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Strategies to Address Threats to HIV M&E Sustainability in Uganda: Integration and Digitization of HMIS

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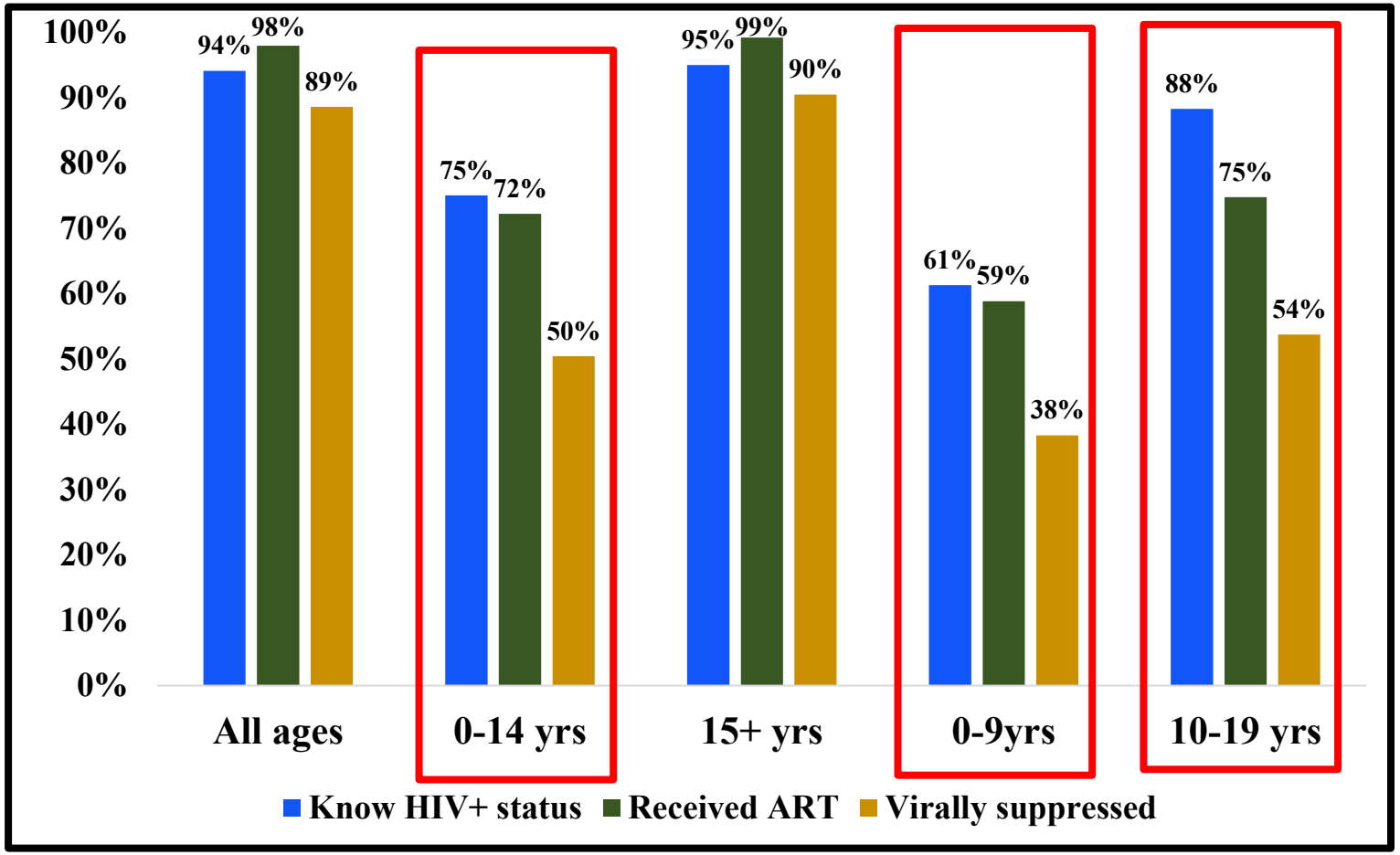
Outline

