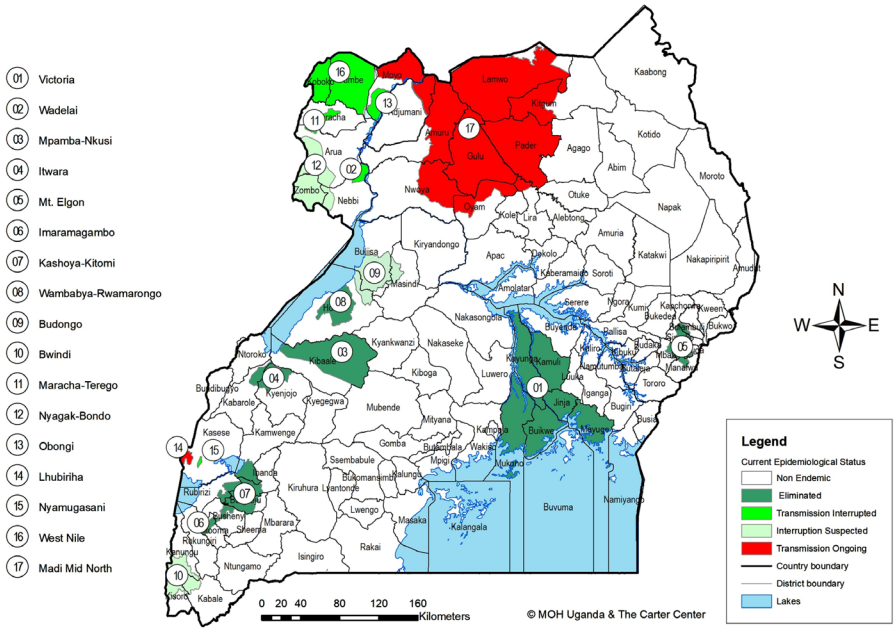
MDA: mass drug administration; OEM: onchocerciasis elimination mapping.

Fig. 4a. Transmission status colour codes by transmission zone based on historical epidemiological and entomological data, Nigeria.



Source: Nwoke et al. (2023).

Fig. 4b. Status of onchocerciasis in Uganda, 2017.



Source: Katabarwa et al. (2018).

5. Identify survey sites for epidemiological and entomological evaluations.

The NOEC provides support to the health ministry when needed to identify survey sites across transmission zones

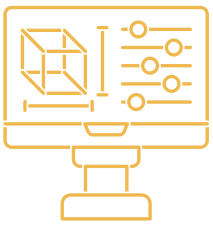
The NOEC provides support to the health ministry when needed to identify survey sites across transmission zones, taking into consideration high-risk or first- and second-line villages around black fly breeding sites on all rivers and tributaries.

Selection of these sites requires a solid understanding of the ecology and behaviour of the vector, the epidemiology of the disease and the geography of the area concerned. Site selection should be guided by the fact that the flight range of onchocerciasis vectors, when seeking a blood-meal, is unlikely to exceed 15 km under normal circumstances. This means that communities severely affected by onchocerciasis are almost always located within a 15 km radius of a vector-breeding site (Ngoumou & Walsh, 1993).

Selection of epidemiological sites should involve:

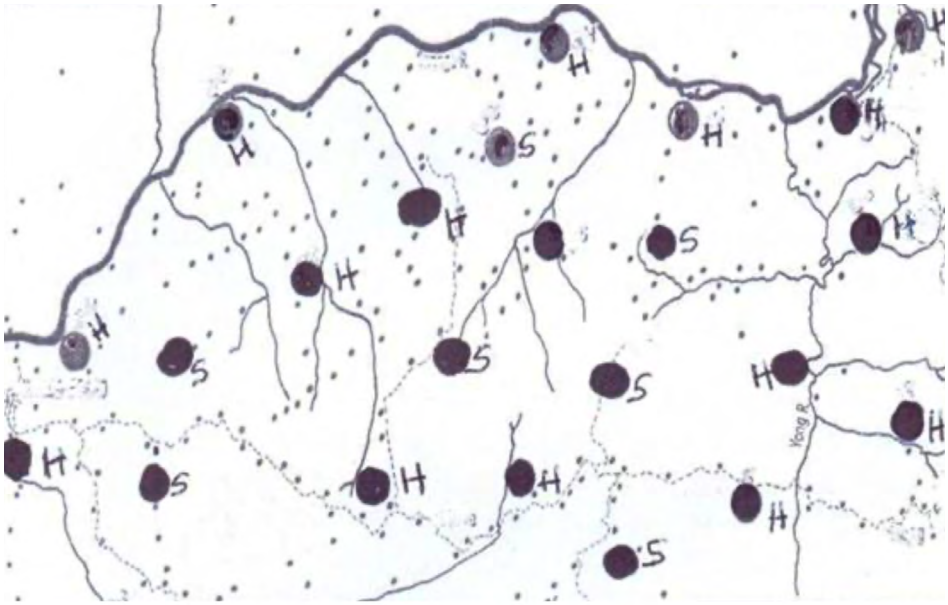
- Use of topographical maps of the scale of 1:250 000. In the absence of this scale, any other map with appropriate topographical features as well as digitized Apps can be used.
- Exclusion of empty and unsuitable zones (i.e. areas likely to be onchocerciasis-free because they are without a significant human population, or environmentally/ecologically not suitable). Described in the WHO OEM handbook as a desk review of existing data and exclusion mapping (WHO, 2024).
- Distinction between first-line and second-line villages for surveys (Fig. 5)
    - » **First-line or high-risk villages:** High-risk villages are those situated in the likely worst-affected areas, located close to riverbanks and especially close to high gradient river sections marked on the maps. High-risk villages are also called “first-line” villages; that is, villages located within 5–10 km of the breeding sites, and ideally with no other villages between them and the breeding sites/rivers. On both the main river and tributaries, high-risk villages are selected every 30–50 km to ensure that all the possible endemic areas are represented.
    - » **Second-line villages:** Secondary or second-line villages help us obtain some indication of the distribution and overall severity of the disease. For each high-risk or first-line village, a secondary or second-line village should be chosen in about a 15-km radius of the high-risk villages and within 15-km of the known breeding site.

