

MALAWI USE OF iCHIS TO OPTIMIZE LIMITED OPERATIONAL RESOURCES FOR ITN MASS DISTRIBUTION CAMPAIGN



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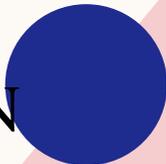
Ministry of Health – NMCP

Community Health Services Unit

Lilongwe, Malawi

AGENDA

- Background of iCHIS
- Overview of Digitalized ITN HHR and Distribution Campaign
- Success Stories
- Strategic Lessons
- Strategic Planning & Sustainability
- How Reusing iCHIS Data Reduces Recurrent ITN Campaign Costs
- Moving forward





Background of iCHIS

National Community Health Strategy 2017-2022

National Community Health Strategies



ICT objectives

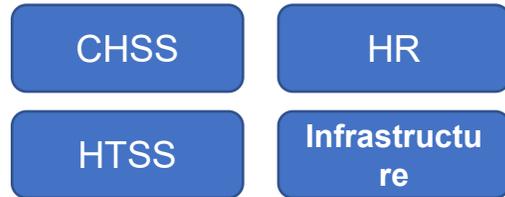
1. Harmonize community health data through a Community Health Information System
2. Implement integrated mHealth solutions for community health workers

Development of the Community Health Indicator handbook was the first step for both objectives