- HIV context in Uganda
- Results of HIV indicator prioritization (July 2025)
- Results of the M&E System Vulnerabilities Pilot Assessment
- Rationale for an integrated and digitalized M&E system
- Strategic to mitigate arising M&E issues
- Transition roadmap to digitalization of registers
- Expected benefits, challenges and risks
- Next steps
- Call to action

Overview of the HIV Epidemic in Uganda

Uganda HIV Snapshot, 2024:

- **1.53M PLHIV**
- **Prevalence** 5.5% (Women 6.9%, Men 4.2%); Children 0–14: 0.4% (~70k)
- **New infections:** 36,648 (down from 100k in 2010)
- **AIDS deaths:** 20,335 (down from 55k in 2010)
- Infections exceed deaths hence epidemic control not yet achieved



M&E Indicator Prioritization

Indicator Prioritisation by External Funding Scenario			
#	Program Area	Indicator	Uganda 50%
1	VTP	Ist ANC attendance	
2		Ist ANC testing	
3		1st ANC HIV+	
4		1st ANC Known HIV+	
5		HEI 1st EID	
6		HEI outcome	
7		HEI ARV prophylaxis	
8	HTS	HTS_TST	
9		HTS_POS	
10		HTS_TST by modality	
11		HTS_POS by modality	
12	ART	TX_NEW	
13		TX_NEW by CD4 count	
14		TX_CURR by MMD	
15		Interuption in Treatment [IIT]	
16		AIDS-related mortality	
17	VL	VL results received	
18		VL results <1,000 C/ml	
19	TB	TB diagnosis	
20		Initiated on TPT	
21		Completed TPT	
22	HIV Prevention	PrEP_NEW	
23		Received PrEP	
24		Received PEP	
25		Received condoms	

- **All** indicators were prioritized for monitoring; data is however captured in **many** different registers
- 2,240 Health facilities are reporting on HIV indicators
- Ongoing health system reforms under HSDP IV promoting integrated service delivery

Key threats to monitoring these indicators:

- M&E system built on multiple donor-funded/ supported tools and platforms (DHIS2, Uganda EMR, Clinic Master)
- Reduced donor financing for printing HMIS tools and maintaining EMRs
- High cost of maintaining program-specific registers
- Fragmentation of data sources limits cross-program analysis
- Limited national budget allocation for M&E and ICT support

Keep (No Change)
Keep (Modify)
Drop

Pilot Results National M&E System Vulnerabilities Assessment: HMIS paper-based and EMR

Domain	Sub-domain	Score	
1. HMIS – Paper / Aggregate data			
	1.1. Paper-based tools design and updates		Partial vulnerability
	1.2. Paper-based M&E tools availability		Partial vulnerability
	1.3. Design, updating, and maintenance of national aggregate database systems (eg, DHIS2)		Partial vulnerability
	1.4. Aggregation and digitization of individual-level paper-based data for routine reporting		Partial vulnerability
	1.5. Data transmission and validation		Partial vulnerability
	1.6. System interoperability with national aggregate database		Partial vulnerability
	1.7. Management, archival and retrieval of paper-based records		Partial vulnerability
	1.8. Capacity to collect and manage key population (KP) data		Partial vulnerability
2. HMIS - EMR			
	2.1 Leadership and governance		Partial vulnerability
	2.2. EMR design and update		Partial vulnerability
	2.3. Aggregation and reporting of individual-level EMR data for routine reporting		Partial vulnerability
	2.4. Data validation checks in DHIS2/EMR		Partial vulnerability
	2.5. Infrastructure		Partial vulnerability
	2.6. Interoperability & standards of data systems		Partial vulnerability
	2.7. Retention monitoring and follow-up		Partial vulnerability
	2.8. Commodity tracking systems		Partial vulnerability
	2.9. Lab specimen tracking systems		Partial vulnerability
	2. 10. Documenting key populations		Partial vulnerability
	2.11. Data confidentiality and security (including unique identifiers)		Partial vulnerability