The assessment of both the first- and second-line villages is carried out at the same time.



Post-treatment surveillance is conducted after stopping intervention and lasts for 3–5 years.

Fig. 5. Typical example of selection of first-line/high-risk (H) and second-line (S) villages on the main river and tributaries for epidemiological evaluation.



Source: A second-line village on a main river system may sometimes end up being the first or high-risk village or site on the tributaries.

Source: Adapted from Richards et al. (2001).

5. Propose post-treatment surveillance activities.

Post-treatment surveillance is conducted after stopping intervention and lasts for 3–5 years. Activities during this phase of elimination are critical; they guarantee that onchocerciasis transmission has been interrupted and the community is no longer at risk of infection.

In transmission zones where MDA has stopped for both onchocerciasis and LF, the NOEC should ask the national programme the following questions and help identify where gaps need to be filled:

- Location and work of primary health centres, villages and community drug distributors (CDDs) on both sides of administrative and international borders.
    - » Has the programme identified all primary health centres and villages where CDDs are active? Private clinics and faith-based organizations should be included where primary health centres are absent.
    - » Have health facility staff, community health workers and CDDs been trained in cross-border activities, including passive/active surveillance?
    - » Has a cross-border meeting with health facility staff, community health workers and CDDs been held?
    - » Are joint supervision, community mobilization and sensitization being planned and conducted at least twice a year?
    - » Has ivermectin been provided to the identified primary health centres, faith-based organizations and other points of care for clinic-based treatment and targeted treatment of individuals as needed?

- Treatment outcomes of immigrants/migrants in border villages
  - » Have all immigrants/migrants been identified and registered using a standard registration template?
  - » Are identified immigrants/migrants from areas endemic for onchocerciasis and LF being offered treatment using the monitoring and treatment forms?
  - » Individuals coming from endemic settings with current active transmission can be offered diagnosis for *Onchocerca volvulus* and, with their consent, tested and treated for both diseases.
  - » Are the border areas being closely monitored to continue to catch and analyse black flies and request medicines for annual clinic-based treatment?
- Provision of health education
  - » Are health promotion and community health workers informed and actively engaged in prevention and surveillance activities?
  - » Have air radio jingles been broadcast throughout the period of post-treatment surveillance?
  - » Where are posters and other communication materials being distributed?
    - Are community and school health education sessions being carried out?
    - Are social media platforms being used?
    - Are messages to communities being shared explaining why medication has stopped and how the parasite has disappeared or been eliminated?
- Status of ongoing entomological studies
  - » Are breeding sites being prospected (as well as first- and second-line villages) for *Simulium* vector flies including in sites across the border of the transmission zone(s)? This should be done before entomological surveys are conducted to monitor, stop MDA or implement surveillance.
  - » Are immature stages of black flies found in prospection activities being identified to distinguish between vector and non-vector species and are these activities part of entomological training?
  - » How is fly catching being supported at new breeding sites (human landing catches and/or fly traps) and how are community volunteers and health workers being trained? Note that fly catching will start at least 24 months after stopping administration of ivermectin and continue for 12 calendar months.
  - » Are the adult female black flies caught in fly traps identified to distinguish between vector and non-vector species, and is this activity part of entomological training?
  - » Where are the black fly catching points located along the river watersheds in relation to communities where serological sampling is conducted, and are these sites frequented by community members that may lead to exposure?

