Uganda's Early Infant Diagnosis Laboratory Consolidation Improves Access and Program Monitoring

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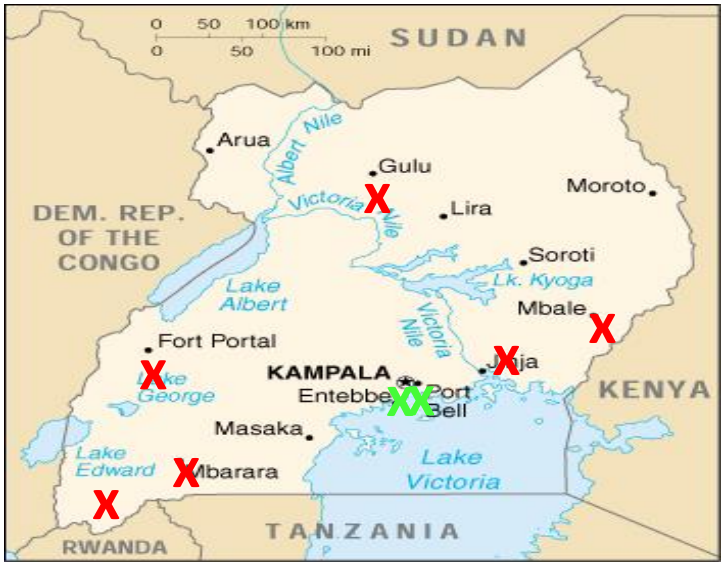
Uganda EID Program

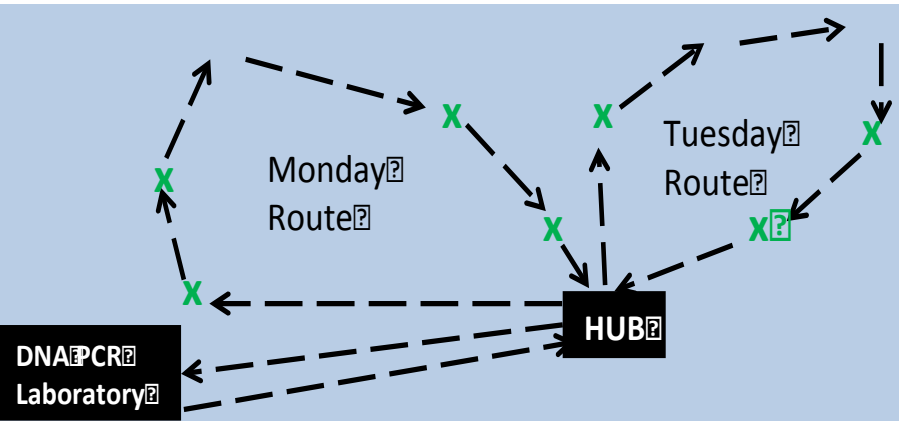
Uganda's original Network of laboratories for early infant HIV diagnosis (need for centralization)

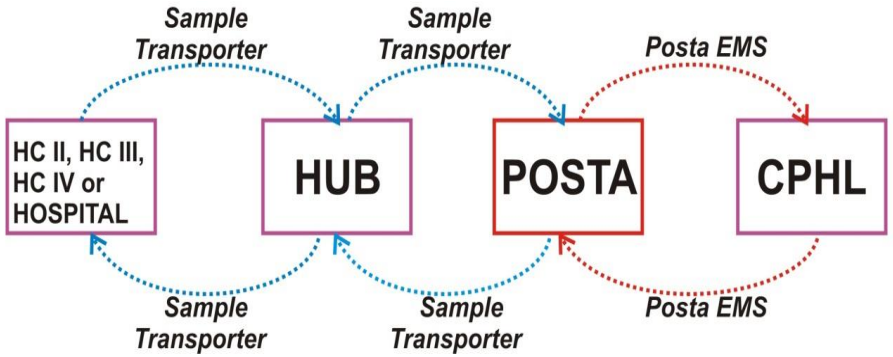
- The MoH's EID program started late 2006 using a next of 8 partner run regional research laboratories, as seen in the map
- Being research labs, which worked sub optimally, the overhead cost per test was high
- The elaborate lab network posed challenges of volume distribution thus resulting in high lab turnaround time