Key:
1 No vulnerability
2 Partial vulnerability
3 High vulnerability
4 Existing M&E gap

- Currently, PEPFAR and GF contribute 100% towards printing and distribution of HIV program tools
- EMR equipment procurement and personnel is supported by donor funding
- EMR functions are mostly donor funded though GoU is now taking up some of the responsibilities

Pilot Results National M&E System Vulnerabilities Assessment:
Data quality and use, HRH, and M&E of community-based services

Domain	Sub-domain	Score	
3. Data Quality			
	3.1. Availablity, quality, and use of national and subnational aggregate data outputs		Partial vulnerability
	3.2. Supportive supervision		Partial vulnerability
	3.3. Completeness of reporting		Partial vulnerability
	3.4. Timeliness/Reporting frequency		Partial vulnerability
	3.5. Routine data quality review meetings (subnational, health facility etc)		Partial vulnerability
	3.6. Protocols/SOPs/tools for regular data quality assurance.		Partial vulnerability
4. Data Dissemination and Use			
	4.1. Availablity, quality, and use of national and subnational aggregate data outputs		Partial vulnerability
	4.2. Availablity, quality, and use of data outputs from facility-level information systems		Partial vulnerability
	4.3. SOPs, protocols, tools, and job aids for dissemination and data use		Partial vulnerability
	4.4 Access to data analysis and dissemination tools		Partial vulnerability
	4.5. Data review meetings and feedback loops		Partial vulnerability
	4.6. Use of surveys, surveillance, and complementary data sources (non-HMIS)		Partial vulnerability
5. HRH Capacity			
	5.1. Adequate staffing across all M&E functions		Partial vulnerability
	5.2. M&E capacity building through trainings		Partial vulnerability
	5.3. M&E capacity building through supervision and mentorship		Partial vulnerability
	5.4. Effective M&E human resources management		Partial vulnerability
6. M&E of community-based HIV services			
	6.1. HMIS - Paper-based and Aggregate database for Community-based Services Data		Partial vulnerability
	6.2. HMIS - EMR for Community-based Services Data		Partial vulnerability
	6.3. Data Quality Assuarance for Community-based Services Data		Partial vulnerability
	6.4. Data Dissemination and Use of Community-based Services Data		Partial vulnerability
	6.5. Adequate staffing across all community M&E functions		Partial vulnerability

Key:
1. No vulnerability
2. Partial vulnerability
3. High vulnerability
4. Existing M&E gap

- All the above have partial vulnerability - donors finance most of the functions
- Integration and digitization of tools is one approach to address vulnerabilities

Rationale for an Integrated and digitalized M&E system

Reduced donor support: Development partners who have traditionally financed the printing of HMIS tools and funded systems like UgandaEMR are reducing their contributions. This leaves a sustainability gap for the Government of Uganda.

High costs in a resource-limited system: Maintaining multiple program-specific s increases the national printing bill, while the health system already struggles with constrained financing and staffing.

Transition to integrated service delivery at the facility level: Health facilities have been guided to move away from vertical, program-specific documentation toward integrated s that capture all services in a people-centered way. This reduces duplication and aligns with the national direction under HSDP III and the eHealth Policy.

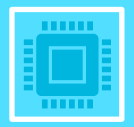
Need for efficiency and sustainability: Integrating and digitizing HMIS tools will reduce costs, ease the burden on frontline health workers, and create a more sustainable system that the government can finance domestically.

Strategic Steps undertaken to mitigate M&E Vulnerabilities

Review, streamline, and integrate registers→ Eliminate duplication across disease-specific tools by consolidating data elements into one integrated register.

Align and improve data workflows to reduce workload→ Harmonize reporting requirements across programs so health workers capture information once, reducing documentation time and errors.