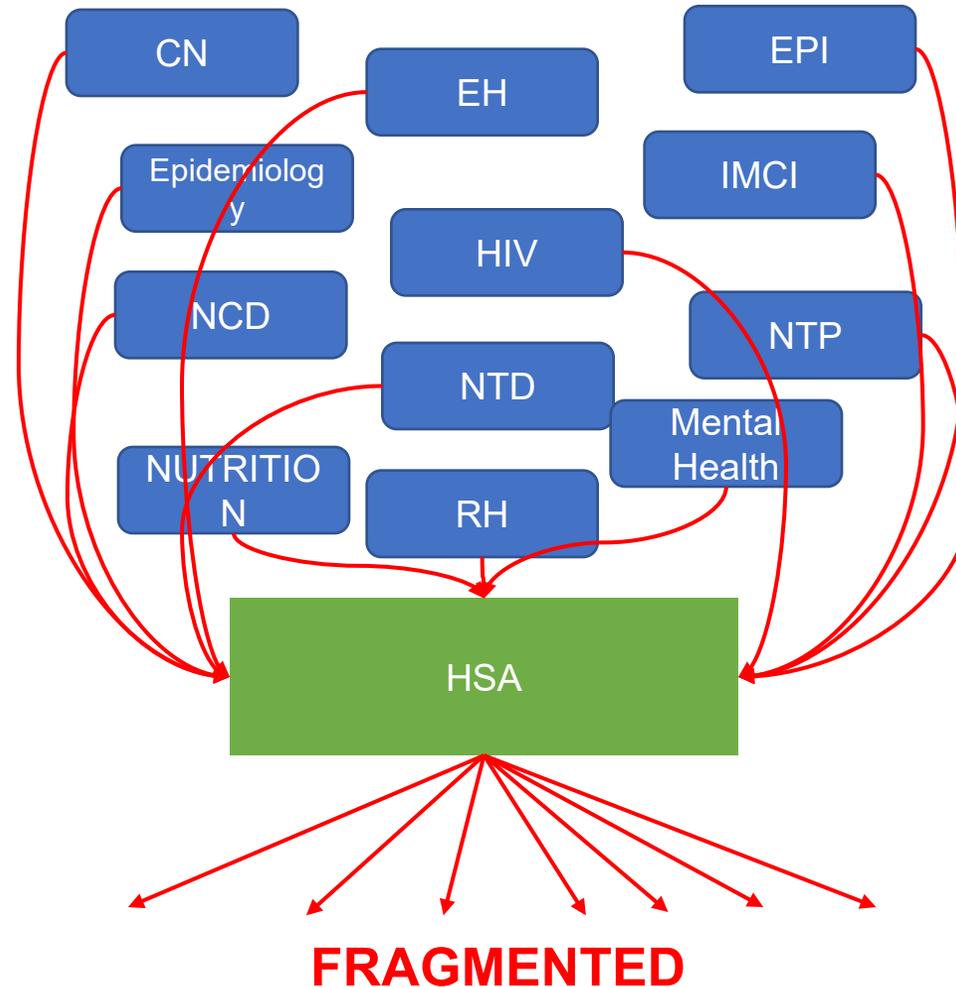


Challenges for CH Reporting

CH System Indicators **GAP**



Program Indicators at Community Level



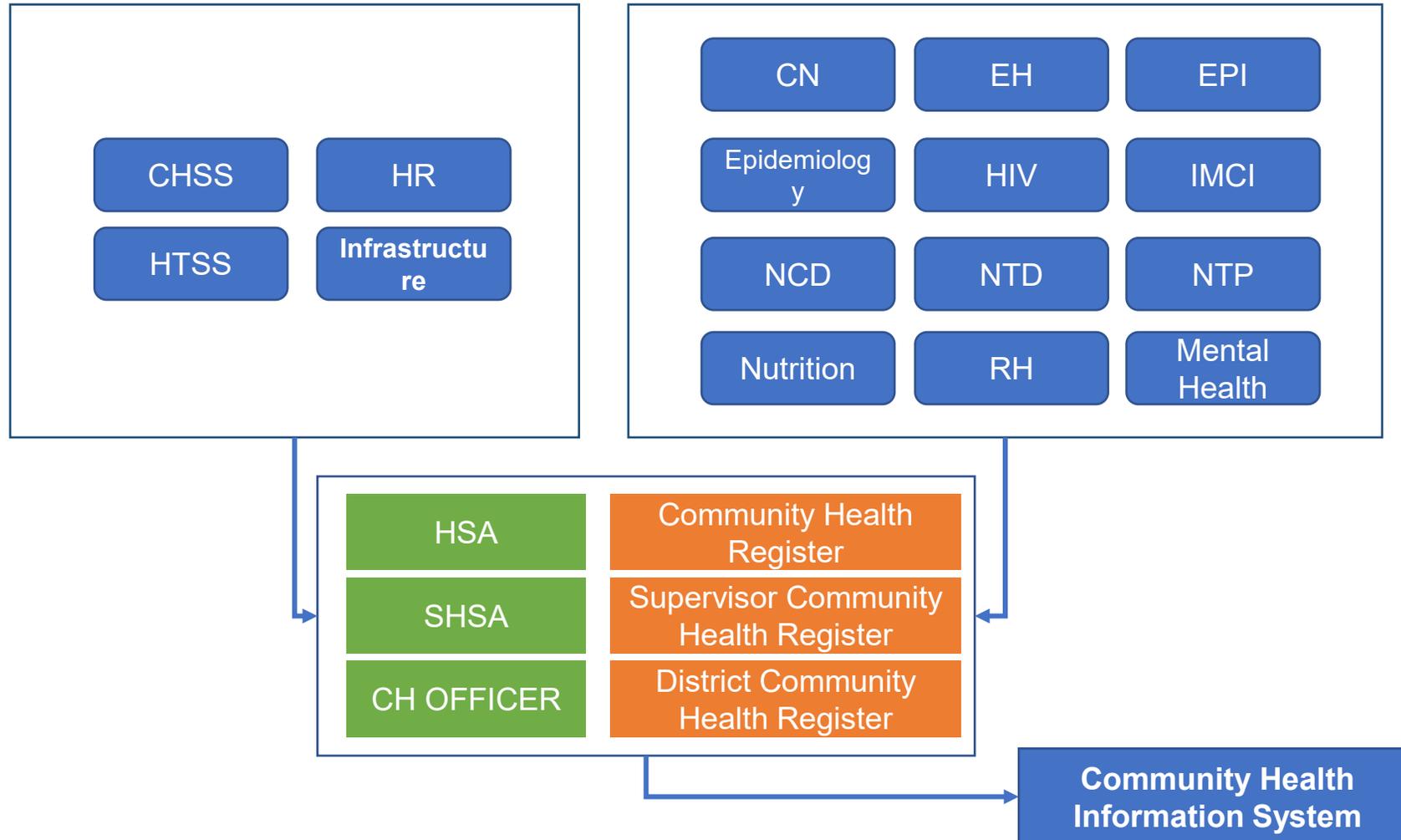
- Fragmentation of data collection: Programs using different data collection tools and processes
- HSA responsible for more than 40 data collection processes
- After data is collected by HSA it is fed into several different systems
- Gap in data for community health system indicators