- **Besides, timely diagnosis is heavily dependent on; regular and timely sample collection and dispatch, efficient sample transport, efficient laboratory processing, and rapid transport of results back, which did not exist at the time.**

EID Lab Consolidation and the Sample Transport System

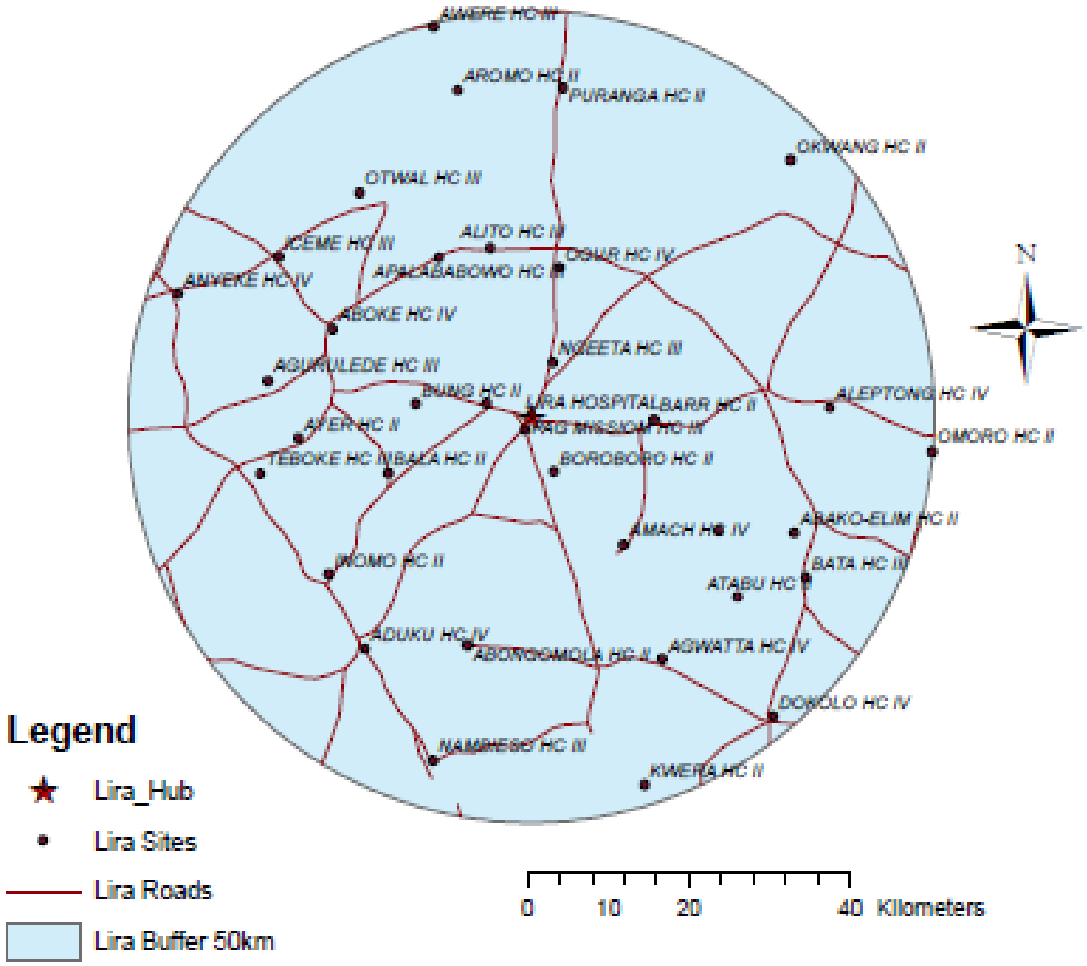




- In order to improve efficiency, cost effectiveness, and country ownership, the Ministry of Health setup one EID centralized lab, based in Kampala to handle all HIV testing for exposed infants in the country.
- The lab was initially installed with 2 automated Roche analysis and 4 lab technologists
- It currently has 3 Roche platforms 5 Technologists and runs between 2000 and 2500 samples per week from over 2000 health facilities

