Post Validation Surveillance

Kikundi Voices

Background

Efforts to combat NTDs have seen significant progress over the past decades, owing to concerted global initiatives, targeted interventions, and innovative strategies.[1] The pursuit of NTD elimination, as outlined by the World Health Organization (WHO) and other international agencies, involves a multifaceted approach encompassing mass drug administration (MDA), vector control, improved access to clean water and sanitation, and health education.[2] These integrated interventions have led to substantial reductions in the prevalence and burden of NTDs in several endemic regions.[3] This progress underscores the effectiveness of collaborative efforts between governments, non-governmental organizations, and the private sector in combating NTDs, ultimately contributing to the broader global health agenda.

As countries approach the threshold of NTD elimination, it becomes imperative to transition from control activities to robust post-validation surveillance systems. Post-validation surveillance, a critical phase in the NTD elimination continuum, involves the sustained monitoring of disease prevalence and intensity to prevent resurgence and ensure the maintenance of disease-free status.[4] This phase necessitates meticulous planning, resource allocation, and the establishment of robust surveillance networks that can promptly detect and respond to any potential resurgence.[5] Advanced diagnostic tools, spatial modeling, and data analytics play pivotal roles in post-validation surveillance, enabling real-time tracking of disease dynamics and facilitating evidence-based decision-making.[2] Additionally, sustained community engagement, capacity-building, and cross-sectoral collaborations remain essential components in maintaining the gains achieved in NTD elimination efforts.[7] This comprehensive approach to post-validation surveillance is vital for consolidating progress, safeguarding public health, and preventing the re-emergence of NTDs in previously endemic regions.

During Kikundi's annual site visit in Senegal conducted from 13th to 17th February 2023, 14 neglected tropical diseases (NTD) Program Managers (PMs) discussed their experiences, successes, and challenges around post-elimination monitoring and surveillance. A panel composed of the PMs from Senegal, Rwanda, and Togo presented specific experiences from their countries, followed by a discussion moderated by the Head of MSAS Surveillance Division & Head of Senegalese Doctor's Association of Senegal.

Dr Ndeye Kane, Program Manager of Senegal, presenting her country's NTD masterplan during Kikundi's site visit in Senegal (© Agazi, 2023)

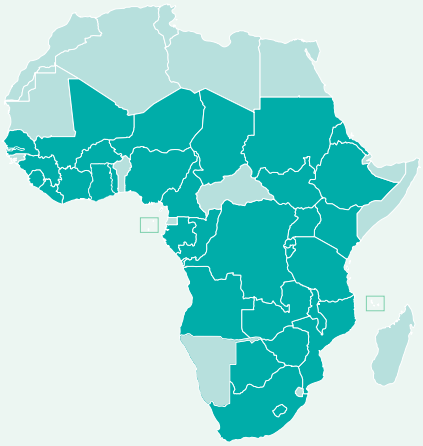
"Vectors do not respect borders"

Dr Ndeye Kane,
Program Manager
Senegal

Key Takeways

- Surveillance is information that calls for action. Thus it is important to have feedback channels at all levels, from national to community levels
- **Integration of NTDs into routine and event-based surveillance systems** is critical for maintaining elimination status
- "***Vectors do not respect borders***" - a critical area of surveillance is along country borders. This necessitates the importance of building relationships between NTD programs in neighboring countries
- For some diseases, there is not an official post validation surveillance (PVS) framework needed to guide elimination effots – thus, programs are creating their own processes to protect themselves from resurgence. **Once diseases have been eliminated, programs need sustainable resources** (e.g., funding to continue surveillance activities)
- ***Kikundi can serve as an advocacy platform to document PVS efforts, and suggest potential standardized PVS best practices based on country lessons learned***
- The political will of especially program leads can help integration to succeed

Kikundi Stats



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* Members include National NTD program coordinators, disease focal points, and a few previous Program Managers.

Country Insights

A community health worker engages with parents and Kikundi members during a mass drug admisstration campaign in Rwanda (© Kikundi, 2023)

Surveillance for Human African trypanosomiasis (HAT) in Rwanda

In Rwanda, the surveillance efforts for Human African Trypanosomiasis (HAT) have yielded success, with the country achieving elimination in April 2022. The NTD team strategically established **active and passive surveillance sites** in the eastern region of the country, employing a sentinel surveillance approach. Notably, **the placement of sentinel sites occurred prior to the validation process** by the World Health Organization (WHO).