What has been done

CH System Indicators

Program Indicators at Community Level



- CH System indicators now collected
- **VERTICAL REPORTING TOOLS REPLACED BY INTEGRATED DATA COLLECTION TOOL**
- Integrated Community Health Register tool for key CH cadres feeds CHIS
- Reporting designed around person collecting information to improve quality and reduce burden



iCHIS

About iCHIS

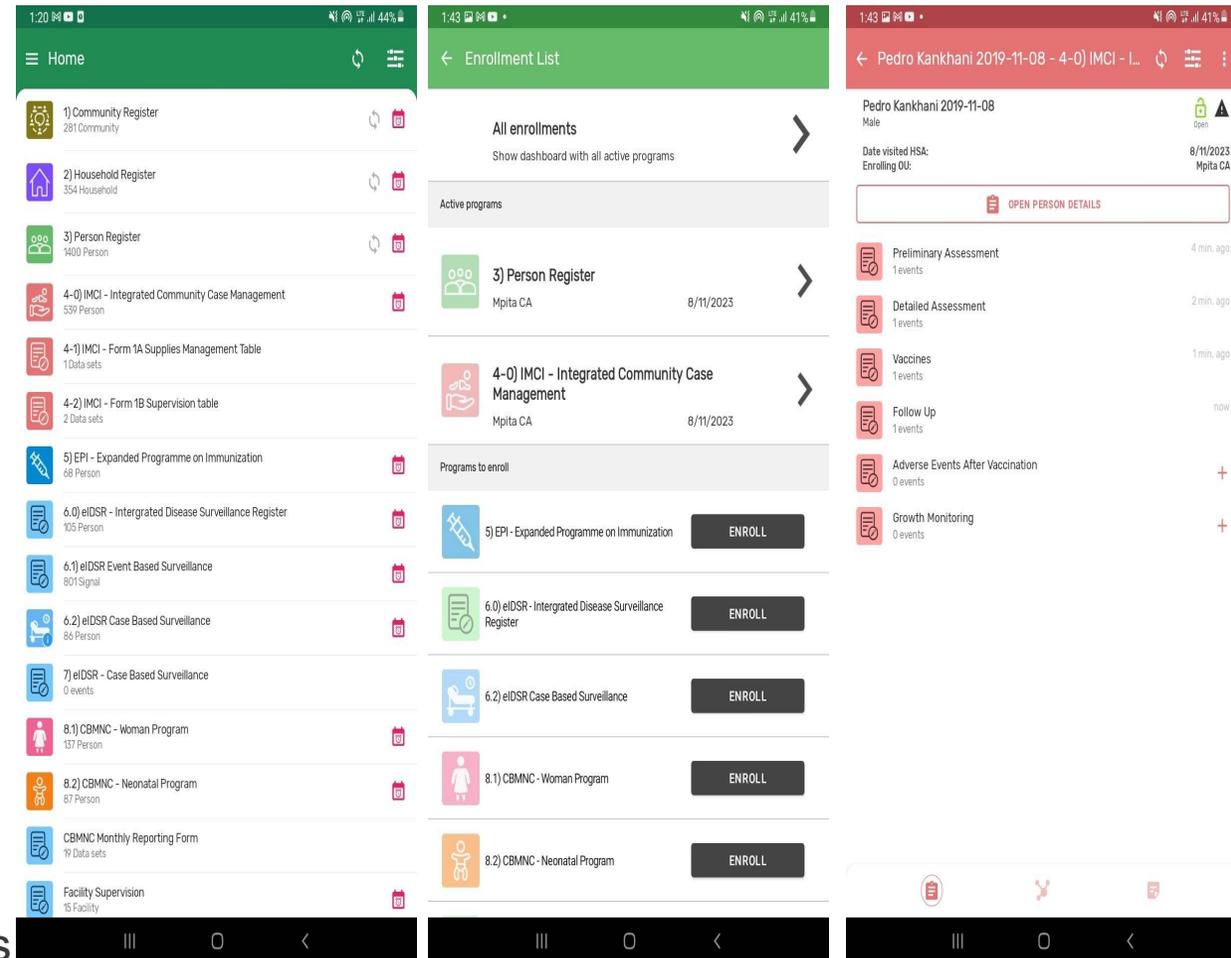


What is iCHIS?

The Integrated Community Health Information System (iCHIS), is a point of care application (built on DHIS2 Tracker) that strengthens community health service delivery in Malawi. The

Why iCHIS?

- Government owned digital system that support CHWs service delivery and reporting at Community level.
- Built to Integrate with other existing MoH systems
- Interfaces with DHIS2 for national reporting
- Enables offline data capture with synchronized uploads
- Uses role-based access and analytics dashboards
- It informs decision-making and action at the point of care and across all levels of service provision.



Phases of iCHIS Development



2018-2019

Situational Assessment

MoH conducts a landscape of current digital solutions and sets iCHIS governance

01

2020-2021

Design Phase

Module design begins. Prototype deployed across 3 districts with 3 completed modules. Pilot Kasungu
First implementation Balaka, Machinga and Salima

03

02

Systems Requirement Gathering

MoH finalizes business requirements and selects DHIS2 application for the HSA program

2019-2020

04

Development & Testing

MoH establishes the technical committee. Partners begin development of iCHIS modules

2021-2024

2024 & Beyond

National Scale

iCHIS is being scaled across the HSA program

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OVERVIEW OF THE CAMPAIGN

- Triennial mass ITN distribution campaigns are a core malaria prevention strategy in Malawi
- Recurrent ITN campaigns require: Accurate targeting, Efficient logistics, Strong accountability, Real-time monitoring
- Paper-based systems created operational inefficiencies, data delays, and higher recurrent costs
- Strategic response: Transition from paper-based ITN campaigns to digitalized delivery using iCHIS
- To improve efficiency, accountability, and data timeliness, NMCP Malawi digitalized the 2024 ITN campaign using iCHIS (Integrated Community Health Information System)
- Technical leadership provided by HISP Malawi (UNIMA)
- Implemented jointly with NMCP and development partners, including USAID President's Malaria Initiative