While post-treatment surveillance must be suspended until LF is eliminated in areas co-endemic for onchocerciasis, certain activities can move forward

7. Propose activities where MDA is ready to stop for onchocerciasis but is ongoing for LF.

While post-treatment surveillance must be suspended until LF is eliminated in areas co-endemic for onchocerciasis, certain activities can move forward. In addition to suggested activities 1–6, additional activities the NOEC can suggest to the national programme include:

- Upon stopping MDA for LF surveillance activities for *O. volvulus* can commence.
- Intensify vector control strategies to fast-track the elimination of LF where onchocerciasis treatment is ready to stop. This will be tailored according to the relevant mosquito biology in the area (biting indoors/outdoors; resting indoors/outdoors; zoophilic/anthropophilic, etc.). Introduce vector control for O. volvulus when feasible.
- Conduct integrated assessments through LF epidemiological monitoring surveys or transmission assessment surveys, as described in the eighth report of the OTS (WHO, 2025a]).

8. Propose activities where onchocerciasis is co-endemic with loiasis.

Reports from some African countries where onchocerciasis is co-endemic with *Loa loa* indicate that serious adverse event may occur in patients who have ingested ivermectin for treatment of onchocerciasis and who have a high intensity of *Loa loa* microfilarial infection (Chippaux et al., 1996; Gardon et al., 1997). The *L. loa* co-endemicity may become an important issue when it occurs in areas bordering transmission zones. Populations may migrate from a loiasis co-endemic area to a non-co-endemic area, which will complicate the MDA in the neighbouring non-co-endemic areas. The NOEC can work with the national programme to coordinate as needed and ensure that:

- administrative units exchange information on disease endemicity;
- migrating populations in onchocerciasis-endemic and/or *L. loa* endemic areas are identified and registered; and
- test and not treat (TaNT) be conducted for people migrating from *L. loa* endemic areas (COR-NTD, 2024).

9. Amass evidence for the determination of "non-endemic" areas.

Review all available sources of existing entomological and epidemiological data, case reports, geostatistical modelling results, hydrological maps and local knowledge of black fly activity to identify environmentally suitable areas for the presence of black flies. Assist the health ministry to compile the data and rule out areas as needing OEM (for details on conducting a desk review and exclusion mapping, see the WHO OEM handbook (WHO, 2024).

NOEC meetings: process for progress review

NOECs need to be able to quickly help identify and address programmatic challenges. This process is centred around meetings; Annex 3 provides a suggested basic agenda for these.

Here are some additional tips to make the process smooth:

1. The health ministry, with implementation partners, should prepare an executive summary detailing progress and challenges since the last meeting and share it with the members of the NOEC at least 2–4 weeks before the NOEC meeting.
2. NOECs should help set programmatic targets in each of the transmission zones as defined in Table 5. At each NOEC meeting, the health ministry representative/national programme manager should present an update of the results of elimination activities in these zones.
    - If the programme targets ***have*** been achieved, the NOEC should conclude that elimination of onchocerciasis in the zone is on track. Where applicable, a new set of targets and activities should be developed for that transmission zone and reported on at the next meeting.
    - If the programme targets ***have not*** been achieved, the NOEC should identify the challenging factors and ways to address them (including field investigations and operational research). A new set of targets and activities should be developed for each transmission zone and reported on at the next meeting.
3. The NOEC should identify members and/or other representatives to follow up on agreed activities – they should then make a presentation on their activity at the next NOEC meeting.
4. The NOEC should encourage the health ministry to share any updates on the LF elimination programme so that activities can be coordinated.
5. To continually review progress, the NOEC should consider additional virtual meetings during the year as needed. This also keeps costs down.

Note that the frequency of NOEC meetings will vary among countries.

Documentation and reporting: best practices

Technical advice and recommendations issued by NOECs to the health ministry are primarily communicated through meetings and written reports.

The NOECs should work with the national programme to prepare meeting reports. The following format and requirements can be useful:

1. The objective(s) of the country's onchocerciasis elimination plan.
2. The baseline epidemiological status of onchocerciasis (before the commencement of the control/elimination programme) with a map of the country showing a colour code for different transmission zones as described in Table 4.

Note: Points 1 and 2 are needed at the start of the programme, but not necessarily in subsequent annual reports.

3. The current transmission status of onchocerciasis in different transmission zones in the country (Table 5 can be used as an example), along with a map of current transmission status showing colour code (with legend) for different transmission zones (showing districts).

Table 5. Example onchocerciasis transmission status by zone, year to year.