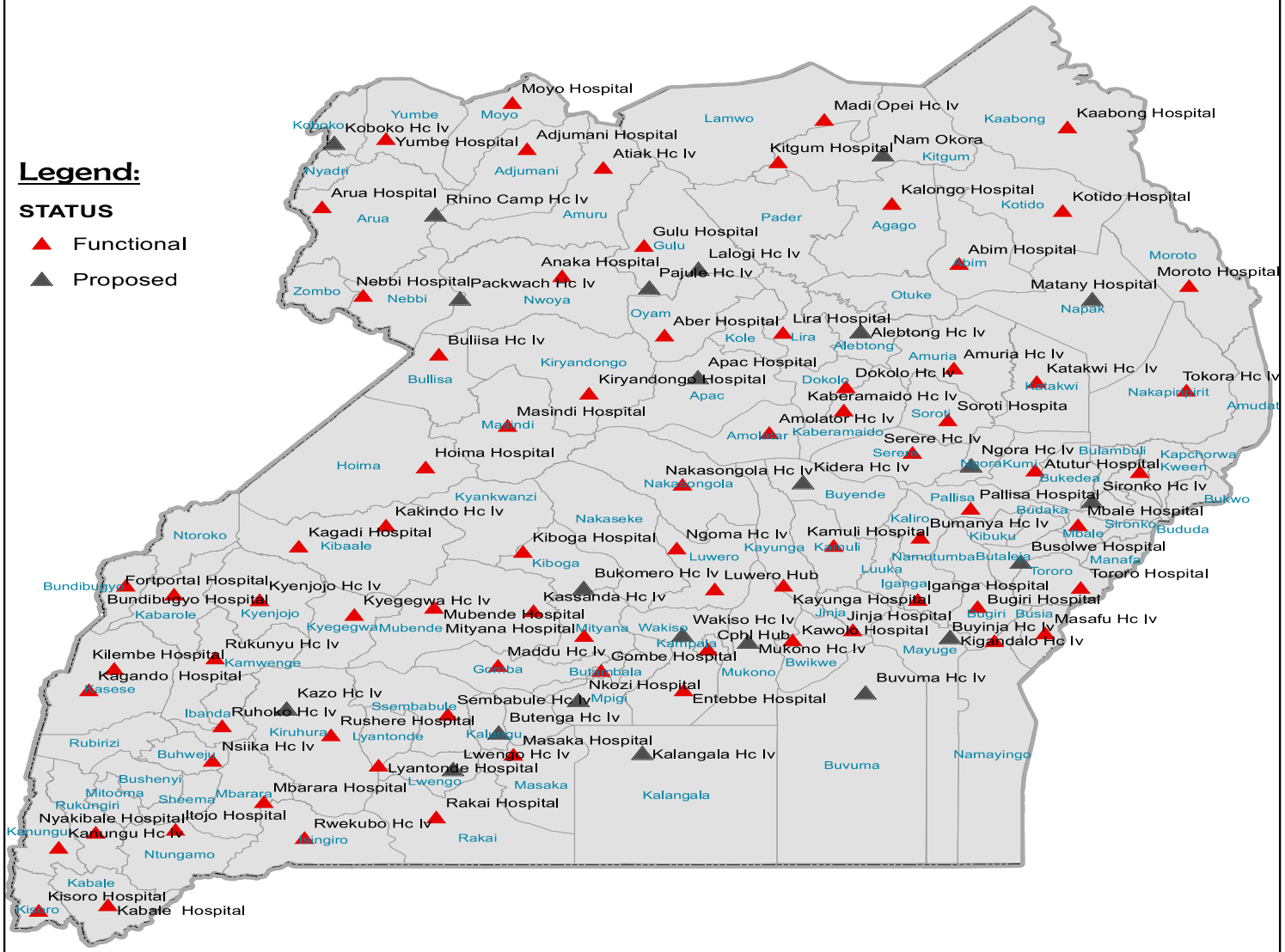
- This lab was powered by a hub based Sample Transport Network, which transports the sample from facilities at the country side to the central lab, through a network of hubs which operate with a radius of 30 to 40km
- Though started as system for transporting DBS for EID, the sample transport network has evolved into the National system for transporting all sample types

Each hub serves an average of 25 to 30 health facilities within a radius of 30-40Km radius e.g. Lira hub



- The network is now made of 77 functional Hubs reaching an average of 2300 health facilities and is soon scaling to 100 hubs
- The hubs have evolved into centers for extended lab services for sites in their catchment areas and only refer highly specialized samples to national reference labs.