EVOLUTION OF ITN CAMPAIGNS IN MALAWI



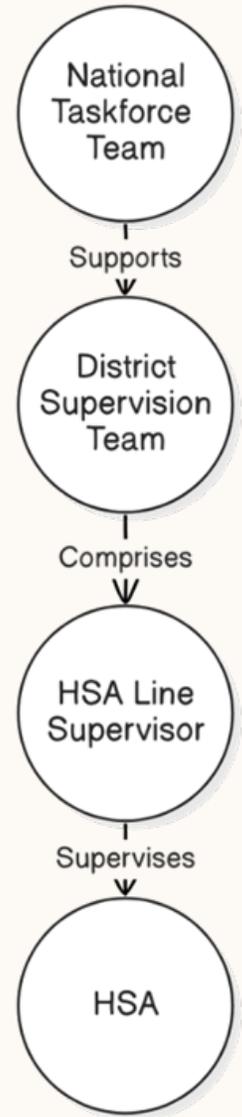
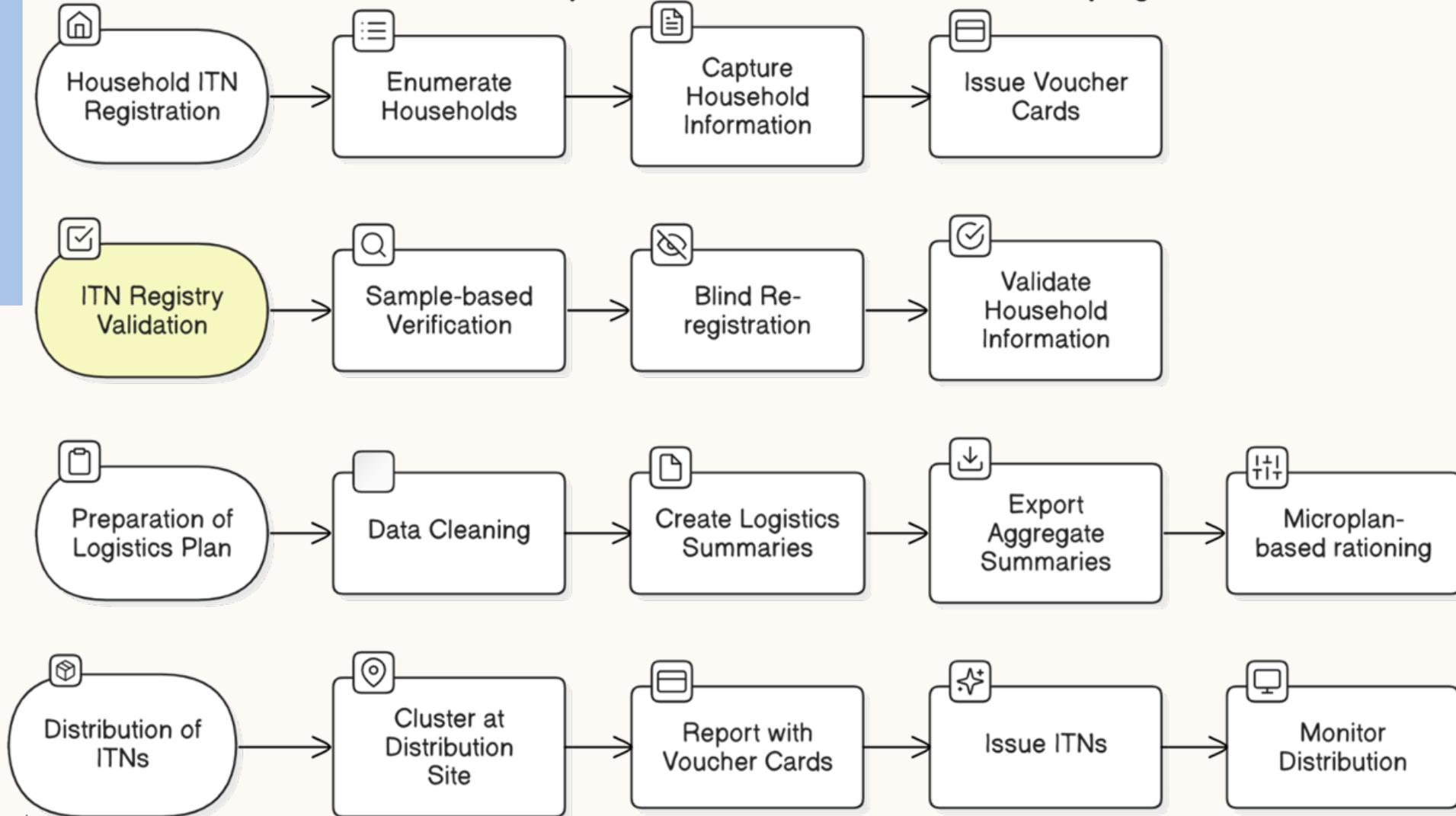
Paper-Based ITN Campaign	Digitalized ITN Campaign
Manual household registration	Digital HH registration via iCHIS
Physical reconciliation of registers	Automated allocation rules
Delayed data availability	Real-time data – dashboards
Limited real-time supervision	Electronic validation & supervision
High logistical burden	Reduced operational waste





DIGITALIZED ITN MASS DISTRIBUTION WORKFLOW ¹¹

Workflow Description of ITN Mass Distribution Campaign



PILOT-TO-SCALE LEARNING: STRENGTHENING MALAWI'S DIGITAL ITN CAMPAIGN

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Pilot Phase (Mwanza & Machinga – Sept 2024)
Purpose: De-risk national rollout and stress-test iCHIS at scale