Transmission status	Number of transmission zones		Current action taken
	Number at start of elimination programme [year]	Current number [year]	
Ivermectin-naive area; epidemiological status unknown or limited; OEM needed or integrated with Loa mapping if co-endemic with loiasis	10	2	OEM
Transmission ongoing, under MDA	7	2	MDA (specify frequency and drug used); conduct M&E
Interruption of transmission on track/ suppressed	5	2	Conduct pre-stop-MDA
Interruption of transmission suspected	8	10	Conduct stop-MDA surveys; serological and entomological surveys
Interruption of transmission achieved	0	3	Conduct PTS
Transmission eliminated	0	1	Zone moves to PES
Total	**30**	**20**	

MDA: mass drug administration; OEM: onchocerciasis elimination mapping; PES: post-elimination surveillance; PTS: post-treatment surveillance.

4. The transmission zones and the populations. Table 6 can be used as an example to show the transmission zones and the total population in countries where transmission has been interrupted and where ivermectin treatment has been stopped at the time of the report.

Table 6. Example transmission zones where interruption of transmission may have been achieved and ivermectin treatment stopped at the time of the report.

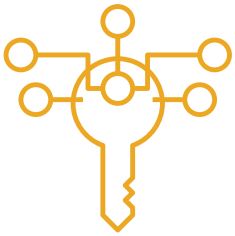
Transmission zone	No. of districts where transmission has been interrupted, MDA stopped and PTS completed for 3–5 years	No. of people no longer needing MDA for onchocerciasis, MDA stopped and PTS completed for 3–5 years	No. of districts where MDA has stopped and PTS has not yet been completed (under PTS)	No. of people for whom MDA for onchocerciasis has been stopped and PTS has not yet been completed (under PTS)
A	3	2.7 million		
B	2	1.5 million	2	1.5 million
C	4	3.0 million		
D	1	800 000	1	500 000
Total	**10**	**8 million**	**3**	**2 million**

MDA: mass drug administration; PTS: post-treatment surveillance.

Note: Stop MDA surveys ideally are conducted in sufficiently small evaluation areas (~< 1 million).

5. Cross-border (internal and international) collaborative elimination efforts
6. Co-endemicity of LF/onchocerciasis and onchocerciasis/loiasis
7. Integration with other NTDs and other sectors
8. Other challenges and critical actions taken
9. Progress towards onchocerciasis elimination in line with the WHO road map on NTDs (WHO, 2021).
10. Acknowledgements and appreciation

The health ministry should be encouraged to share reports from the NOEC more broadly, including with WHO and supporting partners.



Elimination status can only be granted to a country by the WHO Director-General after all identified foci under long-term

Preparation and submission of an elimination dossier: key activities

Elimination status can only be granted to a country by the WHO Director-General after all identified foci under long-term, continuous ivermectin treatment have been verified as free of transmission and sufficient evidence has been provided to demonstrate that all areas of potential transmission have been identified.

Once the end of post-treatment surveillance has been reached for all endemic areas, the NOEC should review the data assembled by the country programme, either countrywide or by individual foci or transmission zones. Once the NOEC has made its assessment and is satisfied, the secretariat of the national programme prepares a country report (dossier) and contacts WHO to begin the verification process.

Provisional plans from WHO suggest that an onchocerciasis elimination dossier must include the following elements:

1. The demographic and development context of the country.
2. An overview of the national health system and the onchocerciasis programme structure.
3. Historical documentation of onchocerciasis endemicity and prior interventions.
4. Description of intervention strategies such as MDA, vector control measures and treatment coverage.
5. Implementation details of post-treatment and post-elimination surveillance, including methods, serological results, entomological data and maps.
6. Special issues such as co-endemicity with other diseases (e.g. LF, loiasis), nomadic populations, and security and political challenges affecting programme implementation.
7. Resource and partnership details, including a list of partners, activities supported, geographical areas of intervention and associated costs.
8. Bibliography and publications generated over the years of the programme. Encourage and support publication of the results from the programme, as they document they are on track and when stop MDA and post PTS surveys are successful. Having peer reviewed publications will allow the verification committees to check that the WHO criteria were rigorously applied.

[4]
Best practices for effective NOECs

Managerial challenges can arise in a country when different partners support different aspects of an elimination agend

Collaboration: strategies for various stakeholders

Managerial challenges can arise in a country when different partners support different aspects of an elimination agenda. For example, NGOs may support smaller portions of a national programme, based on disease, implementation phase or administrative areas, which may be influenced by donor stipulations and organizational mandates. The NOEC can play an important role in helping national programmes to best coordinate resources.

NOECs can also influence resource mobilization and coordination by:

- Securing high-level meetings with Cabinet-level individuals to raise and maintain the profile of NTDs within the national government.
- Securing and maintaining funded and executed line-items in the national health budget – including appropriate staffing – that are considered critical to achieving and sustaining elimination.
- Engaging with other sectors and ministries continuously to maximize opportunities for integration, technical and operational support, and programme sustainability.
- Preparing ministries on strategies to “mainstream” longer-term activities (e.g. case-based treatments, integrated disease surveillance and response, primary health service care, integrated vector management, WASH collaboration, health promotion and behavioural change).