Before the initiation of surveillance, the program conducted comprehensive training sessions for individuals in health facilities, ensuring a thorough understanding of the surveillance process. The active case surveillance approach involved **robust community engagement strategies** and **intensive mobilization activities**, particularly in areas proximate to national borders.

Collaboration with farmers played a pivotal role in the initiative, as they were engaged in milk collection activities for cattle testing and were educated about the disease. Moreover, **farmers were enlisted as community surveyors**, tasked with inquiring about any potential cases within their communities that might indicate HAT. Through this community-driven process, the program effectively assessed all risk areas, ultimately confirming the absence of the disease. Given the symptom overlap between HAT and other diseases like malaria, HAT testing was extended to community members presenting with relevant symptoms.

Following the active surveillance phase, the program transitioned diagnosis procedures to the laboratory level and implemented a passive surveillance approach to sustain the efforts. This approach ensures continued vigilance for any potential resurgence of HAT cases, safeguarding the progress made in achieving elimination.

Lymphatic Filariasis Surveillance in Togo

In Togo, diligent efforts in Lymphatic Filariasis (LF) surveillance led to the country's validation for LF elimination in 2017. In the absence of an established World Health Organization (WHO) Post-Validation Surveillance (PSV) framework, the country's program took the initiative to devise its own post-validation process.

In 2017, a comprehensive vector survey was conducted by collecting a substantial number of mosquitoes (N=9,191) using fly catch nets in high-risk areas along the Burkina Faso border. The results were highly encouraging, indicating a 0% prevalence of LF.

Jean Bosco Mbonigaba

NTD Program Manager
Rwanda

NTDs Eliminated

Human African Tryponomiasis	2018

Dr Piham Gnossike

NTD Program Manager
Togo

NTDs Eliminated

Guinea-worm Disease	2011
Lymphatic Filariasis	2017
Human African Tryponomiasis	2021
Trachoma	2022

Subsequently, in 2018, surveillance efforts were targeted towards migrants entering Togo from Burkina Faso (N=1,390). The survey identified 58 positive cases, amounting to a prevalence of 4.2%.

Since 2018, no specific surveillance activities have been undertaken for LF. At present, the program is primarily focused on managing LF-related morbidities, including procedures such as hydrocelectomy.

However, it is important to note that the program highlighted several significant challenges. Firstly, there remains a **notable absence of a WHO framework** to guide the sustained efforts for LF elimination. Additionally, there is a **discernible reluctance to allocate funding towards the disease once elimination has been achieved.** Lastly, there is a pressing need to effectively enforce and operationalize policies to ensure the continued success in maintaining LF elimination status in Togo.

Importance of Post-Elimination Surveillance in Senegal

Senegal has recently prioritized the strengthening of its surveillance system. **The current system comprises three divisions**: the Division of Immunization, the Office for Surveillance and Reports (which covers vaccinations and neglected tropical diseases), and the Office for Individual and Collective Prevention, along with a program targeting tobacco control. The surveillance framework is organized around three main axes.

Firstly, **routine** surveillance encompasses the reporting of 52 diseases, including 10 neglected tropical diseases (NTDs), through the DHIS2 tracking system. This data is collected by facility nurses and **consolidated at the regional level** (with one site per region). Secondly, **sentinel surveillance** primarily focuses on hemorrhagic fevers and is an integral component of the task force established by ECOWAS in collaboration with the Senegal Pasteur Institute. Lastly, **event-based surveillance** involves reporting specific occurrences such as deaths or clusters of suspected diseases like measles and polio. **All surveillance data is channeled through the DHIS2** platform to streamline the reporting process.

Senegal's surveillance system has already successfully integrated several NTDs. For instance, **regular reporting of Guinea worm cases persists even after the disease has been eliminated**, as monitoring zero cases is crucial to ensure the absence of new instances. Additionally, all animal bites, regardless of the source (dogs or donkeys), are reported and monitored to prevent the emergence of rabies cases.

Dr Ndeye Kane

NTD Program Manager
Senegal

NTDs Eliminated

Guinea-worm Disease 2004

Community-based surveillance plays a pivotal role in disease elimination efforts, particularly for diseases such as polio, meningitis, and hemorrhagic fevers. Key stakeholders in surveillance are distributed across various administrative levels, ranging from national to community levels. Notably, community-level involvement is paramount. Under a community-based strategy, communities are **educated on case definitions and encouraged to promptly report any suspected cases** to local health authorities. These cases are then assessed by a local nurse and forwarded if confirmed. The information is transmitted via telephone to a central level and acted upon promptly.