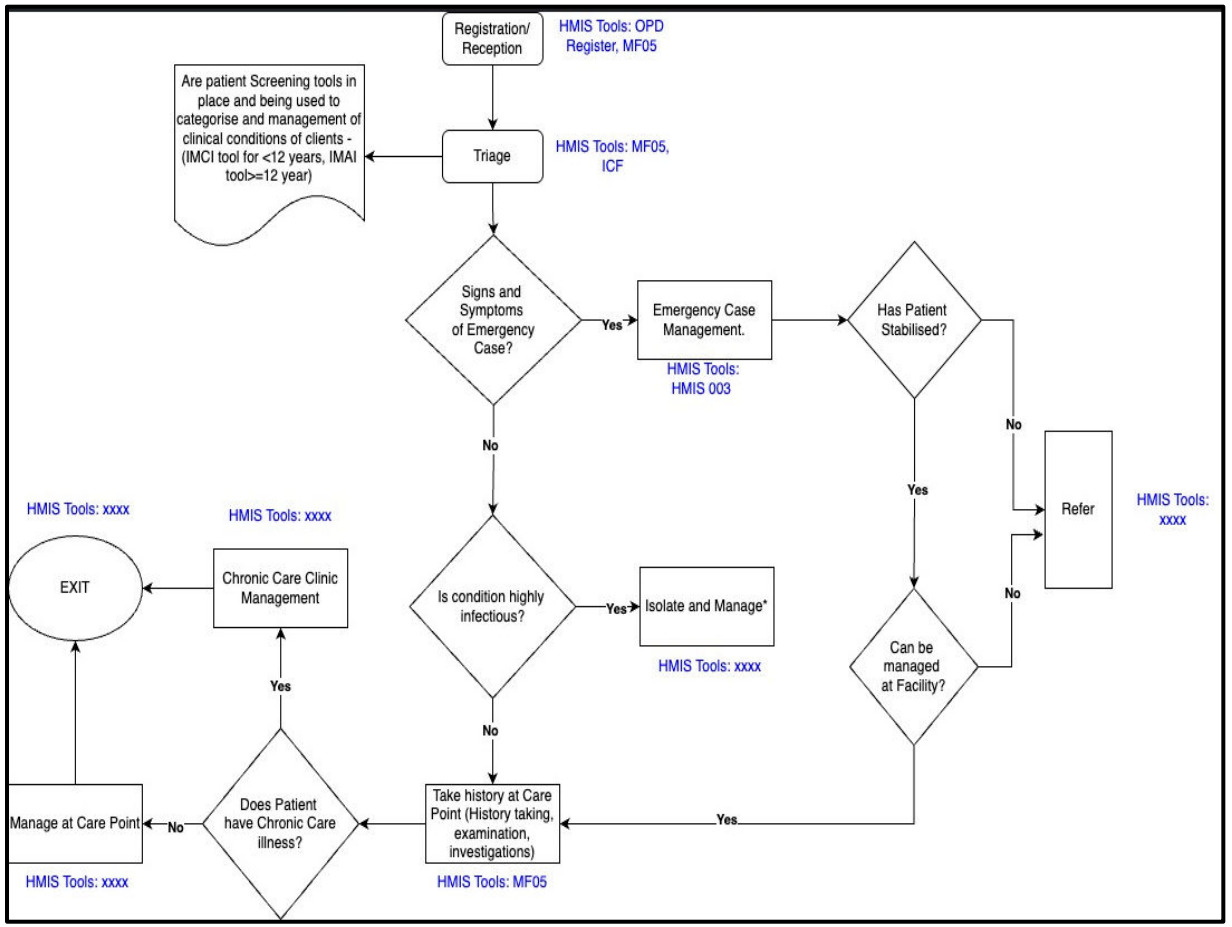
Digitize and strengthen data use→ Transition from paper-based registers to UgandaEMR/DHIS2 to improve accuracy, timeliness, and availability of information for decision-making.