Beyond country-level engagement, Table 7 highlights the global entities that benefit from understanding NOEC recommendations.

Table 7. Mapping key mandates/objectives of WHO, ESPEN, NGO groups, GONE.

WHO headquarters	WHO regional offices (AFRO/ESPEN/EMRO)	Onchocerciasis NGOs for Elimination (ONE)	Global Onchocerciasis Network for Elimination (GONE)
• Issues policy guidance to national onchocerciasis programmes and endemic countries. • Recipient of donated medicines. **DTAG Subgroup on onchocerciasis** • Sets diagnostic priorities. • Develops new or reviews existing TPPs guidance for scientists and product developers. **Onchocerciasis Technical Advisory Subgroup (OTS)** • Reviews strategies and provides recommendations on common strategies for OEM, stop-MDA evaluation. • Identifies key research and operational questions. • Reviews and provides input to the development of milestones relevant to elimination of onchocerciasis. • Develops common strategies for mapping and treatment co-endemic areas.	**Provides technical and fundraising support to national onchocerciasis programmes** • Supports effective use of donated medicines through enhanced supply chain management by conducting country medicine inventory missions. • Helps countries develop annual national action plans, assists them in leveraging donated medicines for MDA. • Trains countries on how to conduct integrated transmission assessment surveys and provides operational support to implement impact assessments. • Enhances ESPEN Portal and ESPEN collect that enable data analysis to support smart, targeted investments and efficient use of drugs; trains countries how to use these.	• Works closely as implementation partners to provide technical and financial support to country programmes and NOECs. • Advocates for onchocerciasis and NTD elimination programmes with health ministries to mobilize domestic resources and political will for onchocerciasis elimination. • Helps identify issues in need of operational research and the resources needed to conduct it. • Helps translate WHO policies and procedures into practice in the field.	**Communication/ dissemination and advocacy platform for onchocerciasis community** • Provides more rapid and sustainable knowledge sharing and capacity strengthening. • Enhances country and partner coordination to jointly tackle obstacles to elimination and develop/ implement elimination strategies. • Maps onchocerciasis stakeholders. • Undertakes needs assessments by consulting countries on their gaps and needs. • Organizes country and topic focused meetings (e.g. webinars) to share best practices and challenges. • Develops a global advocacy and awareness-raising strategy to mobilize sustainable political and financial support for elimination. • Formalizes and standardizes advocacy activities and communication mechanisms to help ensure that priority concerns are addressed.

AFRO: WHO Regional Office for Africa; EMRO: WHO Regional Office for the Eastern Mediterranean; ESPEN: Expanded Special Project for Elimination of Neglected Tropical Diseases; MDA: mass drug administration; NGO: nongovernmental organization; WHO: World Health Organization.

Source: adapted from GONE TOR.

The WHO verification of elimination process requires that WHO take into account the status of transmission in the region

Cross-border collaboration: countries with shared endemic borders

Two types of cross-border collaboration are required in onchocerciasis elimination programmes: internal or cross-transmission zone collaboration within a country (i.e. collaboration among provincial/state, district/local government area (LGA) administrative divisions); and international collaboration (country to country).

Experience has shown that differences in public health interventions among administrative divisions are usually manageable within a national programme's planning mechanisms. However, coordinating the timing of MDA and impact surveys across cross-border endemic foci can be a challenge.

The WHO verification of elimination process requires that WHO take into account the status of transmission in the region (i.e. one country's verification could be paused because of transmission in neighbouring areas). Robust, efficient and active cross-border coordination is therefore required.

The critical issues that need to be addressed by the NOEC and national programmes to achieve effective cross-border collaboration are described below.

1. Determine the status of onchocerciasis elimination programmes at the border countries/communities/districts/LGAs.

The NOEC should support the national programme and facilitate data-sharing with the border countries on the status of onchocerciasis elimination of the border countries, states/provinces, districts and communities including:

- Level of onchocerciasis endemicity (epidemiological and entomological) including historical baseline prevalence.
- Accurate and complete geographical and therapeutic treatment coverage data (making clear if coverage refers to total population or eligible population). As coverage based on total population has been used by OCP and APOC, it may be encouraged to be used as the standard.
- Any coverage surveys that may have been conducted to compare reported coverage with realized coverage, including any data on systematic non-adherence, nomadic or hard-to-reach populations
- Status of elimination as defined in Table 4.

GONE, together with ESPEN, is gathering cross-border data for the development of an accessible cross-border repository to support health ministries and partners in their cross-border management.