An **integrated model is fundamental** to the success of the approach, and the integration of NTDs into existing systems is crucial for a country's public health status. **Districts serve as pivotal points for this integration.** NTDs pose a unique challenge as **both individuals and vectors require surveillance.** Effective elimination necessitates countries working collectively, as vectors do not adhere to international borders.

While the WHO encourages countries to develop their own PVS approaches, there is a need for guidance on the process. Essential elements include a comprehensive understanding of the distinction between eliminating a disease as a public health problem (validation) versus eradicating transmission (verification), along with the corresponding program requirements for each approach. Additionally, **clear case definitions** and identification methods are imperative. ***For countries that have achieved elimination but lack WHO guidance, Kikundi can serve as a platform for advocacy and the development of a memorandum seeking guidance from the WHO.***

Community Reflections

Left to right: Fikre Seife (Ethiopia), Dr Joseph Opare (Ghaha), and Dr Piham Gnosike (Togo) share their exerpiences at the recent NNN converence (© NNN, 2023)

During the panel discussions, several valuable insights and strategies were shared regarding surveillance for neglected tropical diseases (NTDs) in various countries. It was proposed that establishing a collaborative platform at the district or regional level would be more effective in disseminating information, as reaching individuals at higher levels might prove challenging. Additionally, **integration with existing programs, such as malaria control, was identified as crucial for comprehensive surveillance efforts.**

In the case of Togo, the program faced **resource constraints** while exploring integration with programs like malaria. Despite successful vector surveys in high-risk areas along the Burkina Faso border in 2017, which indicated a 0% prevalence of LF, the program encountered **difficulties in cross-border surveillance due to the absence of a clear protocol.**

A participant raised a critical question about non-medical and social support for individuals experiencing long-term consequences of LF, such as women facing abandonment by their husbands. The Togolese program acknowledged the complexity of LF management, especially in addressing scarring resulting from surgical interventions.

