

REGIONAL SUPPLY CHAIN WORKSHOP

DAY 3

Inventory Reconciliation



**World Health
Organization**

African Region



**EXPANDED SPECIAL PROJECT
FOR ELIMINATION OF
NEGLECTED TROPICAL DISEASES**

WRAP UP DAY 2

Mozambique ,Chad, Nigeria



DAY 2 RECAP OF REGIONAL TRAINING WORKSHOP ON SUPPLY CHAIN MANAGEMENT FOR PC-NTDS

Global Supply Chain Trends Impacting the African Region

- Highlight of the presentation is the impact of global geopolitical disruptions on humanitarian logistics.
 - These include - port congestion, equipment shortages, increased fuel costs, and rerouting, which have significantly extended transit times worldwide.
-
- Countries were advised to strengthen communication, maintain buffer stocks, pre-clear documentation, and establish alternative shipping routes.

Operational Challenges in Shipment and Delivery of PC-NTD Medicines:

*Experience from a
Freight Forwarder*

- Major challenges experienced include regulatory changes, customs delays, documentation issues, rising fuel costs, scarcity of containers, fluctuating freight charges, shipping disruptions, and increased operational costs due to the Middle East crisis.

- Mitigation plans such as early stakeholder engagement, buffer stock (2-4 weeks), pre-clear permit, back-up routes and proactive customs management were recommended to minimize delays and demurrage costs.
- 7C's communication checklist was also highlighted as one of the key mitigation plan.

Improving First Mile Coordination:

Greenlight and Customs KPIs

- Perfect all regulatory requirements (Import regulations and program readiness)
 - Noticeably, there is an increase in approval timeline across countries above the operational targets of 2weeks.
 - Faster approvals are largely associated with advanced permit preparation, strong communication, clearly defined responsibilities, and established SOPs.
-
- Delays in Green Light approvals result in increased storage costs and inefficiencies.
 - Participants engaged in practical exercises using the system and provided feedback on data accuracy, KPI reporting, system integration, and user access, with recommendations aimed at improving data visibility, forecasting, decision-making, and overall supply chain management.

NTDeliver

- A centralized platform for monitoring medicine orders and shipment milestones.
 - The system integrates data from WHO, donors, freight forwarders, and countries, enabling users to track orders, monitor KPIs, forecast stock availability, and identify potential supply chain risks.
 - It has an open access capability (with limited functionality)
-
- It has login access capability (Expanded functionalities)
 - There was also a hands - on session on the use of the tool (shipment data, customs clearance timelines e.t.c)
 - Country feedback session showcased participants' familiarity with the platform and demonstrated how performance data can support decision-making.

Customs coordination and drafting of a flow- map for DRC

- This showcased key stages of customs clearance and the roles of different stakeholders. It includes; Pre – clearance, Clearance & Validation/delivery
- Stakeholders involved are Freight forwarders e.g DHL, country NTD programmes, Consignee's e.g WHO
- Using the DRC example, identified common bottlenecks, delays in obtaining tax exemptions, and insufficient stakeholder coordination.

- Proposed solutions included SOP development, improved communication channels, and clearer assignment of responsibilities

Custom clearance process flow mapping - It helps identifies roles and responsibilities of stakeholders involved in custom clearance .

Country break out to map/development of flow charts

- Aimed to develop customs clearance process flow chart.
 - It allows country to map their own customs clearance processes, identify bottlenecks, and develop mitigation plans.
 - It also showcased the importance of understanding stakeholder roles, decision pathways e.t.c
-
- There was a gallery walk to cross- learn from other countries present
 - Survey results on NTDeliver indicated that the tool is primarily used for shipment tracking, but users requested improved dashboards, better language support, enhanced training, and automated alerts.



- Reduce Green Light approval timelines by completing documentation and import permits before submission.
- Develop or strengthen national Green Light and customs SOPs with clearly defined responsibilities and signatories.
- Customs clearance performance has improved, with 93% of 2026 shipments clearing within four weeks
- Maintain buffer stocks and contingency logistics arrangements to mitigate global disruptions
- Provide user feedback to strengthen NTDeliver functionality and reporting.

THANK YOU



QUIZ

Day 2 – Quick Quiz

Four questions to check what we captured today

English • Français • Português

Multiple choice • no marks, just a show of hands • answers revealed at the end

Chaque question est présentée en anglais, en français et en portugais / Cada pergunta é apresentada em inglês, francês e português

SCM Workshop for PC-NTDs • Kintele • 16 June 2026

According to the Day 2 data, what share of purchase orders completes the Green Light process within the 14-day operational target?

A

About 80%

B

About 56%

C

About 17%

D

100%

Selon les données du Jour 2, quelle proportion des bons de commande franchit le « Feu vert » dans le délai opérationnel de 14 jours ?

A

Environ 80 %

B

Environ 56 %

C

Environ 17 %

D

100 %

Segundo os dados do Dia 2, que proporção das ordens de compra conclui o processo de “Sinal verde” dentro da meta operacional de 14 dias?

A

Cerca de 80%

B

Cerca de 56%

C

Cerca de 17%

D

100%

DHL explained that transit times to Africa have lengthened (e.g. Lisbon–Mombasa from 44 to 77 days). What is the main reason?

A

Lower demand for medicines

B

Global knock-on effects of the Middle East / Strait of Hormuz disruption (re-routing, capacity, fuel)

C

Faster customs processes

D

A purely local issue with no global impact

La DHL a expliqué que les délais de transit vers l'Afrique se sont allongés (p. ex. Lisbonne–Mombasa, de 44 à 77 jours). Quelle en est la principale raison ?

A

Une baisse de la demande de médicaments

B

Les répercussions mondiales de la crise au Moyen-Orient / détroit d'Ormuz (déroutage, capacité, carburant)

C

Des procédures douanières plus rapides

D

Un problème purement local sans impact mondial

A DHL explicou que os prazos de trânsito para a África aumentaram (p. ex. Lisboa–Mombasa, de 44 para 77 dias). Qual é a principal razão?

A

Uma queda na procura de medicamentos

B

Os efeitos globais da crise no Médio Oriente / Estreito de Ormuz (redirecionamento, capacidade, combustível)

C

Processos alfandegários mais rápidos

D

Um problema puramente local, sem impacto global

What is NTDeliver?

A

A last-mile distribution app for community health workers

B

A first-mile supply-chain tracking system, with open look-up access and login-only tools (KPI Dashboard, MDA Planning Tool)

C

A pharmaceutical manufacturing database

D

A national customs authority platform

Qu'est-ce que NTDeliver ?

A

Une application de distribution du dernier kilomètre pour les agents de santé communautaires

B

Un système de suivi de la chaîne d'approvisionnement du premier kilomètre, avec accès public et outils réservés aux comptes (tableau de bord KPI, outil de planification MDA)

C

Une base de données de fabrication pharmaceutique

D

Une plateforme de l'autorité douanière nationale

O que é o NTDeliver?

A

Uma aplicação de distribuição de última milha para agentes comunitários de saúde

B

Um sistema de rastreamento da cadeia da primeira milha, com acesso público e ferramentas restritas a contas (painel de KPI, ferramenta de planeamento de MDA)

C

Uma base de dados de fabrico farmacêutico

D

Uma plataforma da autoridade aduaneira nacional

What was the central message about Green Light approval and customs clearance?

A

They are purely administrative steps with no programme impact

B

They are programme-readiness activities — every week saved adds time for MDA implementation

C

They are solely the donor's responsibility

D

They matter only for air shipments

Quel était le message central concernant l'approbation du « Feu vert » et le dédouanement ?

A

Ce sont de simples étapes administratives sans impact sur le programme

B

Ce sont des activités de préparation du programme — chaque semaine gagnée ajoute du temps pour la mise en œuvre de la MDA

C

Ils relèvent uniquement de la responsabilité du donateur

D

Ils ne concernent que les expéditions aériennes

Qual foi a mensagem central sobre a aprovação do “Sinal verde” e o desembaraço aduaneiro?

A

São apenas etapas administrativas, sem impacto no programa

B

São atividades de preparação do programa — cada semana poupada acrescenta tempo para a implementação da MDA

C

São da responsabilidade exclusiva do doador

D

Só importam para remessas aéreas



Bonnes réponses / Respostas

Q1**C****About 17%**

EN: Only 17.4% met the 14-day target; about 56% took more than 30 days.

FR: Seuls 17,4 % respectaient le délai de 14 jours ; environ 56 % dépassaient 30 jours. **PT:** Apenas 17,4% cumpriram a meta de 14 dias; cerca de 56% ultrapassaram 30 dias.

Q2**B****Global knock-on effects of the Middle East / Strait of Hormuz disruption (re-routing, capacity, fuel)**

EN: Shipping is globally interconnected, so the Middle East disruption affects all corridors.

FR: Le transport maritime est interconnecté à l'échelle mondiale ; la crise affecte tous les corridors. **PT:** O transporte marítimo é interligado globalmente; a crise afeta todos os corredores.

Q3**B****A first-mile supply-chain tracking system, with open look-up access and login-only tools (KPI Dashboard, MDA Planning Tool)**

EN: NTDeliver is the first-mile tracking system; operational tools sit behind a login.

FR: NTDeliver est le système de suivi du premier kilomètre ; les outils opérationnels nécessitent un compte. **PT:** O NTDeliver é o sistema de rastreamento da primeira milha; as ferramentas operacionais exigem conta.

Q4**B****They are programme-readiness activities — every week saved adds time for MDA implementation**

EN: Both are programme-readiness activities; time saved becomes MDA implementation time.

FR: Ce sont des activités de préparation ; le temps gagné devient du temps de mise en œuvre de la MDA. **PT:** São atividades de preparação; o tempo poupado torna-se tempo de implementação da MDA.

Daily Summary Teams

✓ *Each day, the designated countries will present a brief summary of the key discussions, lessons learned and agreed action points.*

- Day 3: Democratic Republic of Congo (DRC), Mauritania, Kenya
- Day 4: Central African Republic, United Republic of Tanzania (Mainland), Ethiopia

AFRO Operational Readiness and Joint Application Approval

Understanding how application timing influences
downstream supply chain performance

*Presented by: Cassandra Holloway
NTD Supply Chain Forum
ITI/TFGH*



Major factors affecting JAP timeliness

- The timely delivery of medicines for NTDs relies heavily on the WHO JAP.
- Delays in the application and approval processes frequently create ripple effects that push delivery dates past scheduled MDA campaigns.
- The major factors affecting this timeline span data accuracy, rigid administrative schedules, and regulatory bottlenecks.

1 Application Readiness & Data Quality



Completeness of dossiers:

Missing epidemiological data, treatment needs forecasts, or inconsistent data/reporting trigger back-and-forth queries.



Accuracy of quantification:

Weak forecasting methodologies (e.g., outdated prevalence data, poor integration of programmatic targets) lead to revisions.



Alignment with WHO guidelines:

Some applications not fully aligned with current treatment protocols or elimination strategies require resubmission.



Supporting documentation:

Missing documents, inconsistent data, or poor-quality applications often lead to queries, clarification requests, and resubmissions.



Why it matters

Delays at the application stage reduce the operational time available for Greenlight approval, shipment coordination, customs clearance, distribution planning, and ultimately, successful MDA implementation.

Every week lost early is time lost everywhere.



Major factors affecting JAP timeliness



KEY CHALLENGE

Delays often originate before medicines are ordered.

Coordination, review timelines, and data quality all influence how quickly applications move through the JAP process.



2

Coordination Across Stakeholders & Country-Level



Communication Efficiency

Delays arise from slow information exchange between:

- WHO
- Ministries of Health
- Implementing Partners



Stakeholder Engagement Timing & Partner Coordination

Late or inadequate involvement of:

- NGOs
- Implementing Partners
- Donors



3

Submission Timing & JRSM Review



Late Submission & Failure to Meet the 9-Month Window

- Missed review windows and deferred applications.
- Delays can push programmes by a full year.



Batch Processing Constraints

- JRSM reviews multiple applications simultaneously.
- Creates review bottlenecks.



Lengthy Review Process

- Extended review periods.
- Slow response to feedback.



4

Data Requirements & Evidence Availability



Epidemiological Data Quality

- Incomplete or outdated disease burden data.
- Incomplete JRF reporting.



Programmatic Data Gaps

- Missing treatment strategies.
- Missing coverage plans.
- Weak monitoring frameworks.



Adapting to Evolving Guidelines

- Additional analysis required when recommendations change.



Inventory Accuracy

- Incomplete remaining balance records.
- Delays validation of medicine needs.



KEY MESSAGE

Timely JAP approval depends on strong coordination, timely submission, efficient review processes, and reliable programme data. Delays in any one area can affect medicine availability and MDA implementation timelines.



Introduction

Time is one of the most valuable programme resources, and **application timing determines how much of that time is available before MDA implementation.**



Earlier applications create **more flexibility.**



Efficient approvals **preserve that flexibility.**



More operational time **improves programme readiness.**

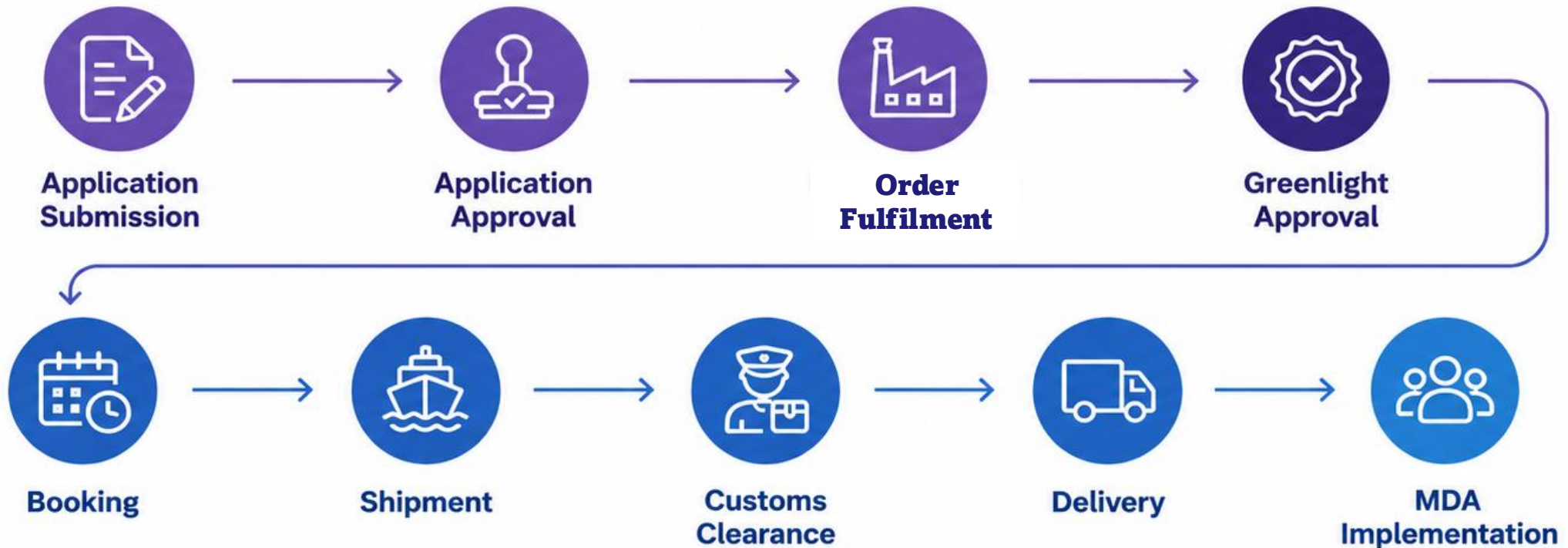


Our goal: strengthen planning, improve coordination, and reduce operational pressure across the NTD supply chain in the AFRO region.

AFRO Application Timing and Remaining Operational Window Before MDA

HOW EARLY PLANNING DRIVES SUCCESSFUL IMPLEMENTATION

FROM APPLICATION SUBMISSION TO MDA IMPLEMENTATION



Time is one of the **most valuable programme resources**. Earlier applications create **more opportunity** for planning, coordination, **risk mitigation**, and **successful implementation**.



KEY QUESTION

How much operational time remains after applications are approved?

AFRO Application Timing and Remaining Operational Window Before MDA

Latest Completed MDA Cycle with Full Application-to-Delivery Data



This analysis evaluates application submission timing, approval timeliness, and the remaining operational time available before the planned MDA across AFRO countries using the latest completed MDA cycle with full application-to-delivery data.