2. Joint meetings and planning.

NOECs can help to establish country-country, state/province, or district/LGA collaborative meetings. This is usually done during work planning or during special cross-border meetings. These tips will help guide in joint planning:

1. Establish and maintain contacts at all administrative levels concerned
2. Synchronize and coordinate training/mobilization across borders
3. Synchronize and coordinate MDA activities across borders
4. Synchronize and coordinate surveillance activities across borders

5. Form joint monitoring and evaluation teams across borders
6. Maintain communication and share programme plans on both sides of the border
7. Manage budget expectations: increases in programmatic costs for cross-border activities are expected
8. Identify, register and mobilise CDDs working with immigrants/migrants as well as CDDs who are immigrants/migrants themselves on both sides of the border
9. Establish consistency in messages at the village level - taking language differences into consideration

It could be helpful to invite representatives of bordering countries to the NOEC meetings or share information and establish relationships that assist in cross border collaborative arrangements

3. Foster political commitment and collaboration.

Each NOEC and national programme should work out the most effective way to engage political commitment of the border endemic countries, states/provinces, districts/LGAs and communities.

The NOEC should support the health ministry to develop and sign high-level Memorandum of Understanding (MoU) on cross-border collaboration between health ministries. The NOEC should be involved in the preparation process of such an MoU. The NOEC should also play a key role in advocating for interministerial endorsement. See attached a template MoU which can be adapted according to national needs (Annex 4).

4. Monitor normal/natural population movement at the borders.

People may move from communities or countries where onchocerciasis is endemic, but not under MDA. They may then introduce or import onchocerciasis into their settled communities. The NOEC and national programme should develop protocols to help endemic communities regularly identify, sensitize and mobilize migrants in the communities and integrate them into the MDA programme.

5. Address language issues.

In zones where the border communities or countries speak different languages, the identification and use of interpreters should be a priority.

6. Ensure safe MDA in cross-border areas with security challenges.

NOECs and national programmes should be aware of strategies to implement MDA where there are security challenges, all while ensuring the safety of health workers and CDDs:

- Successful MDA in cross-border areas with security challenges requires the programme to be dynamic and flexible and to work with the local population.
- Where insecurity has brought migration, programmes are encouraged to include migrants as CDDs. The CDDs are normally chosen by the migrant/transient population. The same strategy is suggested where displaced populations are settled in camps.
- Up to date information on the type, magnitude and location of conflicts is crucial in planning and adapting.
- National programmes can learn from organizations with experience in conflict zones; programme officers for onchocerciasis should contact other implementation partners in their area to learn about their strategies.

[5]
Tools and resources for NOECs

Tools for surveillance and monitoring: examples of useful tools

Resources are available to support data visualization and review the epidemiological and entomological status of country programmes.

For countries in Africa, ESPEN processes nationally submitted single-year data through WHO reporting forms and creates data visualizations on both the ESPEN Portal (WHO, 2025b) and the Country Health Information Platform (CHIP) (WHO, 2025c). Both dashboards allow national programmes to download data for analysis and maps and graphics for presentation. CHIP dashboards summarize actual treatment coverage reported for the last five reporting years and provide a longer count of total treatment rounds and total effective treatment rounds. CHIP also includes an integrated watchlist, identifying implementation units that meet specific treatment coverage challenge scenarios.

Other publicly accessible geospatial tools can assist in supporting micro-planning activities as well as help visualize issues along national boundaries for cross-border collaboration. CrossRoads is a recently developed ArcGIS WebApp (Sightsavers, 2025). The tool itself maps out community locations 40 km either side of a shared border, with a set of basic mapping widgets (functions) to inform geographical review and discussion.

Examples of resource mobilization, advocacy tools, country cross-learning tools

- Advocacy: *Preventing expiration of essential medicines* (WHO, 2025d)
- Cross-learning: *Post validation surveillance* (Kikundi Voices, 2025e)

Review and update of the handbook

Future information generated from country experiences may justify a revision of this handbook as needed.

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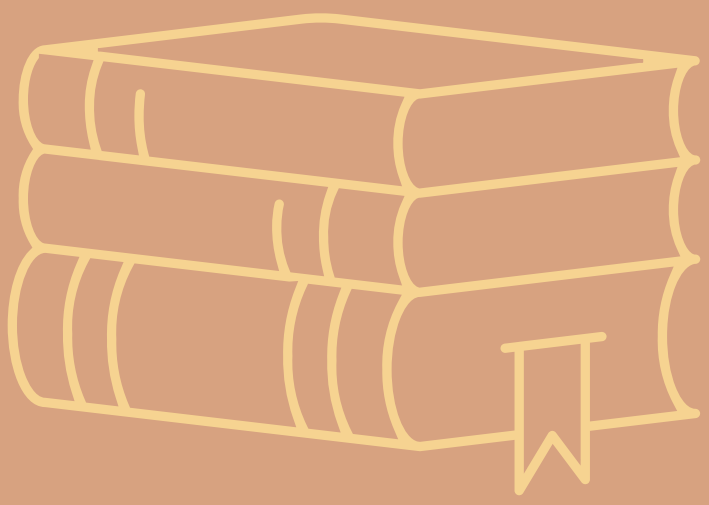