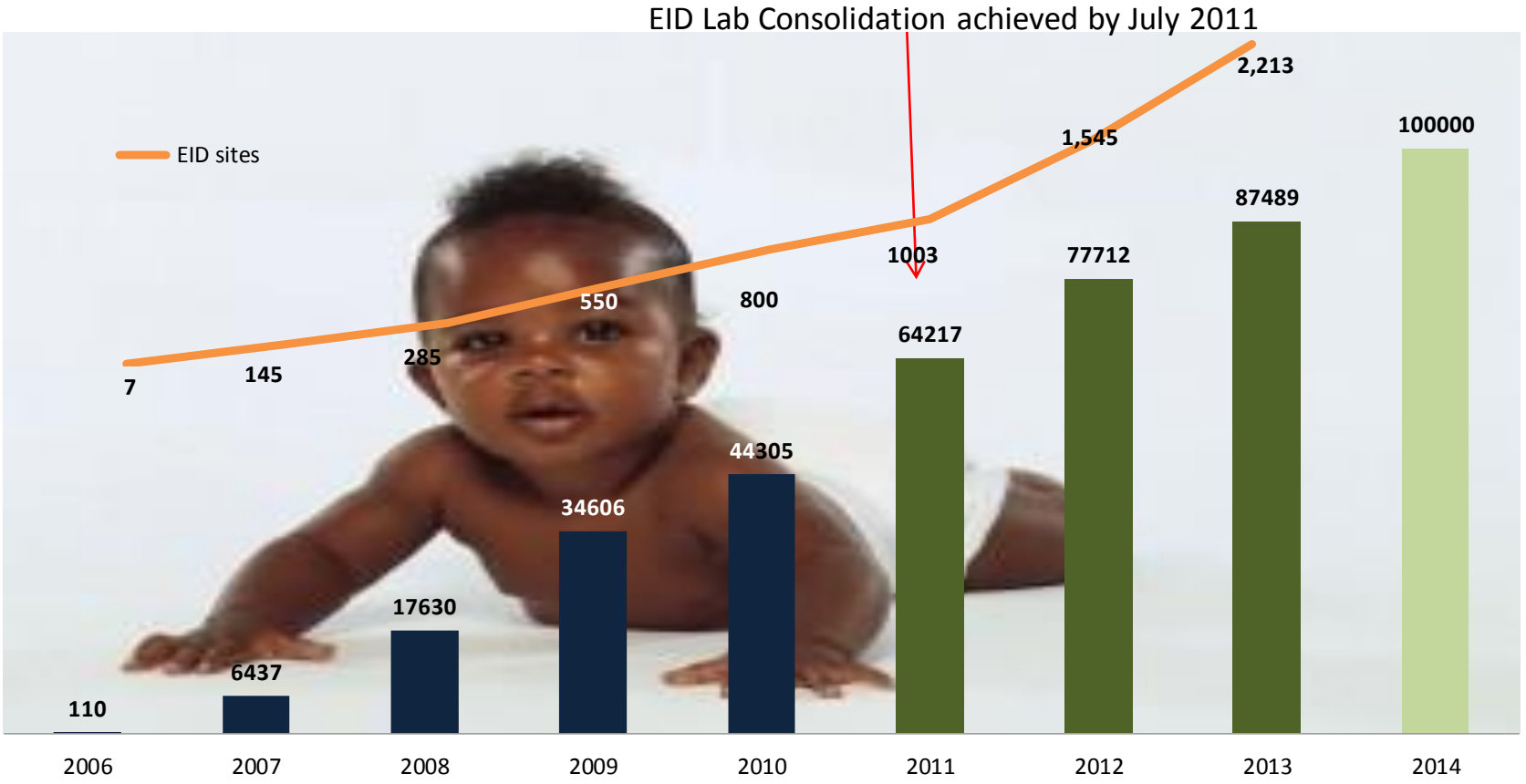
Map of Uganda Showing EID Hubs March 2014