HOW TO READ THIS CHART



TIME ENTERING THE SYSTEM

Application submitted
(Months before MDA)



TIME CONSUMED BY APPROVAL

Approval process duration
(Months to approve)



TIME REMAINING BEFORE MDA

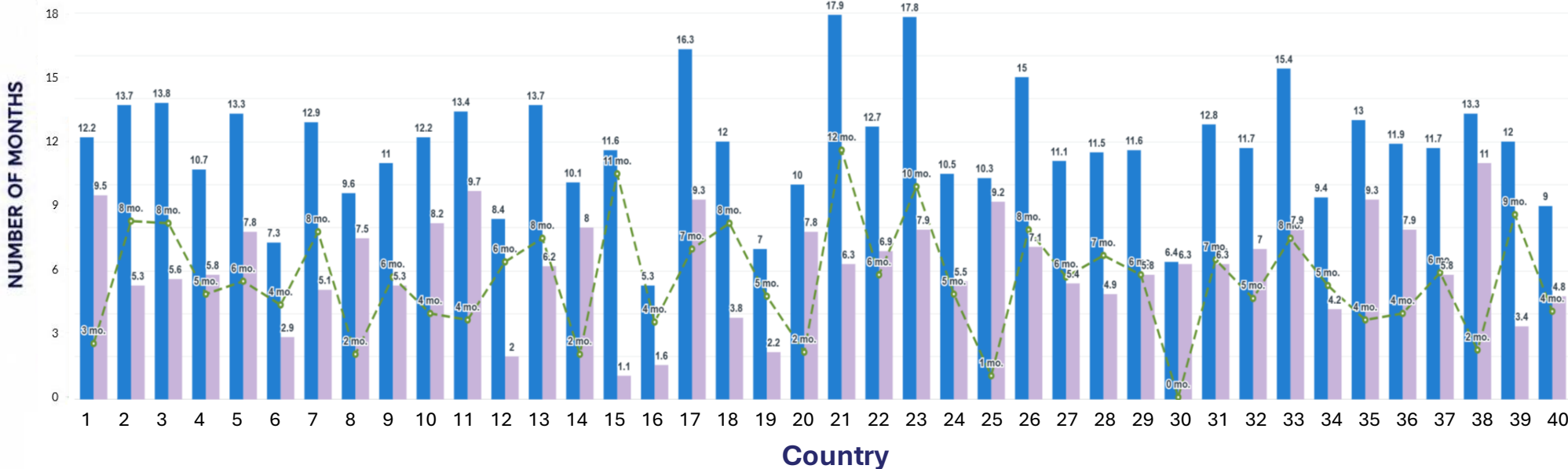
Operational window
(Months remaining before MDA)

APPLICATION SUBMISSION TIMING
Blue bars show how many months before MDA the application was submitted.

APPROVAL TIMELINE
Purple bars show how many months the approval process required.

OPERATIONAL WINDOW
Green line shows the months remaining before MDA once approvals were completed.

This is the operational window available for all downstream implementation activities.



KEY MESSAGE

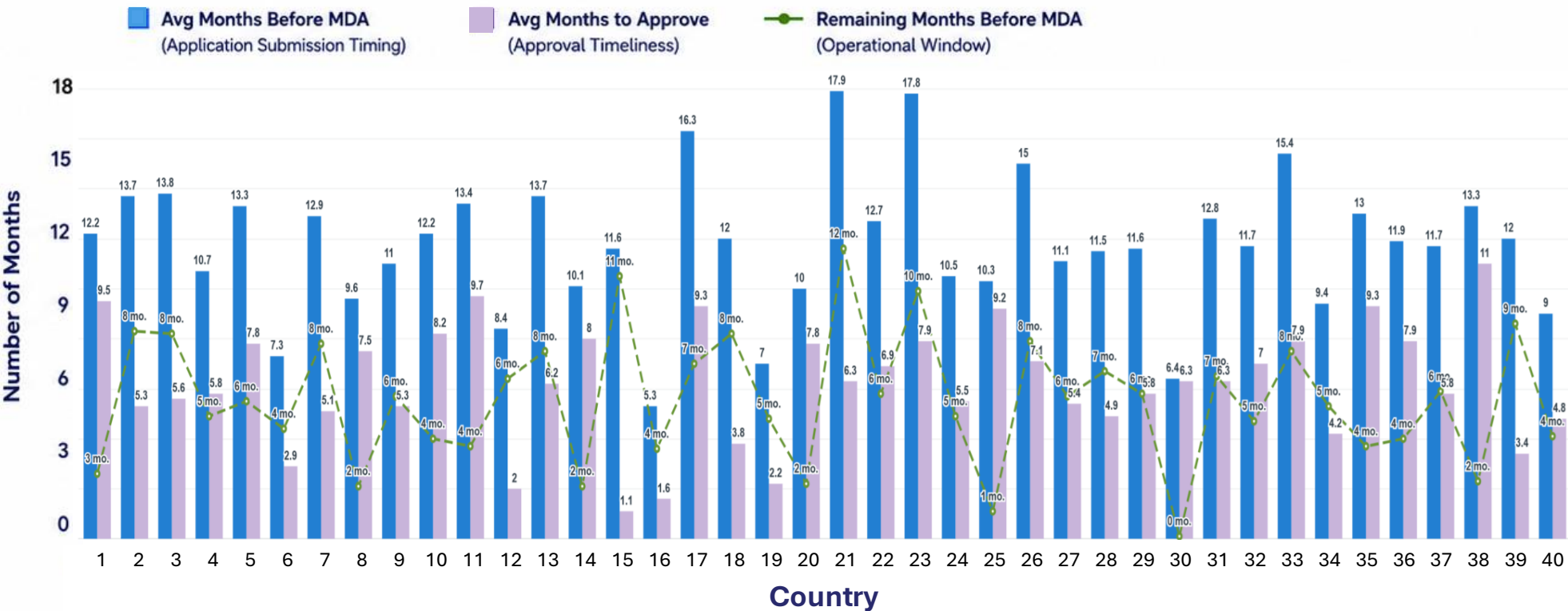
The difference between application submission timing and approval duration determines how much operational time remains before MDA implementation.

AFRO Application Timing and Remaining Operational Window Before MDA

Finding #1: Submission Timing Varies Significantly



Earlier application submission creates more time for review, planning, funding confirmation, inventory verification, and coordination before implementation.



WHAT THIS TELLS US



WIDE VARIATION

Countries submitted applications from 5 to 17.9 months before MDA. This variation significantly impacts planning flexibility.



MORE TIME, MORE FLEXIBILITY

Earlier submission provides more time for technical review, funding confirmation, inventory checks, and coordination.



LATE SUBMISSION, HIGHER RISK

Submitting closer to MDA reduces the time available for preparation and increases the risk of operational challenges.



KEY TAKEAWAY: Earlier application submission creates more time for planning and coordination, which strengthens the entire downstream process.

AFRO Application Timing and Remaining Operational Window Before MDA

Finding #2: Approval Timelines Consume Valuable Planning Time



Efficient approval timelines preserve valuable operational time for implementation preparation and downstream supply chain activities.

KEY INSIGHTS



APPROVAL TIMELINES VARY

Approval timelines range from 1 to 9 months across countries. Longer approvals consume valuable planning time.



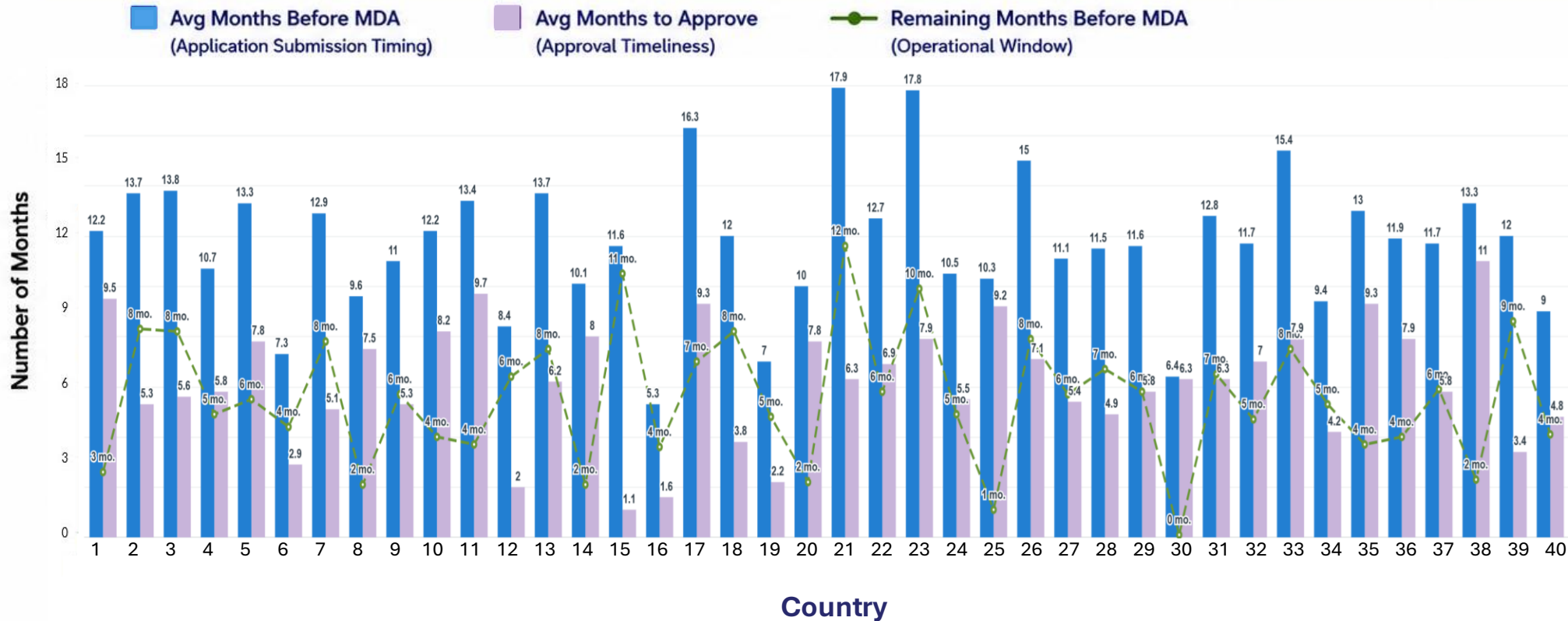
TIME CONSUMED = REDUCED FLEXIBILITY

Every additional month in the approval process directly reduces the time available for preparation before MDA.



EFFICIENCY CREATES FLEXIBILITY

Efficient approvals preserve operational time for manufacturing, shipment planning, customs, and implementation readiness.



KEY TAKEAWAY:

Shorter approval timelines preserve more operational time, enabling better preparation, risk management, and successful implementation.

AFRO Application Timing and Remaining Operational Window Before MDA

Finding #3: Operational Windows Drive Programme Readiness



Larger operational windows provide greater flexibility to manage risks, absorb disruptions, and maintain implementation timelines.

KEY INSIGHTS



MORE OPERATIONAL TIME = GREATER FLEXIBILITY

Larger windows allow programmes to manage risks, address issues early, and stay on track.



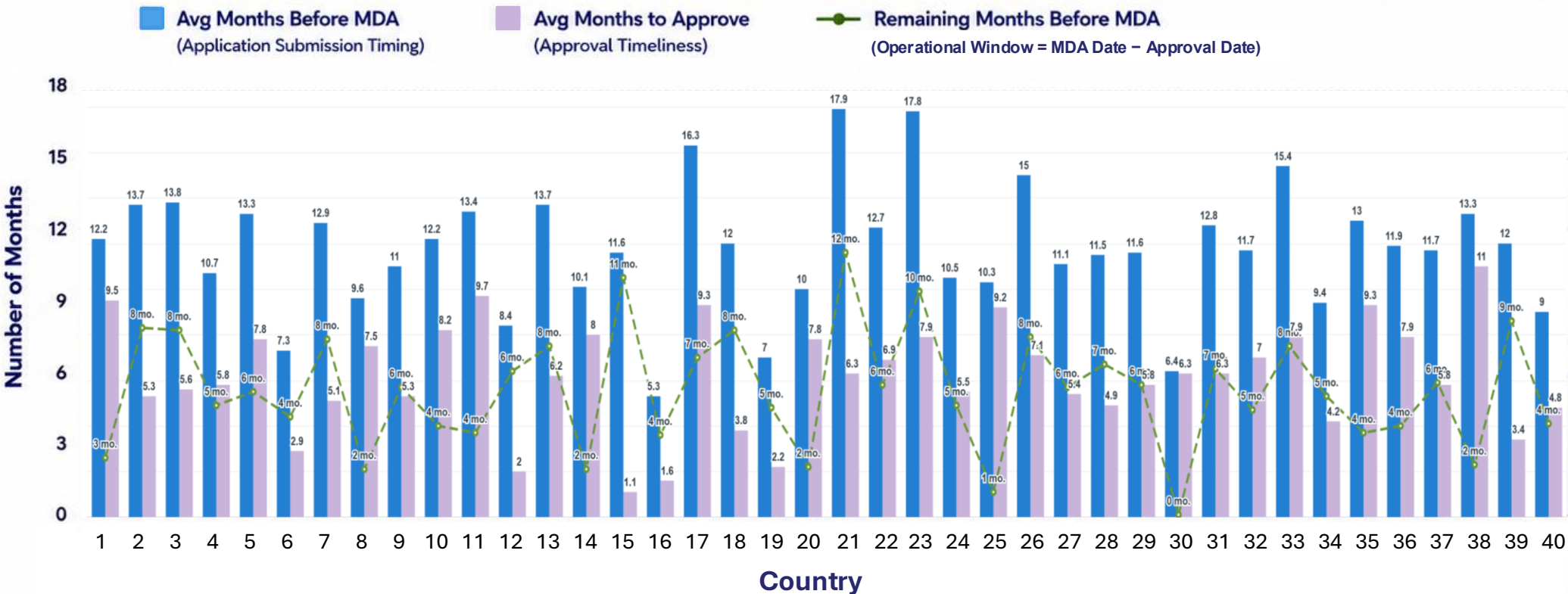
RESILIENCE TO ABSORB DISRUPTIONS

More time provides cushion to respond to unforeseen challenges such as shipment delays, customs issues, or funding gaps.



STRONGER PROGRAMME READINESS

Adequate operational windows support better coordination, complete preparations, and successful MDA implementation.



KEY TAKEAWAY:

A larger operational window before MDA leads to stronger programme readiness, greater resilience, and higher likelihood of successful implementation.

Key Takeaways from Operational Window Analysis

1



Submitting Sooner

Enhanced flexibility
throughout the planning phase

2



Accelerated Approval Cycles

Expanded capacity
across operations

3



Extended Operational Windows

Greater resilience built
into implementation timelines



Submission Timing + Approval Efficiency = Operational Readiness

Common challenges in completing JAP



ISSUE



Epidemiological Data

Late availability of impact assessment results.



Implementation of Impact Assessments

Delay in conducting impact surveys.



Data Processing Capacity

Limited use of modern data tools.



CONSEQUENCE



Inadequate prevalence data hampers informed decisions on PC implementation



MDA based on outdated data (e.g., 10+ rounds).



Poor quality of submissions, long review cycles.



SOLUTIONS



Support countries in reviewing and analysing reported data for accuracy/completeness.



Advocate partner support and build local capacity.



Capacity building and peer learning. Use of AI tools.



Bottom line: Addressing these challenges through stronger data systems, timely assessments, and capacity building will improve evidence quality, support better decision-making, and accelerate JAP approval.

Common challenges in completing JAP



Why It Matters

Accurate data and strong analytical capacity are essential for:

- ✓ Reliable medicine forecasts
- ✓ Accurate treatment targets
- ✓ Timely JAP approval
- ✓ Effective programme planning
- ✓ Successful MDA implementation



ISSUE



Demographic Data

Lack of recent census data.



Medicine Inventory & Reconciliation

Discrepancy between reported and expected stock.



Availability of funds for MDA

Medicine donation subject to secured funding for MDA.



CONSEQUENCE



Over/under procurement of medicines.
Over/under estimation of treatment coverage.



Delays in JRSM approval.



Delayed medicine procurement.