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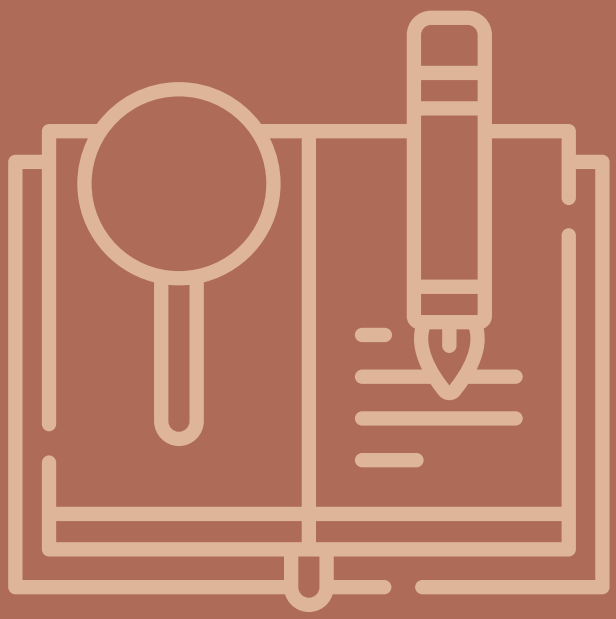
Annex 1. Approach to development of this handbook



This handbook was developed through an extensive global consultative process involving national onchocerciasis elimination committees (NOECs), national programmes and other stakeholders

This handbook was developed through an extensive global consultative process involving national onchocerciasis elimination committees (NOECs), national programmes and other stakeholders.

Information on the availability of NOECs in each endemic African country was sourced from the WHO Global Onchocerciasis Network for Elimination (GONE) and used to inform the development of the handbook. The available reports, recommendations and publications from NOECs were collated and analysed. The WHO guidelines (WHO, 2016), the GONE report (WHO, 2023) and all available NOEC documents were used to develop the first draft, which was presented and discussed at the first GONE meeting (Saly Mbour, Senegal, 1–3 November 2023) with Chairs of the African NOECs. The revised draft was reviewed by NOEC chairs and NOEC members, national programme managers for onchocerciasis, implementing partners and members of the WHO Onchocerciasis Technical Advisory Subgroup (OTS).

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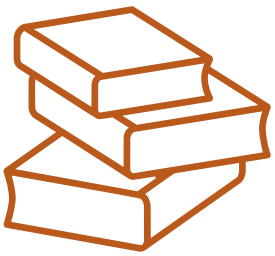
Annex 2. Declarations of interest and their management

In accordance with the policy of the World Health Organization (WHO), all external experts submitted to the Organization the completed “Declarations of interest for WHO experts” form, disclosing any potential conflicts of interest that might affect, or might reasonably be perceived to affect, their objectivity and independence in relation to the subject matter of this handbook. WHO reviewed each of the declarations and concluded that none could give rise to a potential or reasonably perceived conflict of interest related to the guidance.



Annex 3.
Suggested meeting agenda

Meetings of the national onchocerciasis elimination committee (NOEC) should include the following key agenda items:

Opening formalities

1. Registration
2. Opening
3. Introduction
4. Opening remark by the Chairperson
5. Welcome address by the representative of the Ministry of Health
6. Goodwill messages by partners
7. Review and adoption of the agenda
8. Review and adoption of the minutes of the last meeting
9. Matters arising from the last meeting
10. Review of the level of execution of the recommendations from the previous meeting
11. Update on onchocerciasis elimination in country by the Chairperson

Program report on implementation of activities and status on elimination of transmission in zones as defined in Table 6

1. Presentation by the health ministry representative/national program manager on update of the results of elimination activities for the last 12 months
2. Presentation on the status on elimination of transmission in zones defined in Table 6
3. Discussion on the presentations on whether the expected program targets have been achieved and identification of program gaps and challenges.

Integration

1. Update on integration with other NTD programs
2. Lymphatic filariasis co-endemicity with onchocerciasis

Cross-border issues and collaborations

1. National borders
2. International borders

Operational research in programmatic implementation

1. Results of any operational research on the programmatic implementation of elimination of onchocerciasis transmission in the country
2. Challenges encountered in the elimination program

Closing formalities

1. Draft communiqué/recommendations
2. Any other business
3. Date of next meeting
4. Closing remarks

- Sample ToR for NOEC.
- Monitoring and evaluation templates.
- List of useful contacts and resource organizations (e.g. WHO, United States Centers for Disease Control and Prevention (CDC), global health partnerships).
- References and further reading materials.