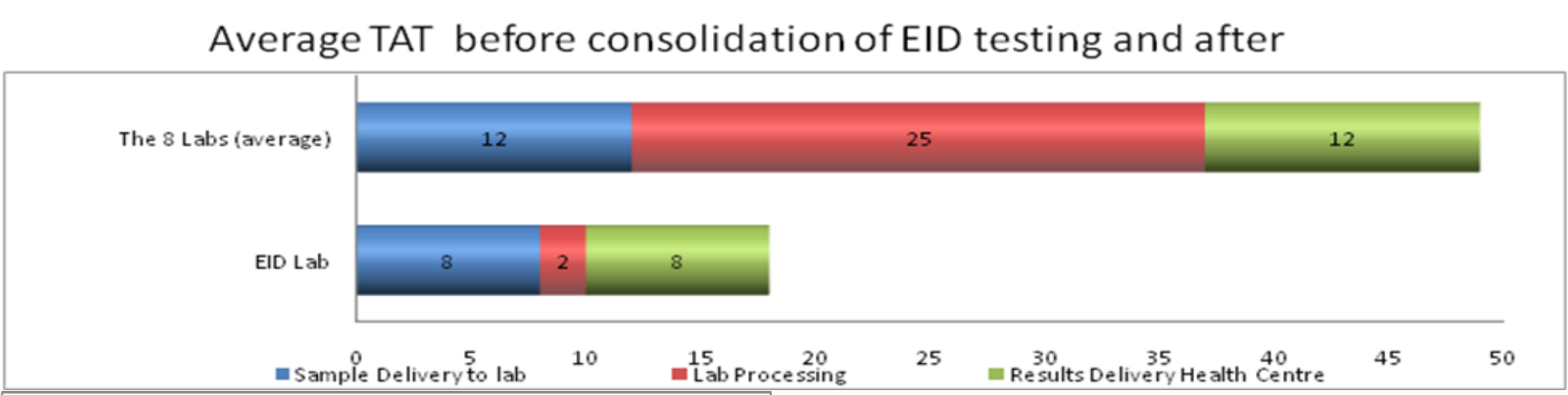
Date: 3/14/2014

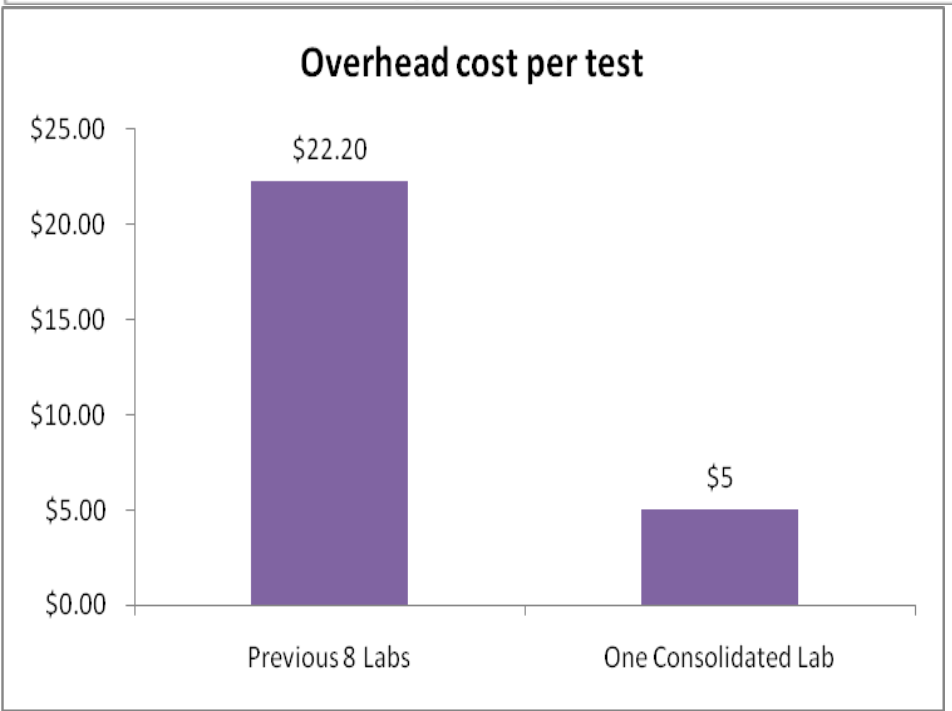
Impact of EID Centralization – Improved Access