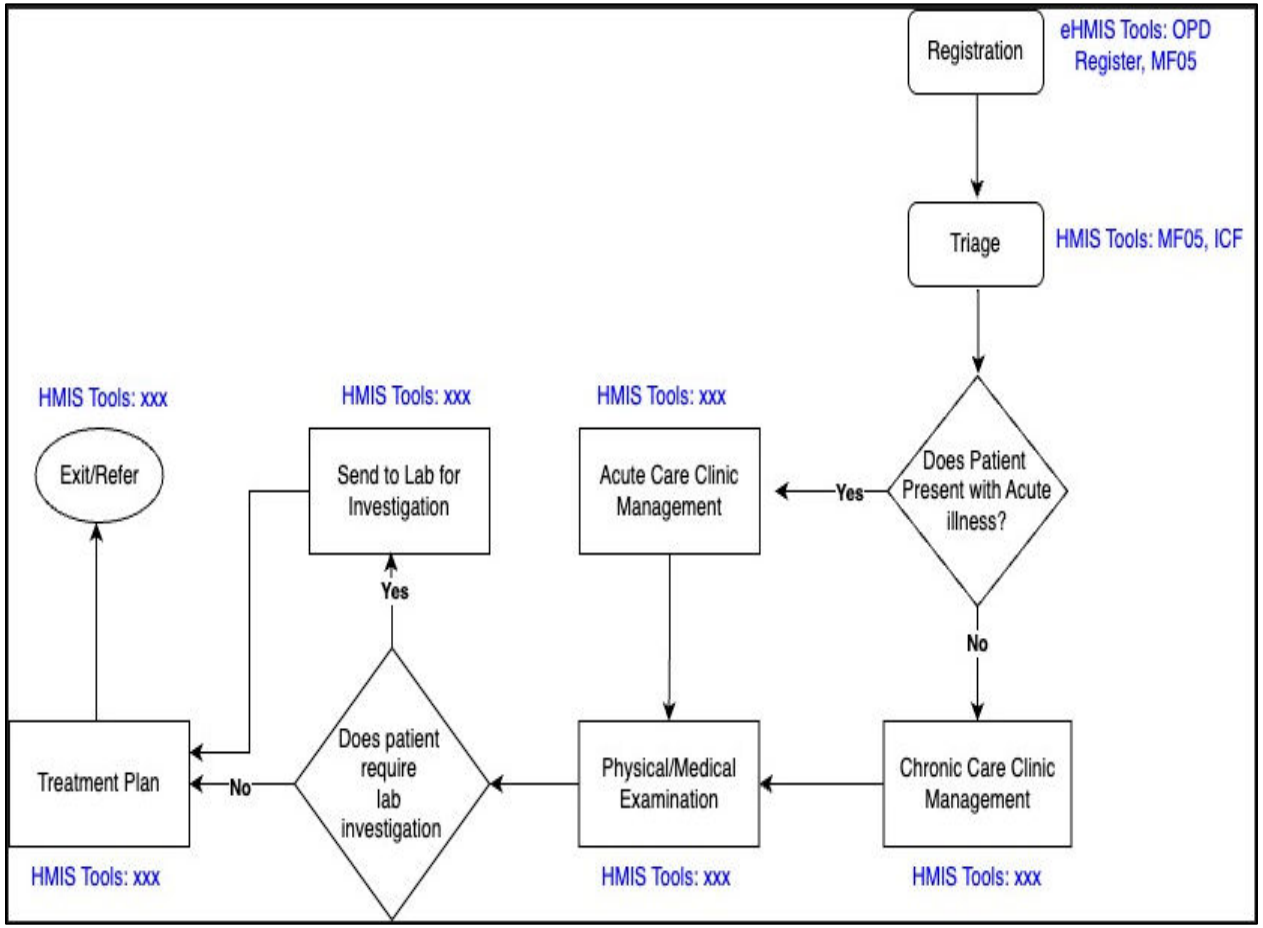
Leverage digitization to improve quality and accountability→ Use integrated digital systems to ensure data completeness and consistency, while enabling managers at facility, district, and national levels to monitor performance, guide resource allocation, and improve accountability