Elimination Watch

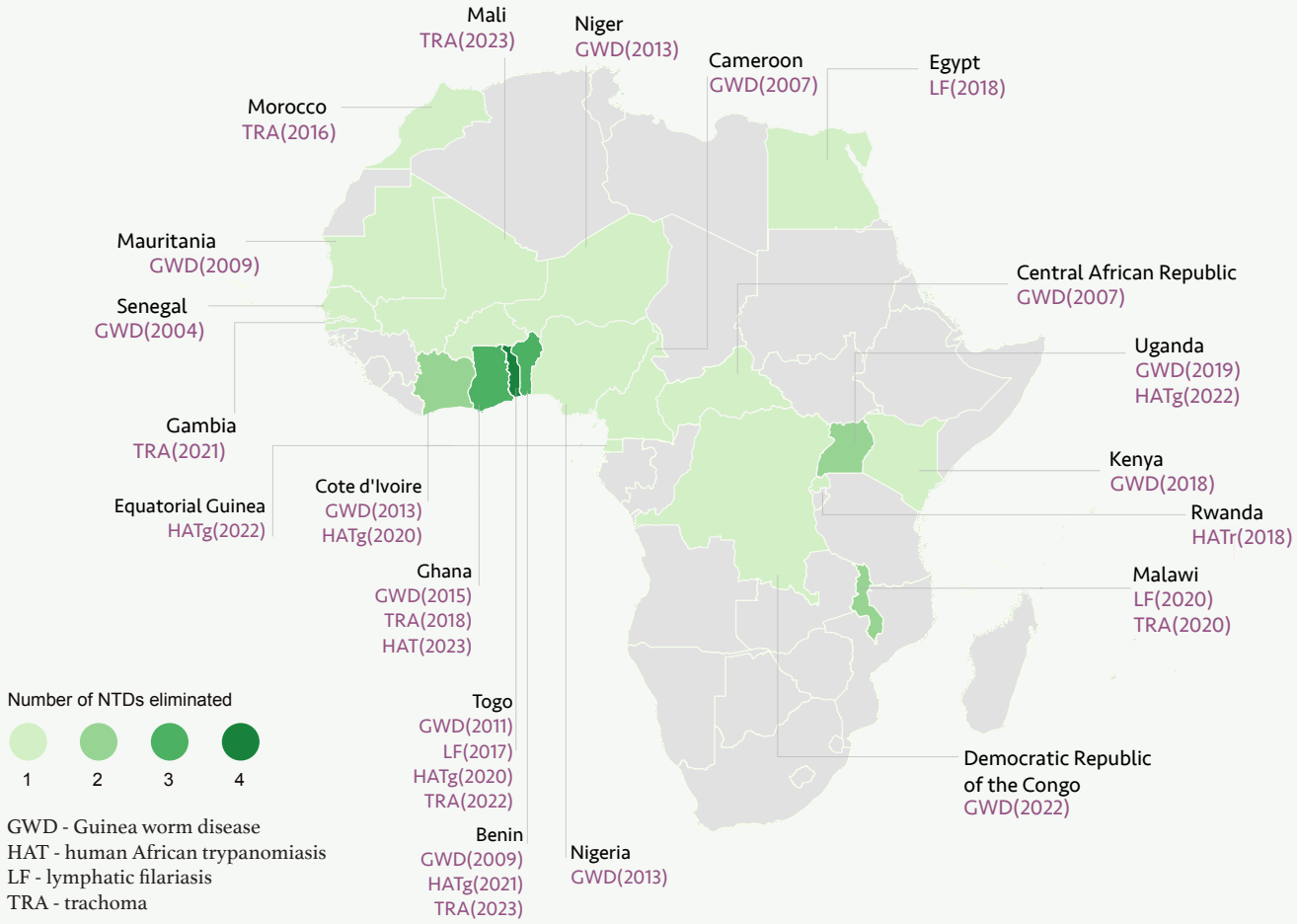

Figure: African countries that have eliminated NTDs as of August 2023 (data source: WHO) (© Agazi, 2023)

They Togolese program further emphasized that currently, surgical procedures are not advised, and LF morbidity management has been incorporated into minimal packages and universal health coverage. However, resource mobilization for these activities remains a challenge, as does the provision of adequate psychosocial support.

The Rwandan program underscored the significance of **community mobilization and understanding local contexts for sustained surveillance.** They emphasized monitoring population movement between Rwanda, Tanzania, and Uganda, stressing the importance of **robust collaboration with NTD programs in neighboring countries**.

Regarding the issue of cross-border surveillance, Togo highlighted its importance but acknowledged the lack of a clear protocol, necessitating the creation of a process from scratch. Resource limitations further hindered broader surveillance efforts. Furthermore, the integration of sentinel sites for monitoring multiple diseases was confirmed by the Togo program, emphasizing its importance for a comprehensive surveillance approach. Rwanda echoed this sentiment, emphasizing the need for integration at both administrative and policy levels.

The Gambia stressed the importance of existing **Integrated Disease Surveillance and Response (IDSR)** guidelines and highlighted the value of including NTDs in routine surveillance systems. They provided an example of their approach to trachoma surveillance, emphasizing community-level training for early detection and reporting.

In conclusion, the discussions emphasized the need for ***adaptable and integrated surveillance systems tailored to specific disease contexts.*** The importance of ***community involvement, clear case definitions, and cross-border collaboration*** were underscored throughout the conversation. Additionally, the integration of NTD surveillance with existing health systems and data collection mechanisms, including animal health, was recognized as critical for effective disease monitoring and response.

Recommendations

Balla Jatta (left), Program Manager of Gambia & the current Kiundi co-Chair, poses for a photo following a successful workshop co-organized by Kikundi at the NNN conference (© NNN, 2023)

Following the discussions, PMs inked the following loose framework to support the development of a potential guiding document based on WHO's recommendations.

General objectives of PVS

- To avoid re-emergence, in other words to prevent the re-establishment of transmission after validation or verification of the elimination of NTDs
- Prevent upsurges in areas cleared of NTDs
- Identify previously unidentified foci of infection
- Evaluate the effectiveness of interventions

What post-validation monitoring model should be put in place?

- Surveillance integrated into the epidemiology surveillance system
- Define indicators with a reporting system
- Surveillance based on formerly endemic zones taking into account sentinels the cross-border aspect routine for certain NTDs
- A reporting system identical to that of the national information system
- Define the necessary tools
- Identify the capacities needed to implement post-surveillance validation
- Anticipate post-validation surveillance (the mechanism must be put in place)
- Train NTD focal points on surveillance and other actors
- Develop case definitions for each NTD (refer to the WHO document on surveillance diseases)

Which populations should be monitored?

- Populations where the NTD was endemic
- Populations at risk (border areas, hot spots, nomads, etc.)

What type of information should be collected?

- Morbidity data (all NTDs)
- Seroprevalence data
- Entomological data
- Zoonotic data
- WASH data

Next steps

- Develop a model document (reference for countries) on post-validation surveillance of NTDs (based on WHO recommendations)
- Conduct strong advocacy with WHO to fill the gap on NTD post-validation surveillance guidelines

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