- The centralized laboratory begun operating in July 2011 being empowered by the sample transport network, and since then drastic improvements have been observed in the program.
- Access in terms of patient numbers and number of health facilities served have drastically increased since.



Improved efficiency and cost effectiveness





Other milestones

- Development of an in house LIMS, which has automated lab operation process result processing and printing and generation of customized reports for M&E and posts them on a dashboard.

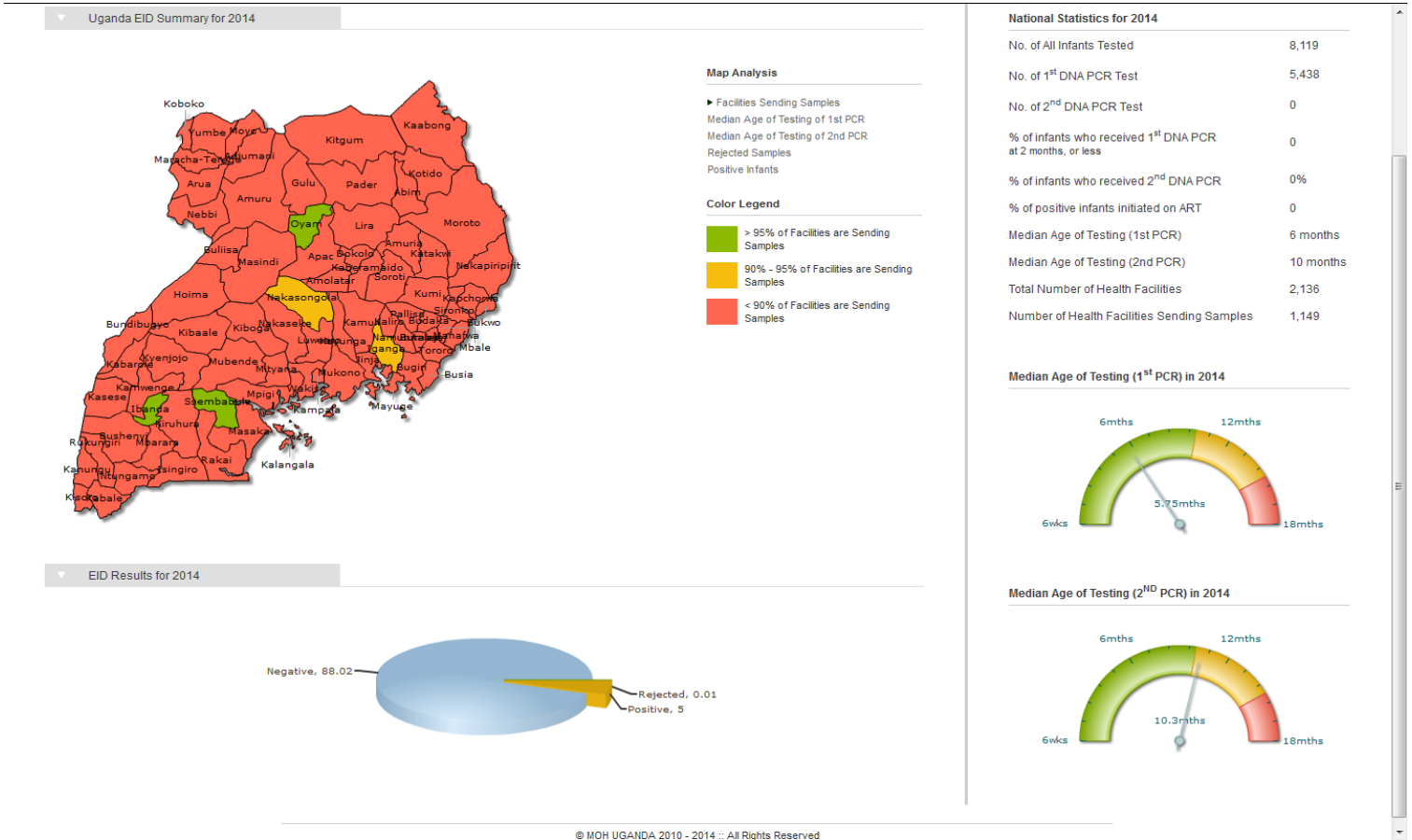
- Acquisition of a data centre, which supports the LIMS, with massive servers that can support many health programs with data storage and communication capabilities