SOLUTIONS



Data Review & Validation

Use validated projections and improve collaboration.



Inventory Systems & Supervision

Improve inventory systems and supervision.
In-country support missions.



Funding & Local Capacity

ESPEN IU Planner.
Advocate partner support and build local capacity.

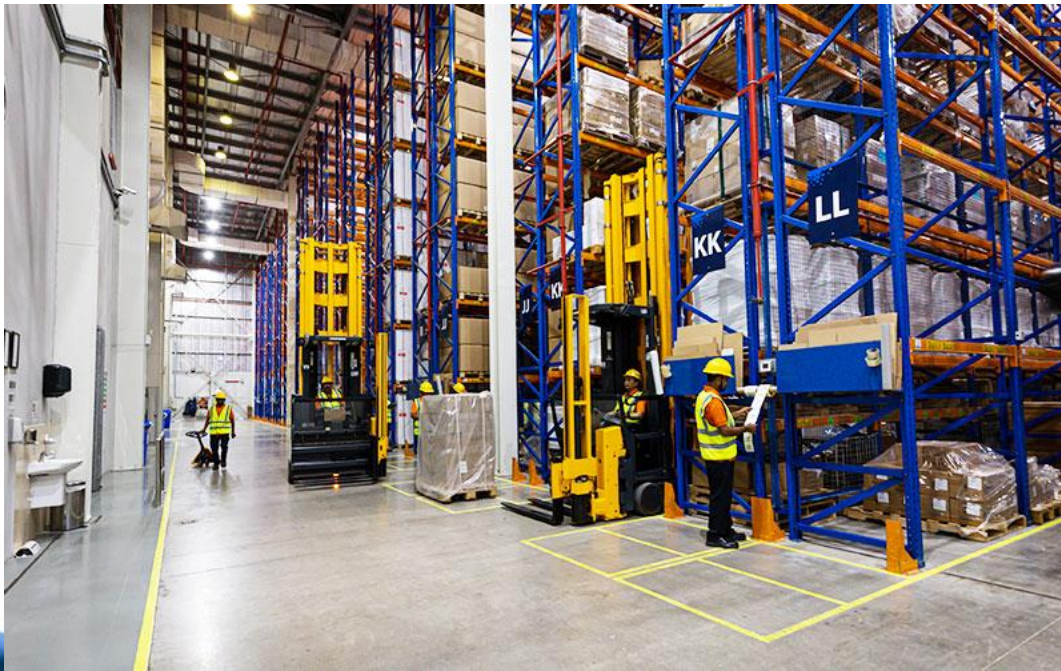


Key Message: Data quality challenges often originate long before the JAP is submitted. Strengthening data systems, impact assessments, inventory management, and analytical capacity improves decision-making and accelerates JAP approval.

THANK YOU



NTD-PC Medicine Inventory & its reconciliation



Anh Tuan LE
NTD/PC Supply Chain Officer
WHO/HQ - Geneva

Contents

- Theoretical Balance
- Unaccounted Issues
- Medicine Inventory & its reconciliation
- Key reporting parameters
- Opened Bottles
- Q & A



A typical scenario – Country A	Qty (tabs)
1. Country A submitted 2025 JRSM, requesting ALB for LF to treat 12M people	12M



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4. Reported a remaining balance of 1M tabs. <i>Receipts from the recipient districts available</i>	1M

JRF Inventory Logic: The Golden Equation



Previous Year's Balance.

Opening stock at the beginning of the reporting period.
(Do NOT include newly received stock here).



Medicines newly arrived during the reporting period.



Medicines actually used during implementation and quantities transferred out.



The final count after implementation.

Today

December 31st

Theoretical Balance & Unaccounted Qty

- | | | |
|----|------------------------------------|-----|
| 1. | Previous Year's Balance | 0 M |
| 2. | Receiving Qty for the current year | 10M |
| 3. | Reported Treated People → Tabs | 7M |
| 4. | Transferred Qty | 0 M |

A. **Theoretical balance** = $(1 + 2) - (3 + 4)$

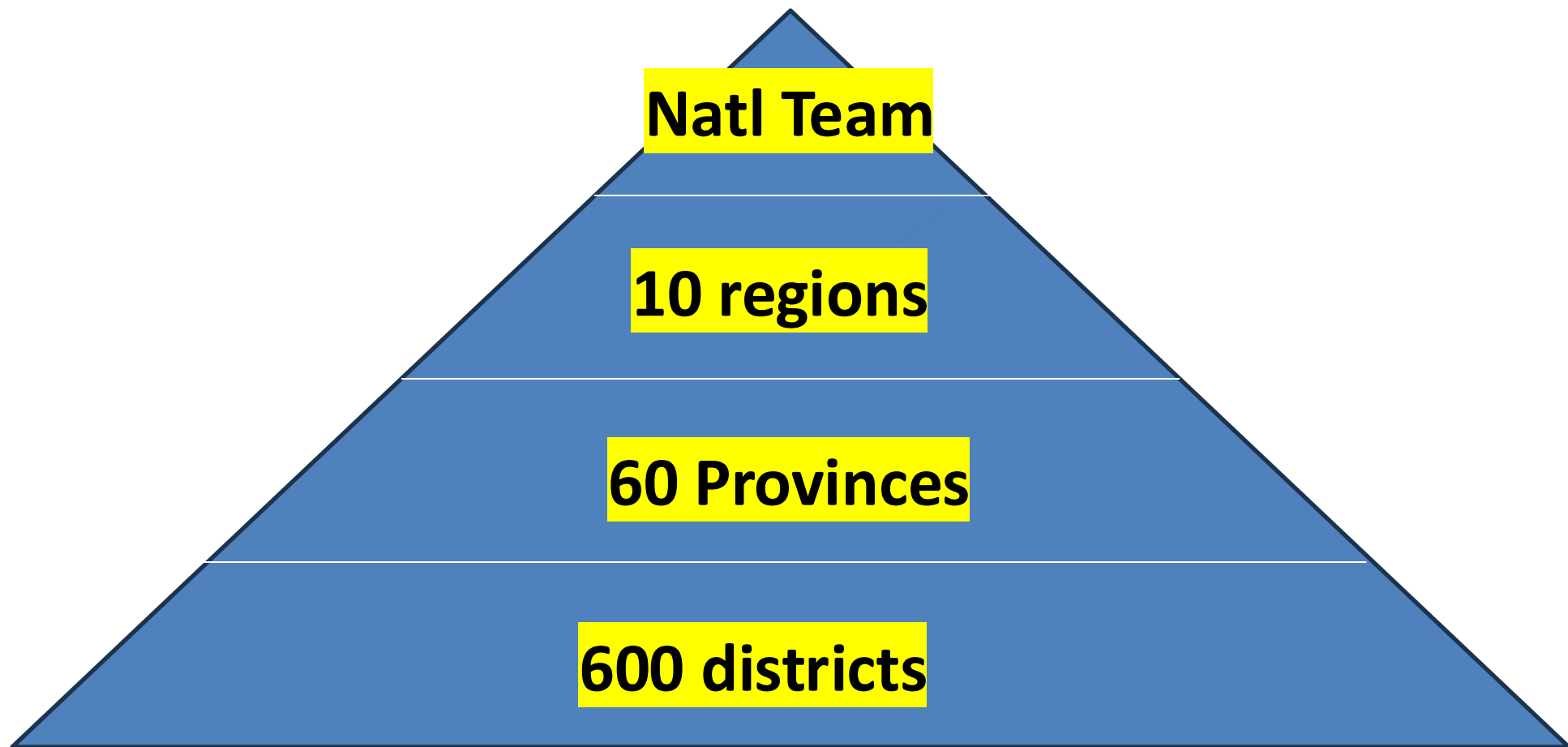
B. **Reported balance**: actual Qty reported from the field.

Unaccounted Qty = $(A) - (B)$

The above example, it is $2M/10M = 20\%$

Why it happened?

- **Main reason:** the **Treatment** & **Inventory** data are not put line by line → very challenging for the District Officer to compare & identify the GAP.
- Unaccounted qty is piling up from district, to province/state, till national level, and the NTD National Team is almost unable to fix it.
- How to put them line by line?



10-key Reporting Parameters

- Previous Year's balance
- Receiving Qty of the current year
- Dispatching Qty to the Field
- Distribution (Tx) Qty
- Reported expired/lost/transferred Qty
- Theoretical & Actual Stock → GAP
- Forecasted for next year

ALL these parameters must be in the same line/same page → facilitate an easy monitoring/ double-check

10-key Reporting Parameters

- It can be excel-based, software-based, or even as simple as paper-based reporting form.
- Not replacing JRF/ not an exhaustive list / not replacing the current reporting system

In fact, it enables NTD National Team to **systematically collect both Tx & inventory data line by line from sub-district, to district, then provincial/state, and up to national level**

It systematically helps

- ✓ Collect the actual stocks in comparison with the theoretical stocks at each level. *Minimize the unaccounted qty → speed up JRSM clearance*
- ✓ Collect the most accurate distribution/Tx data → speed up JRF clearance
- ✓ Tracing the dispatched medicines if needed
- ✓ Minimizing the expired/lost qty
- ✓ **Enable the focal point at each level to proactively identify this GAP and actively solve it** (rather waiting until WHO to flag it, and passively run after it)

Two Reconciliation Examples

- 1. Nigeria:** my in-person mission
 - 25M ALB/MEB tabs unaccounted
 - Virtual district trips
 - After 4 working days, retrieved 15M ALB/MEB tabs

- 2. Nepal:** my virtual mission
 - 6M tabs unaccounted
 - After one-week virtual check with all recipient districts (via provincial focal points): 3M tabs retrieved

Opened Bottles

- No bottle size that fits with most of the schools' pupil number.
- School A has 350 children $\rightarrow 350 \times 2 \text{ tabs/child} = 700 \text{ PZQ tabs}$. We need to give them one bottle of 1k tabs.
 $1\text{k} - 700 = 300 \text{ tabs left-over (30\%)}$
- School B has 250 children $\rightarrow 250 \times 2 \text{ tabs/child} = 500 \text{ PZQ tabs}$. We still need to give them one bottle of 1K tabs.
 $1\text{k} - 500 = 500 \text{ tabs left-over (50\%)}$

We are not allowed to give such a huge left-over to health facilities for individual Tx

Opened Bottles

Suggestion:

- Re-packaging to zip plastic bags fitting with each school's children number

IF NOT allowed:

- Move the opened bottles to other schools for using it up
- Keep the opened bottles at the lowest possible quantity (Above scenario, one bottle for 2 schools, etc)

Q & A



Country Practical Exercise

Group Exercise: Inventory Reconciliation Exercise

1. Read the Scenario

1. Follow the steps

1. Answer the questions



30 minutes

Steps to completing and reviewing the Excel Summary Report

Step 1: Open the Excel tool (Summary Reporting Form) on your laptop. Find the tab labelled “District 1”.

This should be blank. Data needs to be entered into the blank grey columns for PZQ and MEB.

Instruction
National
Region
District 1
District 2

AutoSave Off
Summary Reporting Forms_PZQ-MEB Exercise BRZ_B... • Saved to this PC
Search

File
Home
Insert
Draw
Page Layout
Formulas
Data
Review
View
Automate
Help
Acrobat

Clipboard

Paste

Font

Calibri 14

B I U A⁺ A⁻

Alignment

Number

\$ %

Styles

Conditional Formatting

Format as Table

Cell Styles

Cells

Insert

Delete

Format

Editing

Sensitivity

Add-ins

Adobe Acrobat

Create PDF and Share link

Create PDF and Share via Outlook

D24

=SUM(D12:D23)

Post MDA NTD PC Medicine SUMMARY TABLE - District Level																				
		Medicines Dosage																		
		PZQ	MEB	ALB	IVM	DEC														
DISTRICT LEVEL:		District 1																		
Date of MDA:		1st to 14th April 2026																		
Disease:		SCH-STH																		
Medicines:		PZQ MEB																		
Complete this section																		Calculated - DO NOT EDIT		
Health Facility Name	Remaining Stock from Previous MDA		Received Qty		No Treated People		Qty transferred to another Health Facility		Expired/Lost Qty		Actual Balance		Nearest Expiry Date		Total Stock for the Year		Distributed Qty		Theoretical Balance	
	PZQ	MEB	PZQ	MEB	PreSAC	SAC	PZQ	MEB	PZQ	MEB	PZQ	MEB	PZQ	MEB	PZQ	MEB	PZQ	MEB		
Formula	a	b	c	d	e	f	g	h	i	j	k	l			m=a+c	n=b+d	o=f*2	p=(e+g)*1	q=m-o+g	r=n-o
1															0	0	0	0	0	
2															0	0	0	0	0	
3															0	0	0	0	0	
4															0	0	0	0	0	

Inventory Reconciliation Exercise

Step 2: Using the paper-based HF summary reports on the next few pages. Find the data required to complete the Excel summary report. Type the data from the health facility summary into the Excel District 1 sheet.

Paper Form for data collection at the health facility level – Tabulated summary

FORM FOR SUMMARIZING PREVENTIVE CHEMOTHERAPY TREATMENTS

Health Facility Name: Health Facility 1... District: District 1... Round of treatment: 1...

NAME OF REPORTING UNIT	Praziquantel				Mebendazole			
	Number of tablets received	Number of tablets used	Number of tablets wasted	Number of tablets returned	Number of tablets received	Number of tablets used	Number of tablets wasted	Number of tablets returned
1 CDD 1	1000	1000	0	0	1000	100	3	287
2 CDD 2	1000	840	5	155	1000	480	10	510
3 CDD 3	1000	550	0	450	1000	400	0	600
4 CDD 4	1000	850	0	140	1000	960	0	420
5								
6								
TOTAL	4000	3250	5	745	4000	2160	13	1827

NAME OF REPORTING UNIT	Number of Persons Treated								
	Pre-school age children (1-4 years)			School age children (5-14 years)			Adults (≥15 years)		
	Male	Female	TOTAL	Male	Female	TOTAL	Male	Female	TOTAL
1 CDD 1	100	100	200	242	258	500	0	0	0
2 CDD 2	35	25	60	212	208	420	0	0	0
3 CDD 3	67	59	126	124	148	272	0	0	0
4 CDD 4	68	74	142	213	216	429	0	0	0
5							0	0	0
6							0	0	0
TOTAL	270	258	528	791	630	1421	0	0	0

Total number of reports expected: 4 Total number of reports received: 4

Percentage of return of reports: 100%

Person reporting: Mary

Reporting date: May 1st 2026

Paper Form for data collection at the health facility level – Tabulated summary

FORM FOR SUMMARIZING PREVENTIVE CHEMOTHERAPY TREATMENTS

Health Facility Name: Health Facility 2... District: District 1... Round of treatment: 1...

NAME OF REPORTING UNIT	Praziquantel				Mebendazole			
	Number of tablets received	Number of tablets used	Number of tablets wasted	Number of tablets returned	Number of tablets received	Number of tablets used	Number of tablets wasted	Number of tablets returned
1 CDD 1	2000	2000	0	0	2000	1450	0	550
2 CDD 2	3000	3000	0	0	2500	2200	0	300
3 CDD 3	5000	5000	0	0	4000	3500	0	500
4 CDD 4	2000	2000	0	0	1500	1500	0	0
5 CDD 5	3000	2400	0	400	2500	2000	0	500
6								
TOTAL	15000	14000	0	400	12500	10650	0	1850

NAME OF REPORTING UNIT	Number of Persons Treated								
	Pre-school age children (1-4 years)			School age children (5-14 years)			Adults (≥15 years)		
	Male	Female	TOTAL	Male	Female	TOTAL	Male	Female	TOTAL
1 CDD 1	234	261	495	467	474	941	0	0	0
2 CDD 2	367	332	699	784	678	1462	0	0	0
3 CDD 3	432	554	986	1215	1265	2480	0	0	0
4 CDD 4	215	285	500	501	487	988	0	0	0
5 CDD 5	300	405	705	650	630	1280	0	0	0
6							0	0	0
TOTAL	1548	1847	3395	3622	3642	7264	0	0	0

Total number of reports expected: 5 Total number of reports received: 5

Percentage of return of reports: 100%

Person reporting: Samuel

Reporting date: 27th April 2026

Steps to completing and reviewing the Excel Summary Report

Step 3: Review the data that is calculated in the blue columns.