Proposed Patient flows and Data Capture points

Acute Care



Chronic care



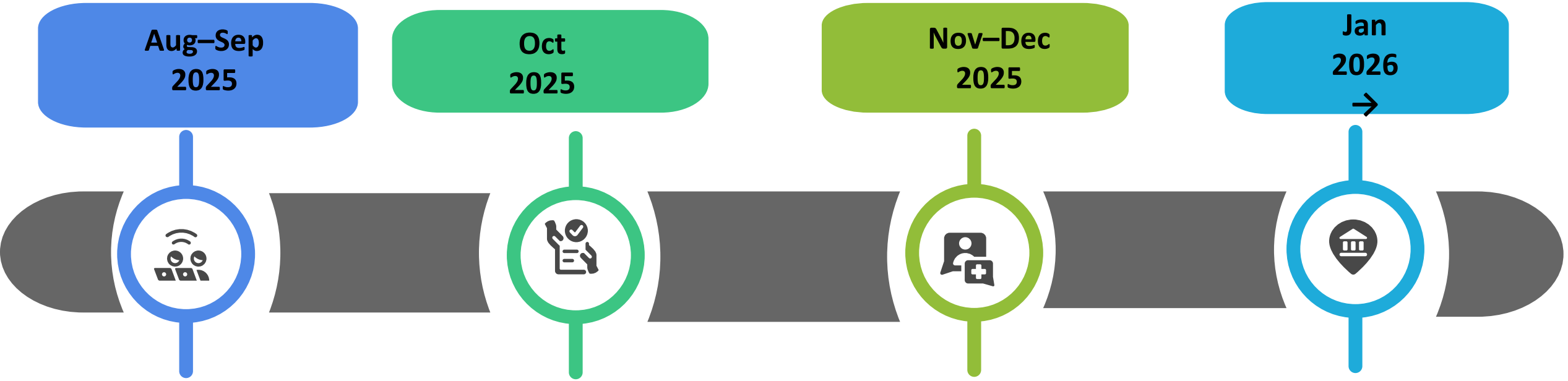
OPD – Outpatient service documentation, MF05 – Comprehensive care clinic (HIV services), ICF Tool – Intensified Case Finding (for TB screening), HMIS 003 – Monthly summary reporting tool for outpatient data, HMIS Tool xxx- New/Modifications needed

Why Integration and Digitization?

Disease-Specific Registers		Integrated Registers
OPD, HIV testing, Emergency, CCS and treatment, NCD screening, PEP, GBV, TPT registers **(n=8)**	→	**Integrated Acute Care register**
ART, VL non-suppressed, HIV-EID, Linkage, AHD, Hepatitis B & C, Nutrition, TB Unit, Presumptive TB, DR-TB, Contact tracing registers **(n=11)**	→	**Integrated Chronic Care register**
Adolescent & young people services, Child, Tetanus Diphtheria Vaccine, Group MCH, ANC, Maternity, Family planning, Postnatal, Neglected tropical disease control treatment **(n=9)**	→	**Integrated Routine Care register***

*To be merged with Acute Care register

Four-Phase Transition Roadmap to Digitalization of Registers



Design & Digitalization:
Engage stakeholders across MoH departments and partners to agree on core data elements. Begin integrating and digitizing registers within the DHIS2 capture app to ensure tools are designed for both paper and electronic use.

Tool Review & Approval :
Draft integrated registers and workflows are validated through MoH working groups and formally approved by the MOH management team to ensure consistency with national policies and reporting requirements

Pilot & Refinement:
Selected districts pilot the integrated registers. Lessons are captured to refine both paper and digital tools, training materials, and supervision processes before national rollout.