Annex 4. Template of memorandum of understanding

Memorandum of understanding

Between the Ministries of Health of XXXXX, YYYYY and ZZZZZ

On cross-border collaboration for onchocerciasis elimination

Many African countries endemic for onchocerciases have several shared transmission zones across their national borders. These endemic areas present a unique challenge of coordination between the different national programme activities on each side of the border. According to the *Guidelines for stopping mass drug administration and verifying elimination of human onchocerciasis*, published by the World Health Organization (WHO) in 2016, for elimination to be acknowledged, it is important that areas immediately surrounding that country have interrupted transmission.

For a country to verify the elimination of transmission of onchocerciasis, it must also show that cross-border collaboration has been undertaken and successfully led to the elimination of the cross-border transmission foci. Therefore, very robust, efficient and active cross-border coordination is required if the global targets set for the elimination of transmission of onchocerciasis are to be achieved. To prevent recrudescence or reinfection of the areas or zones where interruption or elimination of transmission has been achieved, effectively managed cross-border collaboration will help to solve the problem of recrudescence.

Preamble

The Ministries of Health of XXXXX, YYYYY and ZZZZZ (hereinafter referred to as “the parties”:

1. Recognizing the shared goal of eliminating onchocerciasis across borders;
2. Acknowledging the need for cross-border collaboration to address the transmission of the disease effectively;
3. Committing to coordinating efforts and resources for the successful implementation of control measures;

Agree to the following terms:

Article 1: Objectives and scope of cooperation

The parties will take the following necessary measures to achieve the shared goal of eliminating onchocerciasis:

1. Joint planning and execution of interventions, including mass drug administration (MDA) and surveillance in cross-border areas.
2. Synchronization of treatment schedules across the borders to ensure comprehensive coverage of populations at risk.
3. Joint surveillance and monitoring of onchocerciasis prevalence and impact assessments.

Article 2: Responsible authorities

1. The parties are designated as the authoritative bodies responsible for the execution of this memorandum of understanding (MOU).
2. The parties will assign a focal point or committee to coordinate cross-border activities related to onchocerciasis elimination.
3. Regular meetings between senior officials and technical experts of the parties will be held to ensure the smooth implementation of the agreed activities, with meetings hosted alternately by the respective countries. Findings from cross-border activities will be disseminated to relevant fora/committees of each country to inform decision-making.
4. The national programme manager for onchocerciasis and the chair of the national onchocerciasis elimination committee will be invited to report on cross-border activities at the national onchocerciasis elimination committee meeting of the respective neighbouring country.
5. Joint cross-border teams at local level will be established and will hold regular joint cross-border meetings to coordinate and align micro-planning activities along the borders.

Article 3: Cross-border movement

1. The parties will facilitate cross-border movement of local staff who implement cross-border onchocerciasis elimination activities. There will be no travel restrictions and visa requirements for cross-border health teams.
2. The border security officers of concerned countries will provide the joint health team with protection and precautionary guidance during their operations.
3. The head of customs will facilitate the free movement of field supplies and equipment whenever need arises.

Article 4: Responsibilities and procedures

1. The responsible authorities shall ensure that all activities are aligned with national onchocerciasis elimination strategies and WHO guidelines.
2. Information on treatment plans, coverage targets and progress reports will be shared regularly between the parties.
3. The parties will collaborate in advocacy and sensitization as well as resource mobilization, including technical support, and logistic arrangements, to support cross-border activities.

Article 5: Surveillance and data-sharing

1. Surveillance activities will be conducted jointly in border areas, and the data collected will be shared transparently between the countries.
2. Joint monitoring and evaluation exercises will be organized to assess the progress of interventions and adjust strategies as needed.
3. The parties will develop a shared data repository for tracking progress towards elimination in the cross-border regions.

Article 6: Accountability and transparency

1. All parties agree to demonstrate accountability in the implementation of activities by regularly reporting progress to regional health organizations and donors.
2. Each party is responsible for ensuring transparency in the allocation and use of resources, and for providing regular updates on the status of onchocerciasis elimination efforts within its territory.

Article 7: Amendments

Any amendments or additions to this MOU may be made only by mutual agreement of the parties and must be documented in writing.

Article 8: Dispute resolution

Any disputes arising from the interpretation or implementation of this MOU shall be resolved amicably through mutual discussions between the parties.

Article 9: Duration and termination

1. This MOU shall enter into force upon signature by all parties and shall remain in effect until the successful elimination of onchocerciasis in the designated areas.
2. Any party wishing to withdraw from this agreement must provide written notice at least months in advance.

Signed:

For the Ministry of Health of XXXX:

_____

[Name]

[Title]

For the Ministry of Health of YYYY:

_____

[Name]

[Title]

For the Ministry of Health of ZZZZ:

_____

[Name]

[Title]

This MOU is signed in [City], on [Date (dd/mm/yyyy)].

For further information, contact:
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neglected.diseases@who.int
www.who.int/teams/control-of-neglected-tropical-diseases

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