Calculated - DO NOT FILL											
Date	Total Stock for the Year		Distributed Qty		Theoretical Balance		GAPs		% unaccounted or wasted		Remarks
MEB	PZQ	MEB	PZQ	MEB	PZQ	MEB	PZQ	MEB	PZQ	MEB	
	m=a+c	n=b+d	o=f*2	p=(e+f)*1	q=m-o-g-i	r=n-p-h-i	s=q-k	t=r-l	u=s/m*100	v=t/n*100	
	0	0	0	0	0	0	0	0	#DIV/0!	#DIV/0!	
	0	0	0	0	0	0	0	0	#DIV/0!	#DIV/0!	
	0	0	0	0	0	0	0	0	#DIV/0!	#DIV/0!	
	0	0	0	0	0	0	0	0	#DIV/0!	#DIV/0!	
	0	0	0	0	0	0	0	0	#DIV/0!	#DIV/0!	
	0	0	0	0	0	0	0	0	#DIV/0!	#DIV/0!	

Step 4: Now look at the regional tab; other example districts have been prefilled. Review the data across the districts and note where there is a high percentage of unaccounted or wasted medicines.



Countries Provided Feedback On Site

Emphasizing the concept through practical exercises

Reporting date: May 1st 2026

[illegible][illegible]

THANK YOU



Strengthening Inventory Reconciliation during campaign/MDA integration

NTD Supply Chain Workshop
15th to 19th June, 2026
Tanzania

Presented by



Presentation Outline

Introduction

Evolution of NTD Data Management

NTD Supply Chain System Design

2025 NTD Supply Chain Gaps

Reconciliation with Digital innovation

Integration efforts & Areas for improvement



Introduction

NTD Health commodities reconciliation involves

Auditing

Verifying

Matching

the actual physical count of donated medicines and health supplies against what is recorded in logistics databases or tracking sheets.

$$\text{Theoretical Balance} = \{\text{Opening Balance}\} + \{\text{Quantity Received}\} - \{\text{Quantity Used}\} - \{\text{Expiries/Losses}\}$$

Evolution of NTD Data Management

Before 2024

NTD health commodities were being redistributed back to Council Level from health Facilities

- Ordering was done by council on behalf of HFs
- It was a push system- low accountability at HFs
- It was costly

2024

SC SOP was developed, the reverse logistics not practiced and health facilities were tasked to order directly from MSD

- Health Facilities place orders to MSD
- MSD distributed NTD HC directly to health facilities
- Reconciliation is done at HF level
- information sent to councils and beyond

Transition -2025 to 2026

Facilities started to align ILS ordering cycles with MDAs plan and place orders accordingly

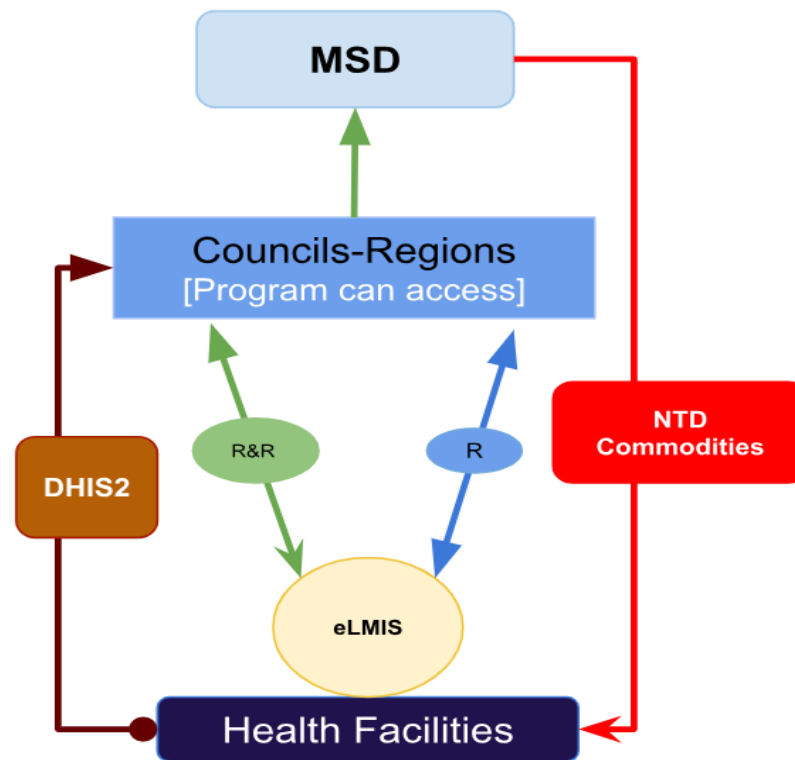
- Misalignment between ILS ordering cycle and NTD commodities availability at MSD
- Poor data visibility from health facilities
- Demand for digital data enhancement

2026 updates

DHIS2 - MDA and SC data modules were prepared. Personnel trained and partial access granted to some

- HFs are now filling supply chain data into DHIS2 - easy to reconcile at any level
- Program can access the data and identify errors for targeted supervision - Cost effective

NTD Supply Chain System Design



Councils: - Normally sends critical data for R&R preparations

- Reporting alerts -when facilities should request commodities
- Population target for expected MDA to be conducted
- Number of MDAs to be performed per year
- Previous performance reflections

Program: - Monitors the communication and intervenes whenever necessary

- Validation of the population targets
- Following up with MSD on deliveries
- Requesting facilities to update their LMIS tools and DHIS2
- Monitoring stock levels and plan for distributions among HF's whenever needed

Health Facilities : -They are the main Data Generators

- As per SOP they are required to send R (reporting stock on hand) every month
- As per SOP, they are required to send R&R following normal ILS ordering cycle but reflecting on at least two months prior to following MDA

NTD SC Data gaps in 2025

Praziquantel 600mg - **3,796,000**

Albendazole 400mg - **3,722,800**

Ivermectin 300mg - **20,867,500**

These were the
supplies delivered
to health facilities
by MSD between
January and
October 2025

Reported R - 100%

Reported R with NTD - 26% HFs

Reports missing NTD data- 74%

NTD SC Reconciliation with digital innovation

8TH JUNE 2026-DHIS2 Records

Item	Received from MSD	Beginning Balance { <i>Total Qty before MDA</i> }	Consumption	Theoretical Balance { <i>auto calculated in DHIS2</i> }	Physical count - { <i>Stock on hand after MDA</i> }	People served	Reported Ratio Client:Medicine	Standard consumption ratio Client:Medicine
Praziquantel 600mg	6,169,422	6,247,878	4,488,301	1,618,508	1,368,940	3,566,639	1:0.8	1:2
Albendazole 400mg	4,177,968	4,273,249	3,326,119	852,946	804,167	4,496,429	1:1.4	1:1
Ivermectin 300mg	2,527,986	2,919,492	2,404,451	440,743	543,015	1,280,211	1:2	1:3

NTD SC Reconciliation: REFLECTION ON DATA

Praziquantel Ratio

- 1 client to 0.8 tablet is almost 1:1 ratio while standard is 1:2

After thoroughly review, it seems most of the clients were at the age of receiving 1 tablet instead of 2

Albendazole Ratio

- 1 client to 1.2 instead of 1:1 suggests more tablets consumed per client

These reflects on medicines dispensed without proper records but were counted as consumed in campaign

Ivermectin Ratio

- Standard ratio is 1:2.7 but the records so far reflects 1:2

The current assessment suggest that, Oncho MDA is ongoing and the data are still captured, it is believed to level when all data are keyed in

The consumption ratio *does not* indicate any major concerns so far

Progressing well

NTD SC Data reconciliation assumptions

HF staff keyed in the right data into DHIS2

- Received Qty plus the Qty at HF
- Conducted Physical count after MDA
- Recorded well No of People Served

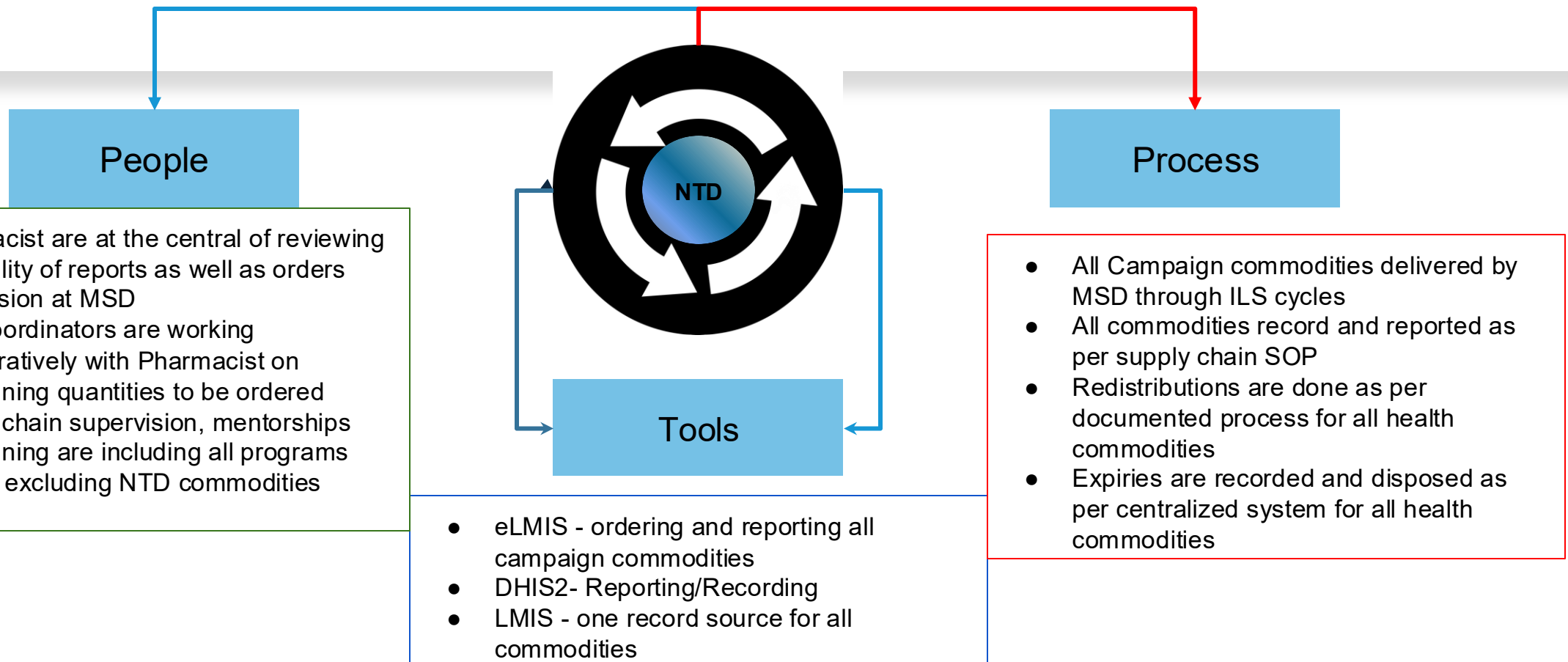
Quantities received as indicated in MSD delivery note

- Primary document relied upon is MSD delivery note before verification
- Any Discrepancy will be detected later in the root cause analysis

Other Assumptions

- HF staffs adhere to the SC SOP prescribed standards for ordering, receiving and recording
- R&R Quality check done correctly at council level to filter and reject requests from non eligible requesters as well as reviewing the quality of the information
- HFs having credentials to access the DHIS2 or work closely with councils staffs to key in right data
- HFs record the redistributions conducted among the health facilities

NTD Supply Chain Reconciliation



Steps taken to improve inventory reconciliation

Pre MDA initiatives

1. Confirming the receipts of health commodities, population target and other logistics
2. Remind on updating data in DHIS2
3. Refer to lessons learned from Previous MDAs

During MDAs

1. Follow up on commodities availability and facilitate any redistribution required
2. Follow up on DHIS2 weekly updates to monitor progress
3. Record lessons learned from best performing HFs

Post MDAs

1. Follow up on data quality ratio especially consumption ratio
No. of clients vs qty consumed
2. Analyse the remaining quantities - *fit for next MDAs or should be redistributed?*

- Targeted site visits are conducted as per findings from the data collected due to funds availability
- Lessons learned recorded and shared

Inventory reconciliation and campaign integration

Pre and During iMDA

- For integrated MDAs- Campaign commodities are ordered and delivered as one package: *Availability of complete package determines starting date*
- Trainings are conducted jointly: *Expectations are set for supply chain actors*
- Monitoring and data uptake is for all commodities using same tool

Post MDA Reconciliation Challenges

- Accounting for specific disease consumption has been a challenge: *It happened when were to account Albendazole quantities consumed for STH and those consumed for Nutrition MDA (iMDA experience -Arusha-2025)*
- Concurrent interventions needs all commodities to be available, we experienced some delays on availability of Azithromycin for iMDA-(Arusha-2025)

Areas for improvement

Management information systems

- Thoroughly review of **R&Rs** at council level, to filter out not eligible orders and review the quality of the quantities requested
- Modification of **eLMIS** to integrate ordering formula with target population data
- Integration of eLMIS and **DHIS2**: - *Data triangulation improves quality of decisions*

Quality Management system: **SOP usage**

- Reinforcing the use of stipulated supply chain procedures in the NTD supply chain SOP for PC Medicines as they require special attention on both ordering, receiving, distributing and reconciling.
- Conduct data driven supervisions: productive use of eLMIS & DHIS2

Digital Health : Continuous improvement

- Exploring existing established systems in the country to enable data capturing from community level- for both community and schools MDAs (reducing paperwork)
- Integrating survey data into the existing DHIS2 tool to enable multi year quantification, refining target population which in turn reduce wastage and improve resource use

THANK YOU



Strengthening Inventory Reconciliation during campaign/MDA integration

NTD Supply Chain Workshop
15th to 19th June, 2026
Ghana

Presented by



Introduction

Background

Challenges

Areas of improvement

Campaign Integration

Recommendation



Background 1/3

Status of Preventive PC NTDs

- Ghana is endemic for all 5 NTDs which employ MDA for their control
- LF is endemic in 117 out of 261 districts
 - 114 districts have interrupted transmission
 - 3 districts remain
- Onchocerciasis is endemic in 149 districts
- Trachoma is endemic in 4 regions (NR, NE, UW, SA) - 40 districts
- SCH & STH are endemic in all districts and regions

Background 2/3

- Donated medicines are received at the central medical stores
- The national team collect data from the respective regions and districts for quantification before medicines are sent
- NTD medicines are transported from CMS through RMS to the District
- CHOs distribute the medicines to Volunteers
- NTD focal persons collect medicines base on allocation to the Health Centers and CHPS compounds

Background 3/3

SIRV

waybill

Control cards

Bin cards

Tally CardS

Tally sheet

Past challenges with inventory tracking and reconciliation

- Inaccuracies in the quantification at the lower level due to unstable population figures
- Inaccurate tallies of distributed medicines making reconciliation difficult
- Lack of logisticians at the district and sub district level to coordinate in the retrieval of medicines
- Poor supervision at the sub regional levels on logistics
- Regional medical stores (RMSs) had to find means to pick up medicines from the central level
- Inadequate training on inventory management
- Expired medicines were not properly disposed of and documented

Steps taken to improve inventory reconciliation 1/3

- Currently NTD medicines have been integrated in to NSCMS and product can be requested through the Ghana Integrated Logistics Management Information System (GhiLMIS)
- DHIMS2 is linked indirectly to supply chain dashboards by validating medicine distribution with actual treatment numbers
- **Ghana NTD MDA APP**
 - This app aggregates NTD medicine data during MDA , by Community, Sub districts and district level
 - Real-time visibility of stock availability and movements
 - Alerts for potential stock outs
 - Performance trends of communities, Sub District and District
 - The dashboard supports high-level decision-making and helps align medicines with population needs during MDA.