Scale-up & Institutionalization:
Nationwide rollout of the integrated registers, with gradual expansion to all districts and facility levels. This phase emphasizes full adoption, ongoing capacity building, supportive supervision, and strengthening ICT infrastructure to sustain reliable nationwide digital reporting

Expected Benefits

Reduced workload for health workers: Integrated and digitized s minimize duplication and save time for patient care.

Improved data quality: More accurate, complete, and timely reporting across service areas.

Strengthened accountability: Clearer performance monitoring and supervision at facility, district, and national levels

Cost savings: Lower costs of printing, distribution, and parallel system maintenance.

Challenges & Risks

- **Resource needs:** Significant funding required for printing, ICT infrastructure, intensive user training and digital literacy support, and supervision.
- **Digital infrastructure gaps:** Limited digital devices and unreliable power supply in some facilities may delay full digital adoption.
- **Coordination across stakeholders:** Alignment among multiple MoH departments, districts, and partners is essential but often difficult.

Next Steps

Step 1: Finalize design and digitization

Step 2: Review and validate digital registers

Step 3: MoH management review and approval

Step 4: Pilot and document lessons

Step 5: Gradual rollout

Step 6: Institutionalize through guidelines

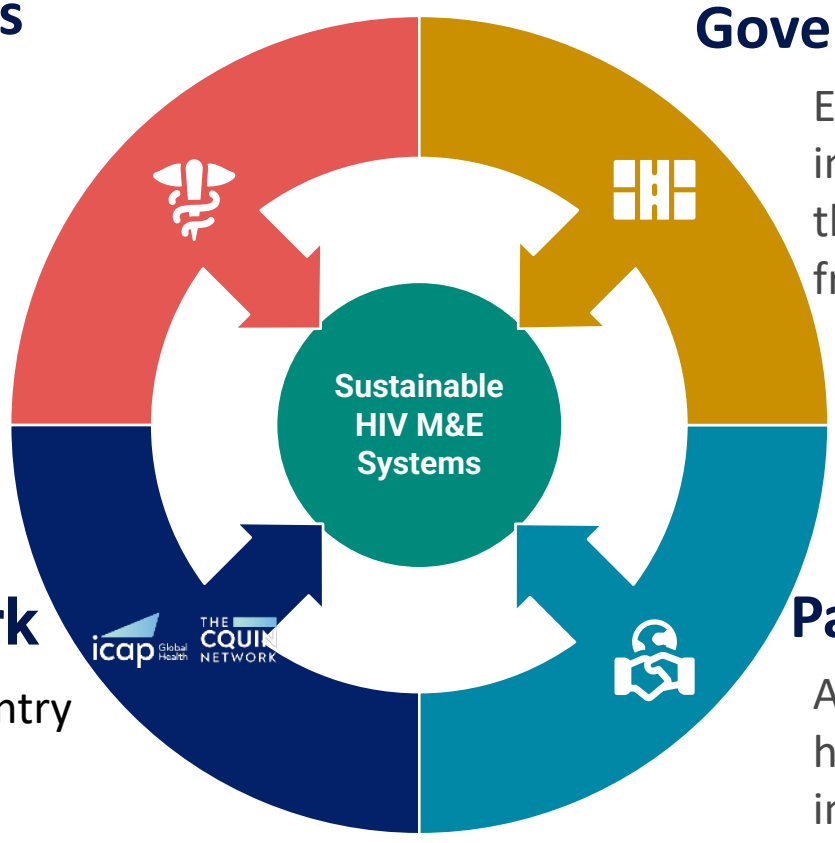
Call to Action

Health Facilities

Champion use of integrated s to improve patient-centered care and reduce data burden

Government

Endorse and institutionalize integrated digital HMIS tools through policy and financing framework



CQUIN Network

Facilitate cross-country learning on digital integration and sustainability models

Partners & Donors

Align support with the national digital health agenda — invest in interoperability, not parallel systems

Building Sustainable HIV M&E Systems- integration and digital transformation are not just technical upgrades- they are the backbone of sustainable, country-owned HIV M&E systems

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