Key Challenges Identified

- Frequent server downtime
- Data synchronization bottlenecks (simultaneous CHW syncing)
- 10,000+ village option sets causing system strain (suspended)
- Manual typing of HH unique IDs slowed distribution
- Limited digital support teams
- Weak tracking tools for operational oversight

Corrective Actions Before Mass Rollout

- Server optimization → significantly reduced downtime
- Suspension of large option sets pending reconfiguration
- Expanded digital support teams (on-site troubleshooting)
- Introduced tracking dashboards for HHR & distribution
- Encouraged back-data-entry via voucher cards
- Proposed QR/barcode-enabled printable vouchers for future cycles



ROLLOUT PERFORMANCE & INSIGHTS

Coverage & Targeting

- HHR reached **121%** (Southern Region)
 - Evidence that micro-planning underestimated actual HH numbers
- National ITN distribution coverage: **78%**
- District disparities:
 - Neno: **100%**
 - Kasungu: almost 100% (**99.68%**)
 - Blantyre: **11%** (refusal to distribute via iCHIS)
 - Data accuracy – **97%**

Operational Challenges During Rollout

- Net shortages → rationing required
- Delayed payments → HSA reluctance/non-compliance
- ~35% of HSAs lacked adequate digital literacy
- Voucher collection due to long queues & slow on-spot entry
- In extreme cases (Blantyre), distribution reverted to voucher-only approach
- Long intervals between HHR and distribution due to in availability of resources i.e. no funds in our account.
- Network challenges in some areas



SUCCESS STORIES

- 29 / 29 districts (100%) successfully implemented digital ITN distribution (more than 11 million ITNs)
- 5 PMI-supported districts fully integrated into the national digital platform
- Nationwide rollout completed within one campaign cycle without reverting to paper systems
- Seventy eight percent of data synced into iCHIS
- Reduced malaria cases by 43% and malaria deaths by 27% from 2024 cases
- Ninety seven percent data accuracy – Data verification

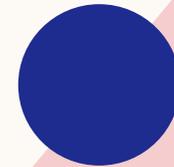


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STRATEGIC LESSONS

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1. Digital transformation requires change management and workforce support, not just software
2. Server architecture must anticipate peak synchronization loads
3. Large option sets require performance-aware configuration in DHIS2
4. Digital literacy investment is as important as hardware
5. QR/barcode voucher systems can significantly improve timeliness
6. Investments in digital platforms create reusable assets for multiple malaria and community health interventions
7. Payment systems directly influence digital compliance



STRATEGIC PLANNING & SUSTAINABILITY

- ITN modules embedded in **national iCHIS**
- Reuse of devices across programmes
- Reduced recurrent costs in subsequent campaigns
- Strengthened interoperability with DHIS2
- Local technical capacity via UNIMA

HOW REUSING iCHIS DATA REDUCES RECURRENT ITN CAMPAIGN COSTS

1. Household Registration

- No full re-registration every 3 years
- Use existing iCHIS household master list
- Conduct targeted updates only (new households, migration, demographic changes)

2. Results

- Reduced temporary workforce costs
- Minimal printing and paper tools
- Shorter registration period
- No large post-campaign data entry burden

1. ITN Distribution

- Preloaded verified household data in iCHIS
- Automated net allocation rules
- Real-time dashboards for tracking and reconciliation
- Potential QR/barcode voucher verification

2. Results

- Faster distribution
- Reduced supervision and reconciliation costs
- Lower leakage and duplication risk
- Improved accountability

MOVING FORWARD, MALAWI WILL:

- Strengthen server resilience and system performance
- Enhance digital literacy among HSAs
- Integrate QR/barcode-enabled voucher solutions
- Improve coordination between logistics, payments, and digital compliance

Malawi's experience affirms that iCHIS can optimize limited operational resources while strengthening accountability and equity in malaria prevention delivery.



THANK YOU

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Acknowledgements



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FROM THE AMERICAN PEOPLE



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Malawi

LAST MILE HEALTH

Palladium
MAKE IT POSSIBLE

PMI Evolve
Evolving Vector Control to Fight Malaria



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COUNTRY HEALTH INFORMATION SYSTEMS AND DATA USE



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