Steps taken to improve inventory reconciliation 2/3

GHNTDP

Export Data Dashboards Interventions Users Emmanuel Nyarko

Total number of households



91126

Number of beneficiaries



361476

beneficiaries dosed



317692

Beneficiaries undosed



43784

Albendazole used



220083

Albendazole wasted



16792

Ivermectin Used



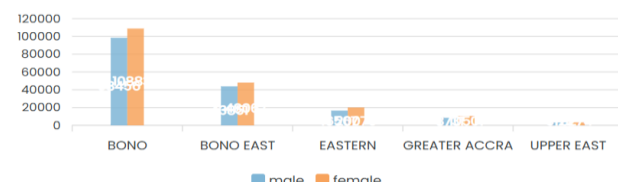
1014733

Ivermectin wasted

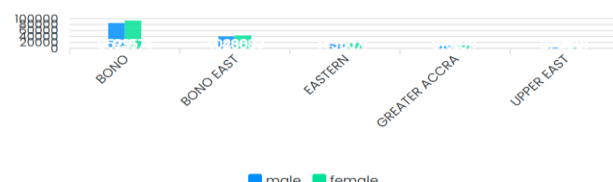


3577329462

Number of beneficiaries registered by gender



Number of beneficiaries dosed by gender



Ghana Health Service
Neglected Tropical Diseases Program
Mass Drug Administration (MDA) Reporting Form

Region:..... District:..... Sub-District:.....
MDA Round:..... Year:..... Total No. Communities:..... Total No. Schools:.....
MDA Type: ☐ Community Based ☐ School Based MDA Target ☐ LF ☐ Oncho ☐ SCH ☐ STH

Disease Conditions	No. of Endemic Communities	No. of Communities Treated	No. of School	No. of Schools Treated
Lymphatic Filariasis				
Onchocerciasis				
Schistosomiasis				
Soil Transmitted Helminthiasis				

Mass Drug Administration Registration and Treatment Data

Disease Conditions	Population Registered/Enrolled			Population Treated		
	Male	Female	Total	Male	Female	Total
Lymphatic Filariasis						
Onchocerciasis						
Schistosomiasis (SAC In School)						
Schistosomiasis (SAC Out of School)						
Soil Transmitted Helminthiasis						
Schistosomiasis (Adult)						

Reasons For Non Treatment

Pregnant	Mothers breastfeeding children < 1 week	Seriously Sick		Under Height		Refused		Absent	
		Male	Female	Male	Female	Male	Female	Male	Female

Clinical State

Suspected Hydrocoele	Elephantiasis	Blindness	Skin Disorders

Adverse Drug Reactions

Adverse Drug Reactions Reported	Adverse Drug Reactions Treated	Severe Adverse Drug Reactions (SADRs)

Outcome of SADRs

Deaths	Paralysis	Incapacitation	Others

Drugs Management

	Alb 400mg (200Tabs)	Alb 400mg (100Tabs)	IVM 3mg (500 Tabs)	PZQ 600mg (1000 Tabs)
Tablets In stock				
Tablets Received				
Total Tablets Available				
Tablets Used				
Tablets Wasted				
Tablets Remaining				
Unopened Bottles				
Tablets Expired				

Health Workers, Teachers and Community Drug Distributors (CDDs) for MDAs

Category of Personnel	Male	Female	Total
Health Workers Trained			
Health Workers Used in MDA			
Teachers Trained (School MDA)			
Teachers participated in School MDA			
Community Drug Distributors (CDDs) Trained			



Online Dashboard

Albedanzole wasted

0

Albedanzole used

1

Ivermectin wasted

105

Ivermectin used

1628

Moxidectin used

0

Moxidectin wasted

0

Treated

592

Untreated

130

Males Treated

320

Females Treated

272

Drugs Management

	Alb 400mg (200Tabs)	Alb 400mg (100Tabs)	IVM 3mg (500 Tabs)	PZQ 600mg (1000 Tabs)
Tablets In stock				
Tablets Received				
Total Tablets Available				
Tablets Used				
Tablets Wasted				
Tablets Remaining				
Unopened Bottles				
Tablets Expired				

Steps taken to improve inventory reconciliation 3/3

- Usage of accurate population data which helps in the quantification and forecasting
- Request through Ghilmis to service delivery point
- Entry of treatment data and medicine report into DHIMS2
- Availability of supply chain officers at every district
 - Reverse medicines from health workers and CDDs to the district and regional

Reconciliation and Data used

- Opening balance, quantity received ,issued, returned, wastage, expired and physical count
- Treatment or consumption data

Inventory reconciliation and campaign integration

Challenges

- Data entry errors
- CDDs using different medicines and registers simultaneously making it difficult to reconcile leftovers
- No Integrated tools to capture and reconcile medicines used

Advantages

- Utilizing medicines near expiry
 - Reduce cost associated with multiple service delivery points using varied transport options to collect logistics
-

Recommendations

- Frequent training on inventory management at all level of service delivery
- The use of electronic information management system
- Enforce adherence to reverse logistics
- The use electronic data capture

THANK YOU



Strengthening Inventory Reconciliation during campaign/MDA integration

NTD Supply Chain Workshop
15th to 19th June, 2026
Mozambique

Presented by





Introduction

The Central Medical Storage (CMAM) runs a centralized database system linked to the MACS/nSIMAM software applications deals with the storage and distribution of essential drugs and specific programs, including NTDs drugs;

Past challenges with inventory tracking and reconciliation

- The data is not visible to the Department of Disease Control and Prevention (DPCD) in real time, and can only be communicated an email under request
- During MDA the data collection is manual, intense and repetitive requiring many steps, and is subject to data entry errors
- The returned sealed bottles are recorded in Excel sheets, and not at N-SIMAM, and quite often the drugs are reported to DPCD when they close to expire

Steps taken to improve inventory reconciliation

- Step 1. CMAM is in process of providing their central data base access code to DPCD what will allow stock visibility
- Step 2. It is process Improving data collection quality by introducing DHIS2 during MDA
- Step 3. DPCD is interacting with CMAM in order to record returned sealed bottles at N-SIMAM
-

Inventory reconciliation and campaign integration

- During distribution and MDA the activities of integrated programs are complementary, and common resources are used: same teams, transportation, and DHIS2 is used for data collection in both programs
 - The timing for the MDA is reduced from five days to four days
 - However, the reverse logistics is not included in the integration campaign and funds are not available
-

Recommendations

- Use of DHIS2 for data capture by distributors during MDA;
- Make inventory visibility a reality until the last mile
- Introduction of medicines from reverse logistics into the nCMAM system;
- Ensure exclusive storage of donated drugs for NTDs

THANK YOU



PLENARY

LMIS Data Flow Mapping

Mapping the flow of the NTD Supply chain data

Presented by

Ssembajjwe Geoffrey, Sarah Andersson, Diane Ehoumi, WHO HSS



Why map the LMIS data flow?

1

The bottleneck is rarely data collection

It is the gap between data and action - where data slows, stops, or gets duplicated as it moves up the system.

2

Each country's flow is different

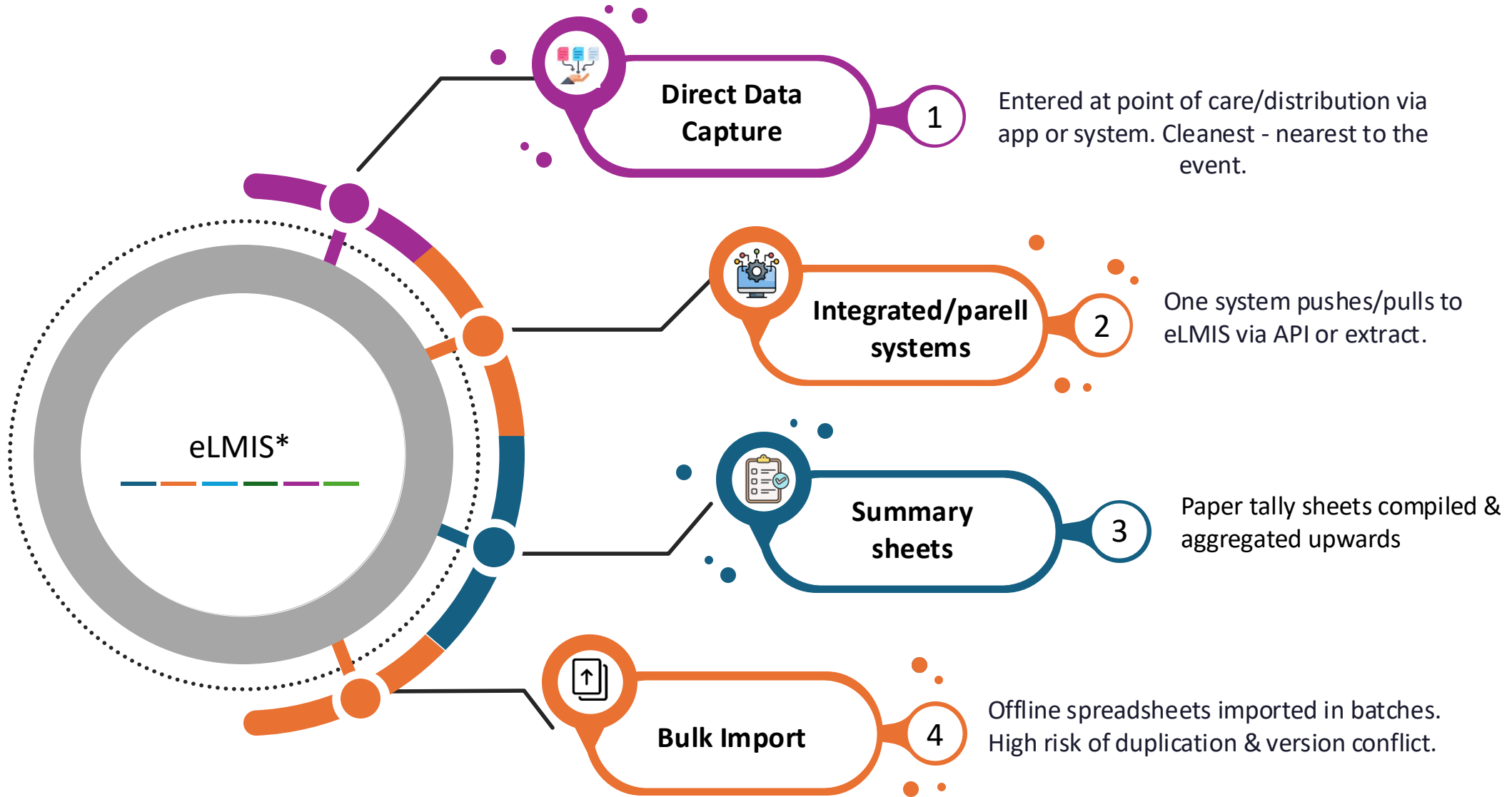
Mapping yours reveals the specific gaps and integration opportunities that matter for your programme.

3

A shared picture enables better decisions

A clear map helps your team, ESPEN, and partners see where to invest to improve data quality and use.

How data enters the LMIS - four common routes



Questions



Country Practical Exercise

Three ground rules

1

Map the current state, not the ideal

Capture what happens today - gaps and all. The honest flow is the useful one.

2

Follow the data all the way

Highlight where data is and not where it should be.

3

Highlight the gaps

Show where the gaps and the issues to resolve them – this is the point of the exercise.

Country Feedback Presentations

LMIS Mapping (Feedback Sample)

Flux de données pour les données sur les produits de base

Données relatives à la chaîne d'approvisionnement (stocks, expéditions, consommation, achats, prévisions)

#	Niveau	De (système / acteur)	Vers (système / acteur)	Type de données	Méthode de transfert	Fréquence	Format
1	Community	FKT / Agent Communautaire	feuille de comptage sur papier	consommation journalière de MDA	Mobile form or manual	Daily	digitalisé par sms type ou
2	Community	CSB / chef CSB	Excel (récapitulation des FKT)	stocks MDA - distribués	Email / file	Daily	Digital
3	District	data ou RMTN ou PhaGDis / Excel	Excel (récapitulation des CSB)	stocks MDA - distribués - médicaments MDA retournés	Email / file	Ad hoc	numérique
4	Région	data ou RMTN / Excel	Excel (recapitulation des districts)	stocks MDA - distribués - médicaments MDA retournés	Email / file	Ad hoc	numérique
5	National	data ou chaîne d'appro / Excel (recapitulation des	IA/D / IRS		Email / file	Ad hoc	numérique

Points clés – défis et lacunes identifiés

Défis/lacunes	Solutions possibles	Actions prioritaires	Prochaines étapes (mesures que l'équipe nationale mettra en œuvre au cours des 3 prochains mois)
DHIS2 pas fonctionnelle	mise à jour des éléments de données dans DHIS2 / Updating of data elements in DHIS2	contacter DEPSI pour intégrer tous les éléments de données logistique MTN	Dans les 3 prochains mois : Rappel et suivi des saisies sur DHIS2 / In the next 3 months: follow-up
insuffisance inventaire physique effectué -	Rappel du POS (Inventaire physique avant campagne et après campagne avec PV d'inventaire) / Reminder of the SOP (Physical inventory before campaign and after campaign with inventory report)	formation des Responsables (période d'inventaire, outils d'inventaire)	Dans les 3 prochains mois: suivi / In the next 3 months: follow-up
faible analyse et triangulation des données	mise en place de groupe de travail data, / setting up a data working group	opérationnalisation de GTT	Dans 3 prochains mois: renforcement de compétences du GTT

Contrôle de rapprochement – un produit de référence

Choisissez UN produit, UN niveau, UNE période récente. Pour chaque quantité ci-dessous, identifiez d'où provient le chiffre et indiquez si vous vous y fiez – pas besoin de chiffres réels. Répondez ensuite aux trois questions.

Produit de référence :	PRAZIQUANTEL	Niveau / période :	entrepôt de district, dernière campagne de MDA
Quantité dans l'équation des stocks	Quel système / quelle source contient ce chiffre ?	Données fiables ? (O / N / Partielle)	Si cela ne fonctionne pas, pourquoi ?
Solde d'ouverture	rapport d'inventaire physique post campagne	partielle	aucun comptage effectué lors de l'envoi du rapport / No count conducted when the report was sent
+ Reçu (distribué à ce niveau)	Bon de livraison du magasin central-PVRD	oui	
- Délivré / administré (traitements dispensés)	rapport de campagne	oui	
- Pertes / péremptions / ajustements / retours	rapport de campagne, rapport de stock, rapport d'inventaire physique	oui	
Chiffre attendu (d'après les calculs effectués)	rapport de stock réel	oui	
Inventaire physique (stock réel en rayon)	rapport d'inventaire post campagne et fiche de stock	oui	
Écart (stock prévu par rapport au stock physique)	rapport de stock réel	partielle	solde d'ouverture pas fiable / Opening balance not reliable

1. Où ces chiffres ne concordent-ils pas ? Lesquels se trouvent dans des systèmes différents qui ne communiquent pas entre eux ?

Les réceptions sont enregistrées dans Excel, les traitements dans Excel, l'inventaire sur papier dans la fiche de stock / Receipts are recorded in Excel, treatments in Excel, and the inventory on

non déclarée - quantité distribuée non enregistrée - double comptage entre les vs boîtes)

mpagne / No physical inventory carried out - use of leftover medication for other

niveau district (responsable de la gestion des intrants de santé) / Designate a single is (who is responsible for health supply chain management).

THANK YOU



Medicine Distribution Control Using ESPEN Collect

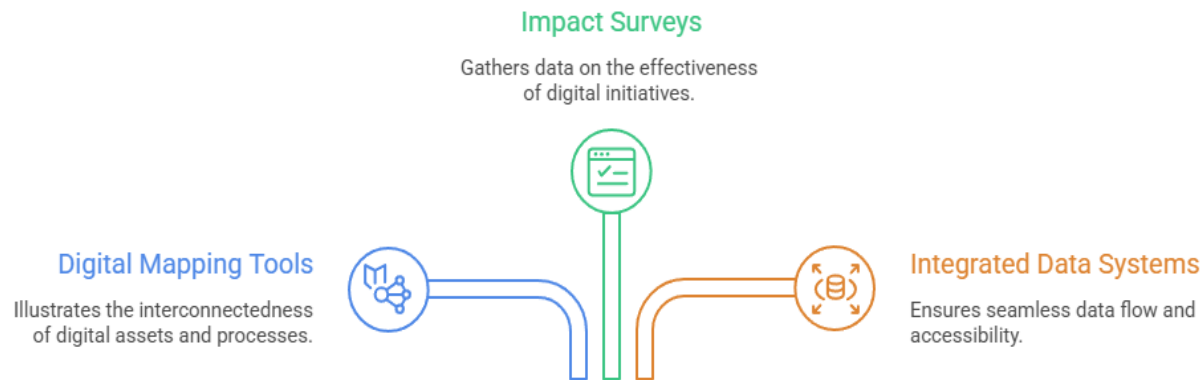
Dyesse YUMBA, ESPEN Collect Project Officer



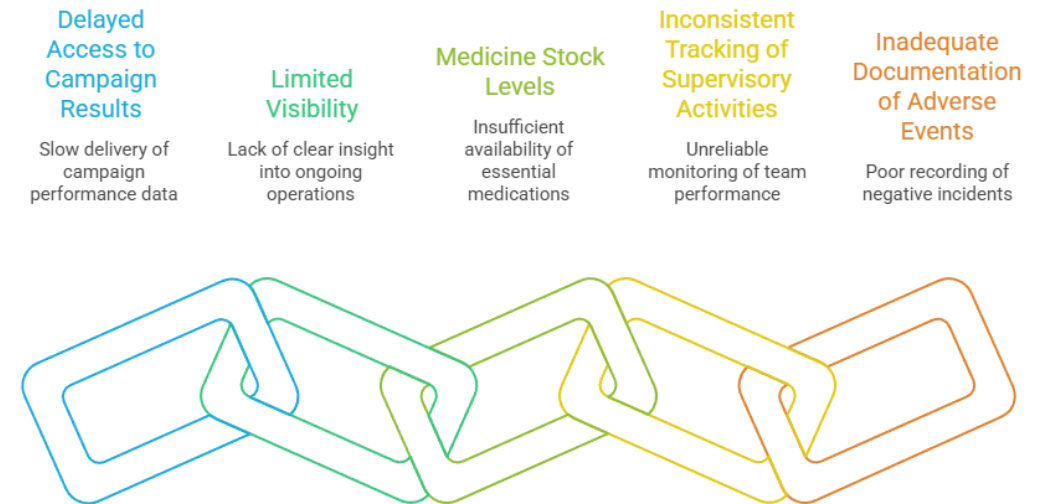
The Operational Gap in Treatment Campaigns

While digital mapping has established a strong foundation, and some countries have successfully digitalized their campaigns, many others still rely on fragmented systems and hybrid paper-based processes, leading to critical operational challenges in the field.

How to visualize the digital thread?



The Operational Gap



A Strategic Shift to Harmonized Health Intelligence

Addressing operational gaps requires moving from fragmented processes to a harmonized ecosystem capable of delivering real-time, integrated health intelligence.

Dimension	Fragmented Reality	Harmonized Ecosystem (ESPEN Collect)
Data Availability	Delayed access and data entry errors	Instant, real-time dashboards
Medicine Logistics	Difficulty tracking stock; high risk of shortages	Real-time tracking prevents wastage and stock-outs
Pharmacovigilance	Weak visibility of community-level adverse events	Integrated reporting synchronized with safety authorities
Supervision	Limited follow-up and disconnected feedback	Structured accountability at facility and district levels
Ownership	Disjointed data stored in temporary silos	Strong national ownership of standardized campaign data

Objective of the MDA Module

- **Treatment Monitoring:** Track medicine distribution and estimate coverage in real time
- **Safety Surveillance:** Monitor adverse events and strengthen pharmacovigilance
- **Supervision Tracking:** Capture field observations to improve accountability and quality
- **Logistics Management:** Monitor stock levels and support timely redistribution
- **Performance Measurement:** Automatically calculate indicators across community, district, and national levels

System Design & Architecture

The ESPEN Collect MDA module expands platform capabilities beyond traditional mapping. It is a fully operational, integrated tool designed to support the entire treatment monitoring workflow. By capturing data instantaneously on mobile devices, the system ensures high-quality, timely intelligence to support decision-making and contribute to the elimination of neglected tropical diseases.

ESPEN Collect MDA Module Features



Standard Digital Forms

Six electronic forms adapted to monitoring needs and aligned with country-specific workflows.

Role-based access enabling national teams to monitor coverage, stock levels, and campaign performance.

Real-Time Dashboard



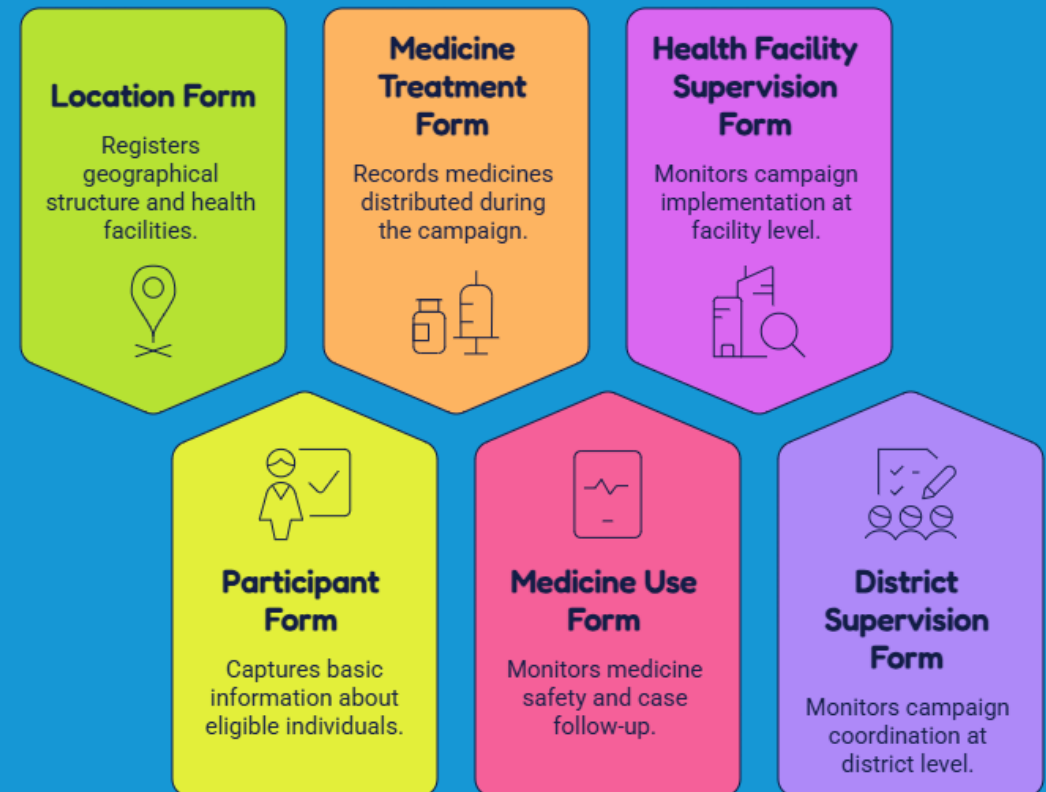
Comprehensive Training

A complete package available on the ESPEN Portal, including implementation guides and practical exercises.

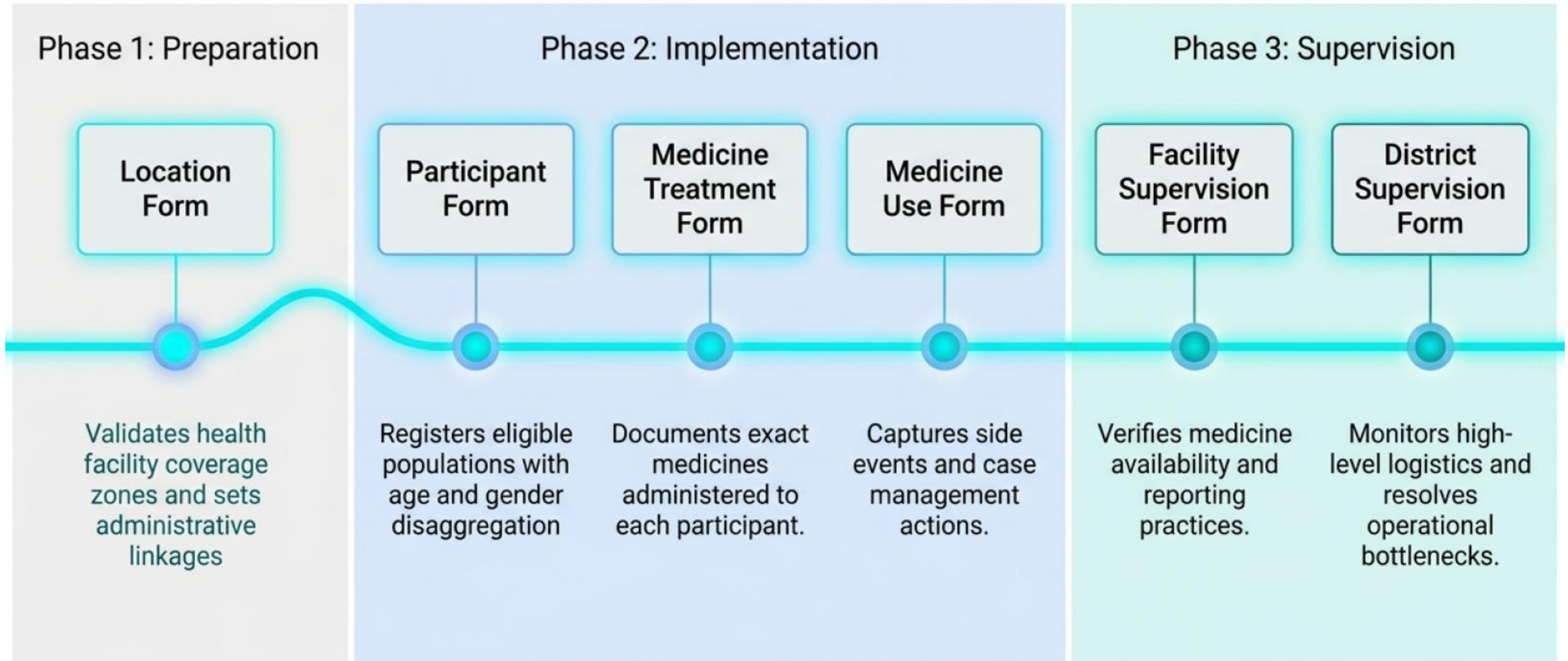
The Structural Role of Digital Forms in the MDA Module

The MDA module integrates six standardized digital forms that support the full campaign lifecycle, enabling real-time data collection, improved monitoring, and more coordinated, data-driven implementation.

MDA Module Forms



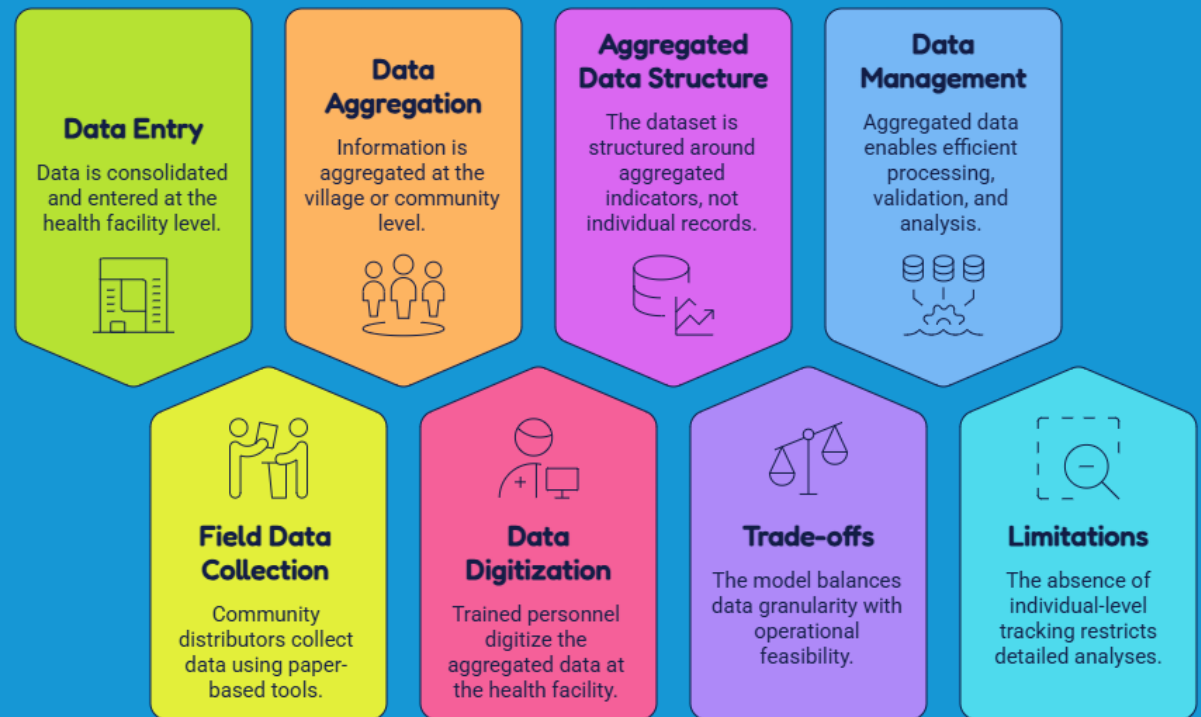
Synchronizing the Campaign Workflow



A Centralized and Aggregated Data Collection Approach

The system uses facility-based aggregated data entry, where information is collected in the field and entered at health facility level instead of by individual distributors. This approach reduces complexity, improves data quality, and supports efficient monitoring of large-scale campaigns.

MDA Module Data Collection



Training and Support Resources

ESPEN Collect Training Materials



Reference Documents

Detailed documents covering workflows, processes, and technical guidance.

Procedures for survey registration, protocol submission, technical review, and EPIRF submission.

Step-by-Step Procedures



Knowledge Assessment Tools

Tools to evaluate participant understanding before and after training sessions.

Tools to assess system performance and identify areas for improvement.

Digital Forms & Feedback Tools



Recorded Walkthroughs

Short videos demonstrating standard operating procedures.

A set of training and support materials is available to support the implementation of the ESPEN Collect module. These include reference documents, step-by-step procedures, knowledge assessment tools, standardized forms, feedback tools, and recorded walkthroughs. All resources are accessible via the ESPEN Portal, with additional support available from the ESPEN support team.

espensupport@who.int

Real-Time Monitoring Dashboard

1

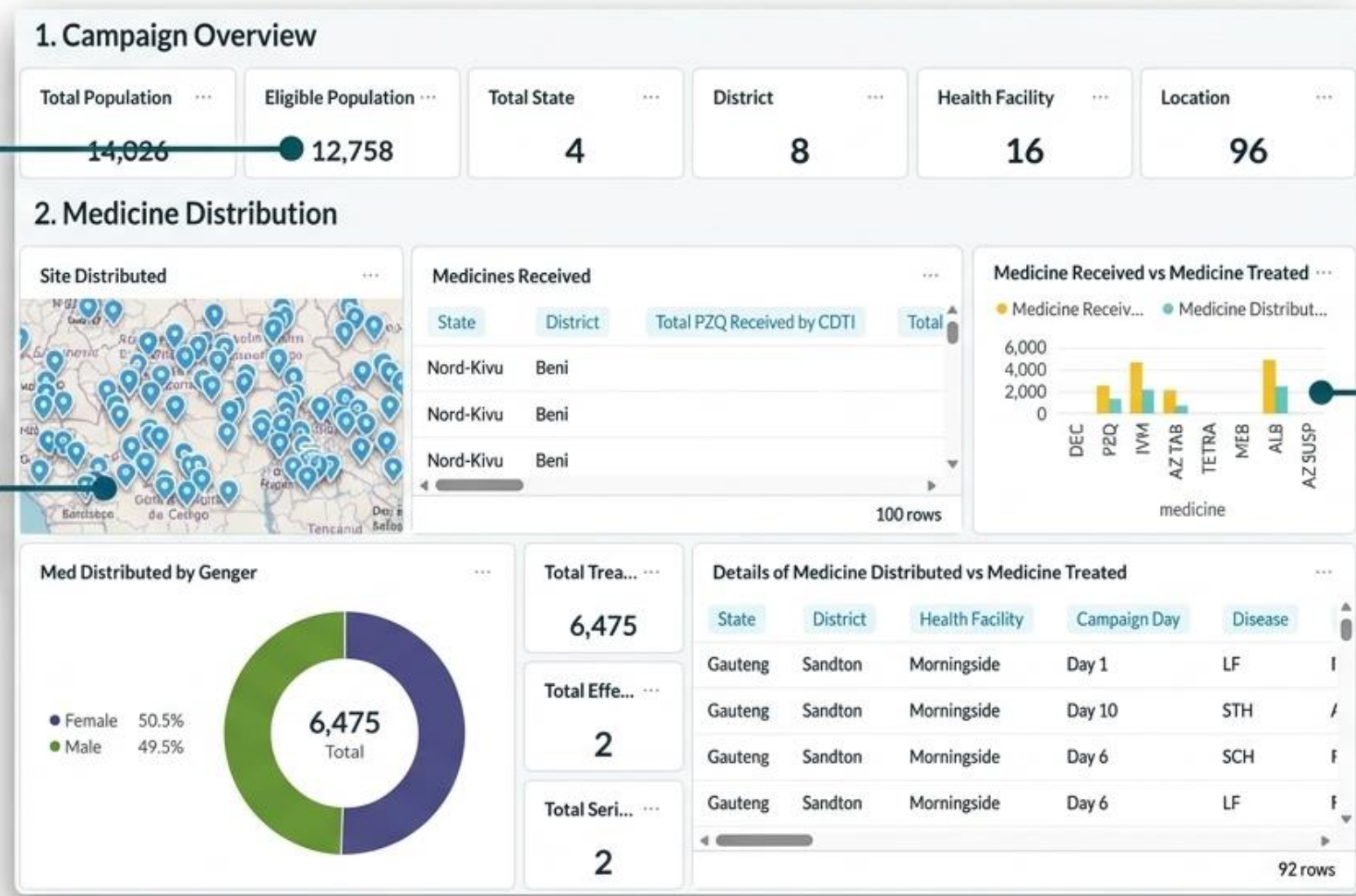
Coverage Tracking:
Live comparisons between total population and eligible treated populations.

2

Geospatial Monitoring:
Instant mapping of distributed sites to identify spatial coverage gaps.

3

Logistics Reconciliation: Real-time visual tracking to detect stock-outs before they halt operations.



Process Flow of MDA Campaign Implementation

ESPEN Collect Survey Process



Formal Request

Submit a formal request at least six weeks before implementation through the ESPEN Portal.

The request undergoes a structured review and validation process to ensure alignment with standards.

Review and Validation



System Setup

Configure digital tools, including forms, dashboards, and user access rights.

Conduct training sessions for key users on data collection procedures and system workflows.

User Training



Campaign Implementation

Collect data in the field and enter it into the system for real-time monitoring.

Access all required resources through the ESPEN Portal, with dedicated technical support available.

Resource Access



The process begins with a request submitted through the ESPEN Portal, followed by a review and validation to ensure compliance with ESPEN and WHO standards. Once approved, the system is set up with digital forms, dashboards, and user access. Training is then conducted to prepare users for implementation. During the campaign, data is collected in the field and entered at health facility level. Monitoring is carried out in real time through dashboards, allowing programme managers to track coverage, supervision, stock, and safety indicators.

THANK YOU



JRF/JRSM inventory data

The Joint Application Package (JAP)



Joint request for selected PC medicines v.4.4

As part of global efforts to accelerate expansion of preventive chemotherapy (PC) for control and elimination of lymphatic filariasis, schistosomiasis and soil-transmitted helminthiases, the World Health Organization (WHO) facilitates the supply of **albendazole** 400 mg tablets (GSK) to national lymphatic filariasis elimination programmes and national soil-transmitted helminth control programmes; **diethylcarbamazine citrate** 100 mg tablets (Eisai) to national lymphatic filariasis elimination programmes; **mebendazole** 500 mg tablets (J&J) for national soil-transmitted helminth control programmes; and **praziquantel** 600 mg tablets (Merck KGaA) for school-age children to national schistosomiasis control programmes. WHO also collaborates to supply **ivermectin** 3 mg tablets (Merck) for onchocerciasis and lymphatic filariasis donation programmes.

This Excel-based tool is designed to assist countries in quantifying the number of tablets of relevant PC medicines required to reach the planned target population and districts for the year of request. Output of the tool is a joint request for PC medicines which can be printed, signed and submitted to WHO to request these medicines.

Structure of the application (worksheets):

INTRO	This worksheet includes guides on how to complete the joint request for selected PC medicines and information about the status of PC for endemic diseases in the country.
COUNTRY_INFO	This worksheet includes information about administrative structure of the country, population by age group, status of endemicity for each disease, population requiring PC and planned interventions.
DEC, ALB_MBD, PZQ and IVM	These worksheets include information about endemic districts targeted for treatment with specified PC medicines, treatment plan, and number of tablets required and requested.
SUMMARY	This worksheet includes summary of number of tablets requested, information about stock, and date for submission of requested medicines. Before generating the report (run macros) please select the medicine for which the report is needed. Follow the same rule to see the number of people to be treated for the specific disease. This worksheet should be printed and submitted as a joint request for selected PC medicines (see the instruction for submission in the SUMMARY worksheet).

Medicine quantification
(implementation unit level)



PC Epidemiological Data Reporting Form v.4.2

The purpose of this template **PC Epidemiological Data Reporting Form (PC EPIRF)** - available as an Excel file - is to provide national health authorities and data managers with a standardized tool to address these reporting challenges, facilitate integration and thereby further contribute to improving overall programme management. This template aims to standardize national reporting of epidemiological data on diseases targeted for preventive chemotherapy, improve availability and coordination of preventive chemotherapy data across the World Health Organization regions. National authorities are requested to complete this form for submission to the World Health Organization on annual basis. This form could be submitted with the PC Joint Reporting Form (JRF).

Structure of the application (worksheets):

INTRO	This worksheet includes guides how to complete the PC epidemiological data reporting form and information about status of PC for endemic diseases in the country
LF	This worksheet includes indicators to report epidemiological data on lymphatic filariasis and section to report data on morbidity management and disability prevention
ONCHO	This worksheet includes indicators to report epidemiological data on onchocerciasis
STH	This worksheet includes indicators to report epidemiological data on soil-transmitted helminthiases

Survey results
(site level)



PC Joint Reporting Form v.4.2

The purpose of this template **Joint Reporting Form (JRF)** - available as an Excel file - is to provide national health authorities and data managers with a standardized tool to address these reporting challenges, facilitate integration and thereby further contribute to improving overall programme management. This template aims to standardize national reporting of programme implementation outcomes, improve availability and coordination of preventive chemotherapy data across the World Health Organization regions.

National authorities are requested to complete this form for submission to the World Health Organization **within 3 months** after the last round was implemented and **no later than 31 March** of the next implementation year

Structure of the application (worksheets):

INTRO	This worksheet includes guides on how to complete the joint reporting form and information about <u>status of PC for endemic diseases in the country</u>
COUNTRY_INFO	This worksheet includes information about administrative structure of the country, population by age group, status of endemicity for each disease, population requiring PC, planned interventions and interventions implemented
MDA1, MDA2, MDA3, MDA4, MDA5, T1, T2 and T3	These worksheets include information about endemic districts targeted for treatment with specified PC medicines, treatment plan, and number of people who received treatment by age group. Depending on co-endemicity of the diseases in a country the tool will generate respective <u>worksheets to fill in</u> .
DISTRICT	This worksheet includes summary of people treated by disease at the level of implementation. If data by gender is available, it requires to enter.
SUMMARY	This worksheet includes summary of people treated by disease and by PC intervention. Before generating the report (run macros) please select the disease for which you need the report. Follow the same rule to generate various reports. This worksheet should be printed and submitted as a Joint Report (see the instruction for submission in the SUMMARY worksheet).



Annual Work Plan

As part of the global efforts to accelerate expansion of preventive chemotherapy (PC) for elimination and control of lymphatic filariasis, schistosomiasis, soil-transmitted helminthiases and onchocerciasis, the World Health Organization (WHO) facilitates the supply of necessary medicines. In order to request for medicines, submission of the Annual Work Plan together with the Joint Request for selected PC medicines and the Joint Reporting Form is a requisite.

Annual Work Plan allows the national programmes to identify the specific objectives to be achieved in the year, to focus on the key activities that needs to be implemented to achieve the said objectives, and to identify the gap in financial and technical resources to achieve the objectives. It also allows WHO to closely monitor the progress of the national programmes, and to identify the obstacles and coordinate for provision of financial and technical support in time.

Information to be included in the Annual Work Plan

- ☐ Name of country
- ☐ Implementation year
- ☐ Relevant preventive chemotherapy diseases
- ☐ Specific programmatic targets to achieve in the year
- ☐ Annual work plan matrix comprising a list of activities and sub-activities with:
 - Timeline of implementation
 - Estimated cost

Activities and Funding
(implementation unit level)

Two Halves of the Same Cycle



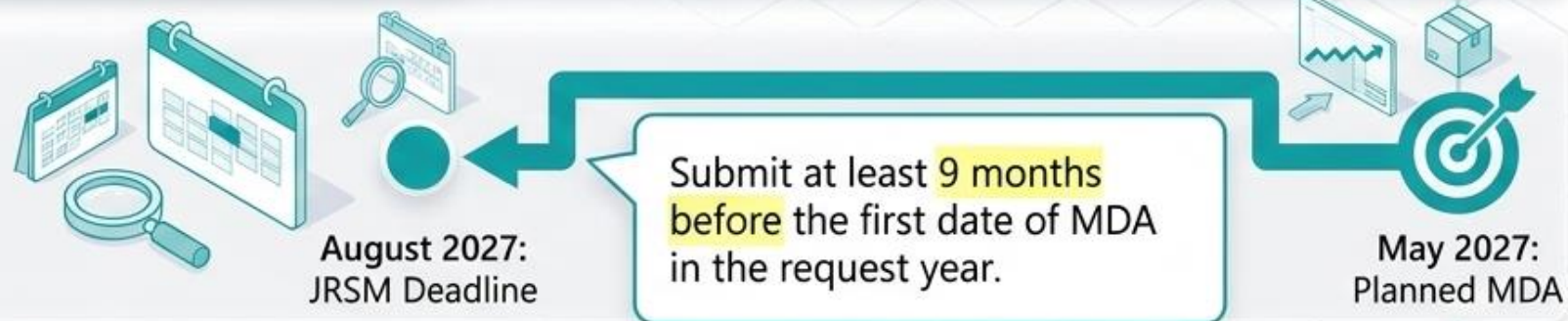
Critical Submission Windows

Implementation Year Calendar

The Backward Look (JRF)



The Forward Look (JRSM)



EPIRF



Submit as soon as survey is completed (e.g., TAS1 in June -> submit by July).



Navigating the JRF: The Accountability Record

The JRF Excel file
standardizes reporting.

The SUMMARY sheet
aggregates all data.

This sheet **MUST** be
printed, signed, and
submitted as the final
joint report.

Coverage
Validation



PC Joint Reporting Form v.4.2

The purpose of this template Joint Reporting Form (JRF) - available as an Excel file - is to provide national health authorities and data managers with a standardized tool to address these reporting challenges, facilitate integration and thereby further contribute to improving overall programme management. This template aims to standardize national reporting of programme implementation outcomes, improve availability and coordination of preventive chemotherapy data across the World Health Organization regions.

INTRO | COUNTRY_INFO | MDA1 | DISTRICT | **SUMMARY**

World Health Organization within 3 months after the last round was implemented and no later than 31 March of the next implementation year.

PC Joint Reporting Form v.4.2 (Loa)

Country: **Motanga** Year: **2023**

National authorities are requested to complete the Joint Reporting Form (JRF) for submission to the World Health Organization within 3 months after the last round was implemented and no later than 31 March of the next implementation year.

Number of people received treatment (at least once) for the diseases (all areas) and geographical coverage (%)

	PreSAC	SAO	Adults	Total	Geographical
Lymphatic filariasis		817,076	1,487,776	2,304,846	100.00
Onchocerciasis	Not eligible	975,077	1,764,332	2,743,315	100.00
Soil-transmitted helminthiasis		913,321	1,487,716	2,491,191	100.00
Schistosomiasis		887,333		887,341	75.60

Number of people in need (in areas requiring PC) received treatment for the diseases and national coverage (%)

	PreSAC	SAO	Adults	Total	National
Lymphatic filariasis				1,368,659	37.28
Onchocerciasis	Not eligible	975,077	1,764,332	2,743,315	85.59
Soil-transmitted helminthiasis		485,129	416,759	874,908	65.59
Schistosomiasis		813,842		813,642	15.06

Number of people treated by PC intervention and programme coverage (%)

	PreSAC	SAO	Adults	Total	Programme
MDA 1 (IVM+ALB)	Not eligible	817,076	1,487,776	2,304,846	53.19
MDA 3 (IVM)	Not eligible	161,599	277,565	439,064	53.24
MDA 4 (ALBIZ/ALR)					
T 1 (P2Q+ALB/MBD)	Not targeted	485,777	Not targeted	486,773	24.45
T 2 (P2Q)		396,671		396,671	30.65
T 3 (ALB/MBD) - round 1		22,402		22,402	8.55
T 3 (ALB/MBD) - round 2					
T 3 (ALB/MBD) - round 3					

Inventory of PC medicines in the country

	IVM	DEC	ALB (LF)	ALB (STH)	MBD	P2Q
Available						
Distributed						
Wasted						
Received						
Reordering						

Please indicate the medicine has been used to treat PreSAC for STH and delivery channels

PC medicine	Delivery channels	Source
Source		

joint reporting form and information about the structure of the country, population by location requiring PC, planned interventions by the tool will generate respective disease at the level of implementation. If disease and by PC intervention. Before case for which you need the report. Follow a Joint Report (see the instruction for

The Critical Zone:
Where supply chain
math lives.

SUMMARY worksheet



The current version should be used in countries **endemic** for **Loiasis**

PC Joint Reporting Form v.4.2 (Loa)

Country	Motanga	Year	2023
---------	---------	------	------

National authorities are requested to complete the **Joint Reporting Form (JRF)** for submission to the World Health Organization **within 3 months** after the last round was implemented and **no later than 31 March** of the next implementation year.

[Click here](#)

[Generate Report](#)

[Click here](#)

Number of people received treatment (at least once) for the diseases (all areas) and geographical coverage (%)

	PreSAC	SAC	Adults	Total	Geographical
Lymphatic filariasis		817,078	1,487,770	2,304,848	100.00
Onchocerciasis	Not eligible	979,077	1,764,835	2,743,912	100.00
Soil-transmitted helminthiases		913,331	1,487,770	2,401,101	100.00
Schistosomiasis		887,443		887,443	75.00

Number of people in need (in areas requiring PC) received treatment for the diseases and national coverage (%)

	PreSAC	SAC	Adults	Total	National
Lymphatic filariasis				1,366,562	37.34
Onchocerciasis	Not eligible	979,077	1,764,835	2,743,912	65.59
Soil-transmitted helminthiases		456,139	418,769	874,908	60.74
Schistosomiasis		813,842		813,842	15.88

Number of people treated by PC intervention and programme coverage (%)

	PreSAC	SAC	Adults	Total	Programme
MDA 1 (IVM+ALB)	Not eligible	817,078	1,487,770	2,304,848	83.19
MDA 3 (IVM)	Not eligible	161,999	277,065	439,064	53.24
MDA 4 (ALB/2*ALB)					
T 1 (PZQ+ALB/MBD)	Not targeted	488,772	Not targeted	488,772	24.45
T 2 (PZQ)		398,671		398,671	30.65
T 3 (ALB/MBD) - round 1		22,402		22,402	8.55
T 3 (ALB/MBD) - round 2					
T 3 (ALB/MBD) - round 3					

Inventory of PC medicines in the country

	IVM	DEC	ALB (LF)	ALB (STH)	MBD	PZQ
Available						
Distributed						
Wasted						
Received						
Remaining						

Please indicate the medicine has been used to treat PreSAC for STH and delivery channels

PC medicine	Delivery channels	Source
-------------	-------------------	--------

Additional information

JRF Inventory Logic: The Golden Equation



Previous Year's Balance.

Opening stock at the beginning of the reporting period.
(Do NOT include newly received stock here).



Medicines newly arrived during the reporting period.



Medicines actually used during implementation and quantities transferred out.



The final count after implementation.

Today

December 31st

Closing the Loop: Inventory Reconciliation



The Carry-Forward Rule



The remaining balance from one year becomes the precise opening balance for the next. Errors carry forward.



The Dec 31st Marker:
Report balances exactly as of December 31st.

Navigating the JRSM: The Forward Request

The JRSM tool assists in quantifying tablets needed to reach planned targets.

Before generating the report, verify specific disease selections.

JRSM Structure Overview

Structure of the application (worksheets):

INTRO	This worksheet includes guides on how to complete the joint request for selected PC medicines and information about the status of PC for endemic diseases in the country.
COUNTRY_INFO	This worksheet includes information about administrative structure of the country, population by age group, status of endemicity for each disease, population requiring PC and planned interventions.
DEC, ALB_MBD, PZQ and IVM	These worksheets include information about endemic districts targeted for treatment with specified PC medicines, treatment plan, and number of tablets required and requested.
SUMMARY	This worksheet includes summary of number of tablets requested, information about stock, and date for submission of requested medicines. Before generating the report (run macros) please select the medicines for which the report is needed. Follow the same rule to see the number of people to be treated

JRSM Summary: Detailed Request Table

Country	Motanga			Year	2025	
Information on PC medicines requested to						
PC medicine	Target group	Number of tablets				Specify source
		Required	In stock	In pipeline	Requested	
Diethylcarbamazine citrate	ALL					
Ivermectin	ALL	10,067,036			10,067,036	
Albendazole for LF	ALL	1,716,152			1,716,152	
Albendazole for STH	PreSAC					
	SAC	260,231			260,231	
	WRA	260,857			260,857	
	WRA	250,173			255,172	
Mebendazole	PreSAC	255,173			255,173	
	SAC					
	WRA					
	WRA					
Praziquantel	PreSAC					
	SAC	2,697,398			2,697,398	
	Adults	10,025,217			10,025,217	

The Forecasting Core. Output is a quantifiable request for donated PC medicines.

SUMMARY worksheet

Country	Motanga	Year	2025
---------	---------	------	------

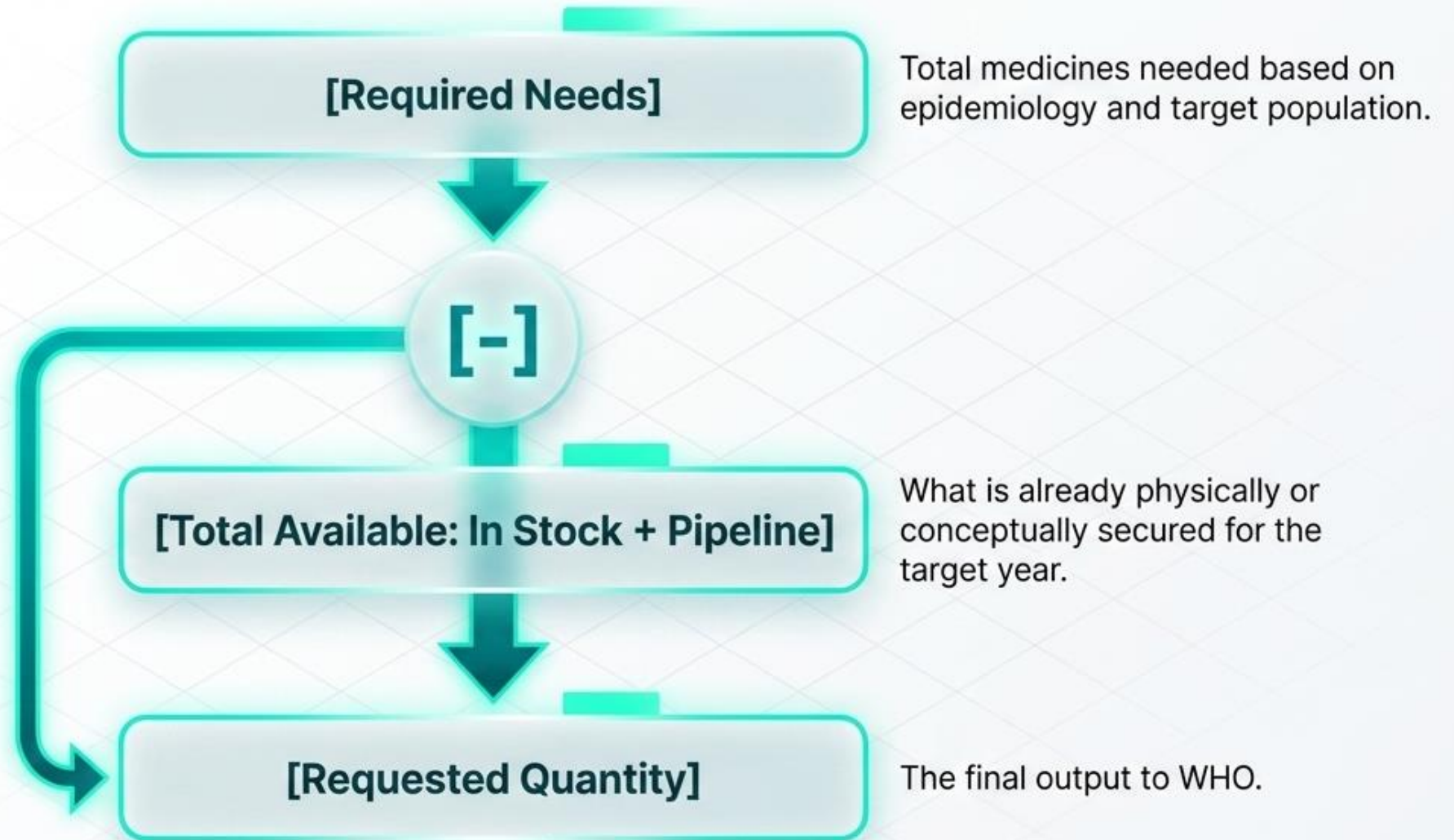
Information on PC medicines requested to WHO

PC medicine	Target group	Number of tablets				Specify source
		Required	In stock	In pipeline	Requested	
Diethylcarbamazine citrate	ALL					
Ivermectin	ALL	10,067,036			10,067,036	
Albendazole for LF	ALL	1,716,152			1,716,152	
Albendazole for STH	PreSAC					
	SAC	260,231			260,231	
	WRA	260,857			260,857	
Mebendazole	PreSAC	255,173			255,173	
	SAC					
	WRA					
Praziquantel	PreSAC					
	SAC	2,697,398			2,697,398	
	Adults	10,025,217			10,025,217	

Number of people to be treated with donated medicine (see User Guide for details)

Disease		Round 1	Round 2	Round 3
Lymphatic filariasis	These figures are estimated only for targeted age groups to be treated with donated medicines in areas where treatment for a specific disease is planned	1,716,152		
Onchocerciasis		3,595,370		
Schistosomiasis		4,690,438		
Soil-transmitted helminthiasis		1 440 526		

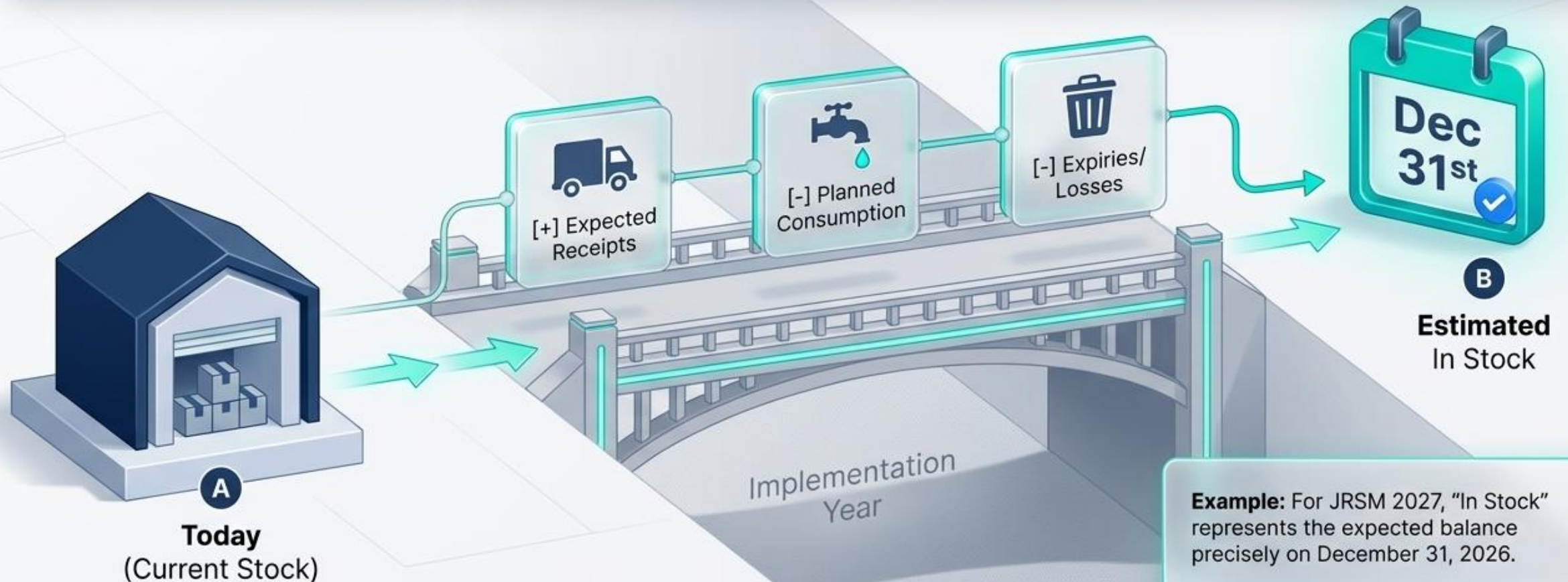
JRSM Summary Logic: The Forecasting Engine



Crucial Guideline: Request only what can realistically be utilized by the program.

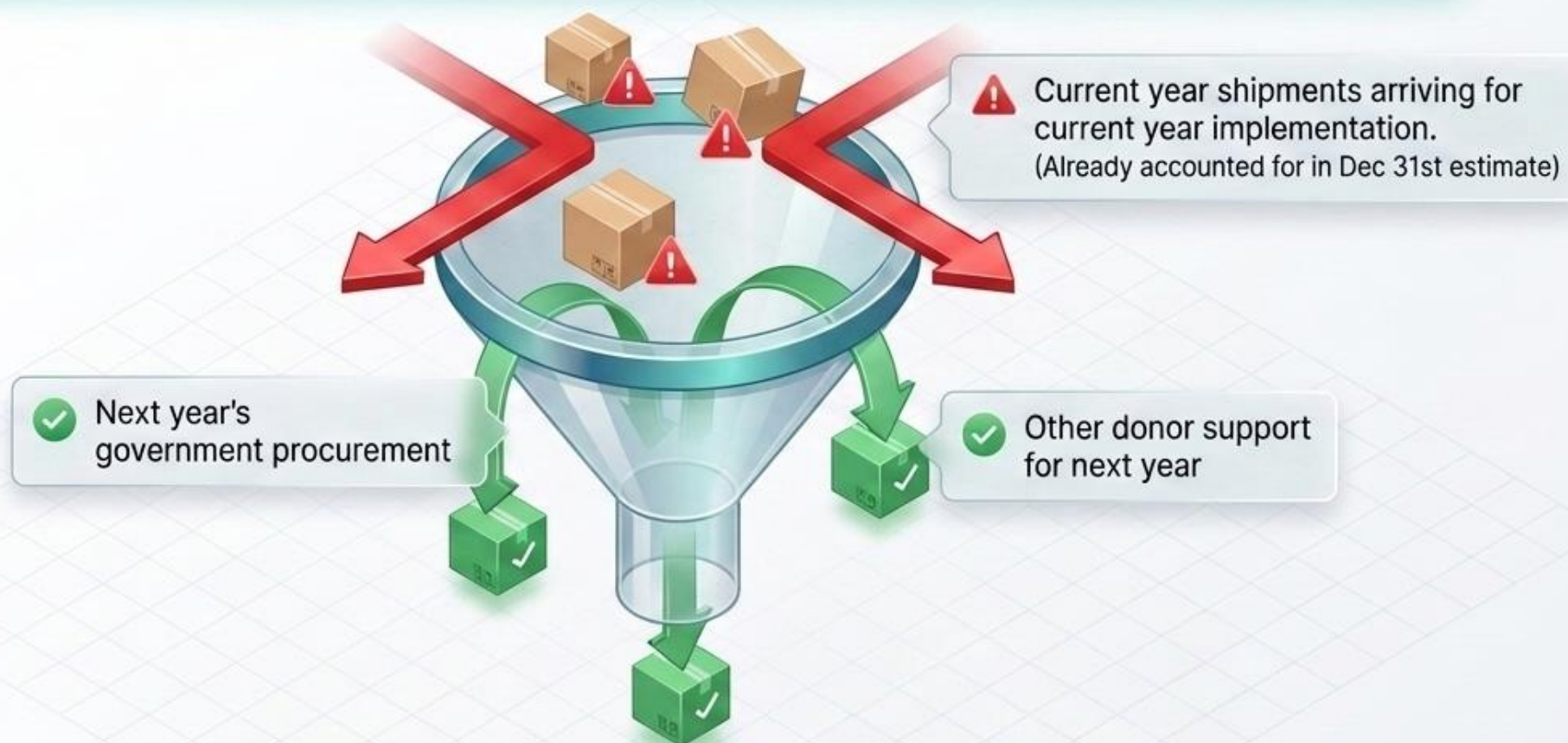
Deep Dive: The 'In-Stock' Rule

⚠️ **"In Stock"** is the estimated stock expected to remain on Dec 31st of the application year, **NOT** the stock sitting in the warehouse today.



Deep Dive: The “In Pipeline” Filter

Baseline Fact: For most countries, the Pipeline column should be exactly zero.



Rule of Thumb: JRSM is a forecasting tool, not a shipment tracking tool. Include **ONLY** expected external medicines explicitly meant to support the specific implementation year requested.

Diagnostic Matrix: Reporting vs. Forecasting

Dimension	JRF Inventory Table	JRSM Summary Table
Temporal Direction	Backward-looking (Past)	Forward-looking (Future)
Primary Output	Remaining Stock Balance	Requested Additional Quantity
The "Dec 31st" Meaning	Actual physical count as of December 31st or last implementation date (whichever comes first)	Estimated mathematical forecast before new campaigns
Common Pitfall	Adding new receipts to Opening Stock	Using "Today's Stock" instead of the Dec 31st estimate

Past

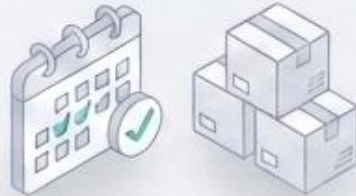
December 31st

Future

Finalizing the JRSM Package

Validating Plans & Funding

Supply **MUST** be based on **up-to-date epidemiology, specific usage plans, and implementation capacity**. Countries are reminded to fill in the sections on planned MDA and funding appropriately.



Information on planned PC interventions

PC medicine	Planned date of the 1st round of PC		Planned date of the 2nd round of PC		Date by which the medicine should arrive to the national warehouse	
Diethylcarbamazine citrate						
ivermectin	September	2025			July	2025
Albendazole for LF	September	2025			July	2025
Albendazole for STI1			December	2025	October	2025
Ribendazole			December	2025	October	2025
Prasiquantel			December	2025	October	2025

Checklist

What should be submitted?

The supply of the requested medicines should be based on **up-to-date epidemiological data, specific usage plans, and capacity for implementation**. The following checklist ensures that all necessary forms and information are provided to WHO (in electronic form):

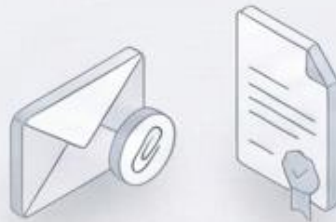
- ☒ Joint request for selected PC medicines
- ☒ Joint reporting form
- ☒ PC epidemiological data reporting form

Availability of funding for implementation in the year for which the medicines are requested

Diseases targeted for implementation	Total treatments	Funding secured for	Source	Amount
Lymphatic filariasis	1716.152			

The Official Sign-Off

Crucially, ensure to press the **"Generate Request"** button to finalize the process.



Read Statement ☐ I have read and accept WHO Data Sharing Policy ☐

Read before submission ☐ I confirm that all information provided in this form is complete and correct ☐

Name and signature of NTD coordinator or Ministry of Health representative: _____

Date: _____

Please send the national report (signed and in electronic form) to the concerned WR with copy to:

WHO headquarters
WHO Regional Office

PC_JointForms@who.int
Regional Advisor for NTD

Generate Request

Save Report in EXCEL Save Report in PDF Generate Country Profile Print Report

THANK YOU



Inventory Clinic on reconciliation challenges

End of Day 3