Improved program monitoring - The EID database has been made web based and posts a web dashboard

Central level analysis and reporting

Different stakeholders are be able to log in onto a web based platform and see the EID statistics for their particular facilities and tailor their interventions accordingly.

Several program monitoring analytics are automatically analysed and posted on the dashboard, broken down by IP, ACP to be able MOH to view Initiation rates, average age of initiation, EID test volumes TAT etc.



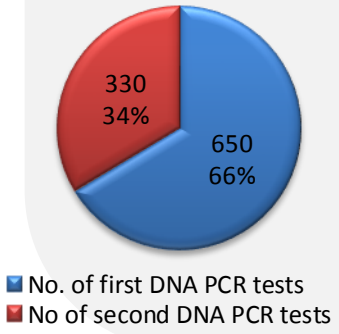
To improve partner and district monitoring of performance, we input partner and district specific dashboards

Implementing Partner: Baylor Uganda *(or could be district name)*

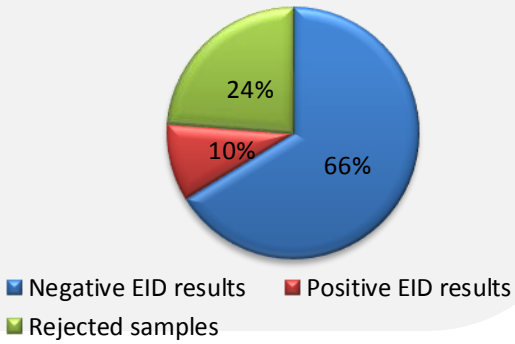
Number of test

	Actual	Target
No. of all Infants Tested	2300	
No. of DNA PCR tests	980	
No. of first DNA PCR tests	650	
No of second DNA PCR tests	330	
Median age of testing (1st PCR)	2 months	
Median age of testing (2nd PCR)	28 months	
Positivity Rate for 1st PCRs	6%	

Number of 1st versus 2nd DNA PCR tests conducted:

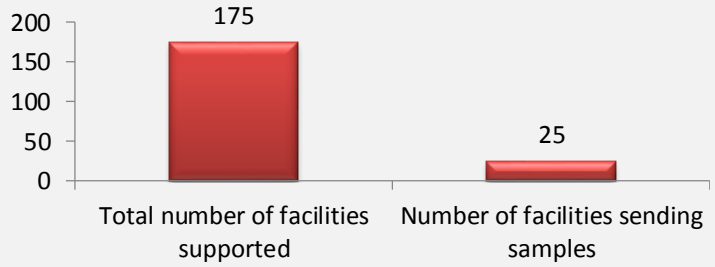


Disaggregation of EID test results:



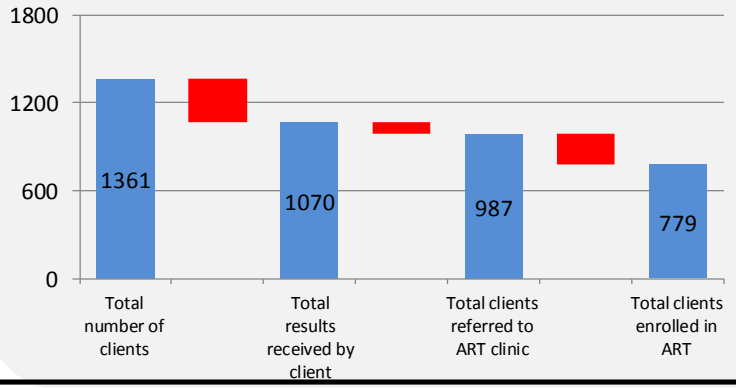
Facilities Supported

of the regional facilities supported vs facilities sending sar

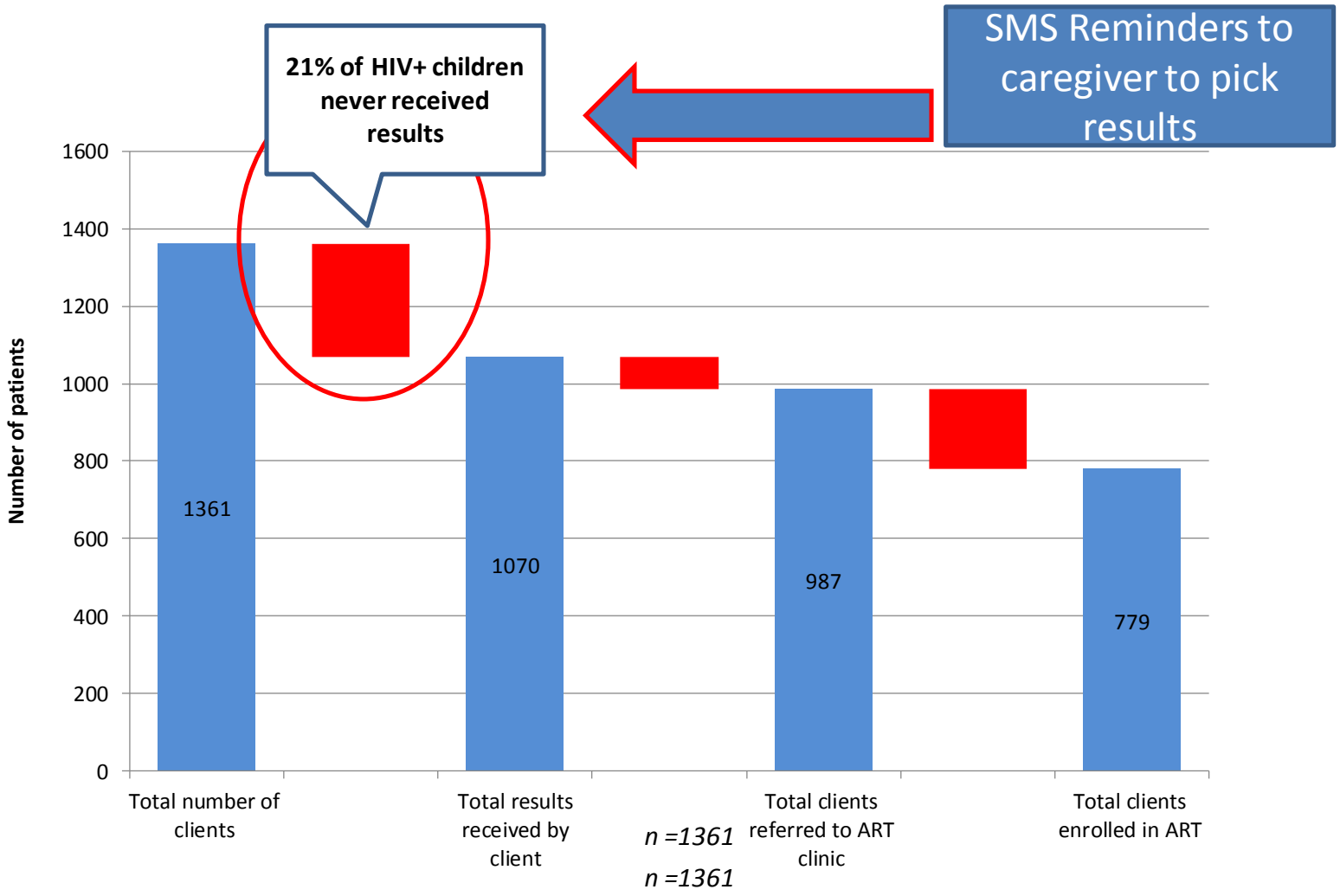


Treatment

HIV + EID Cascade:

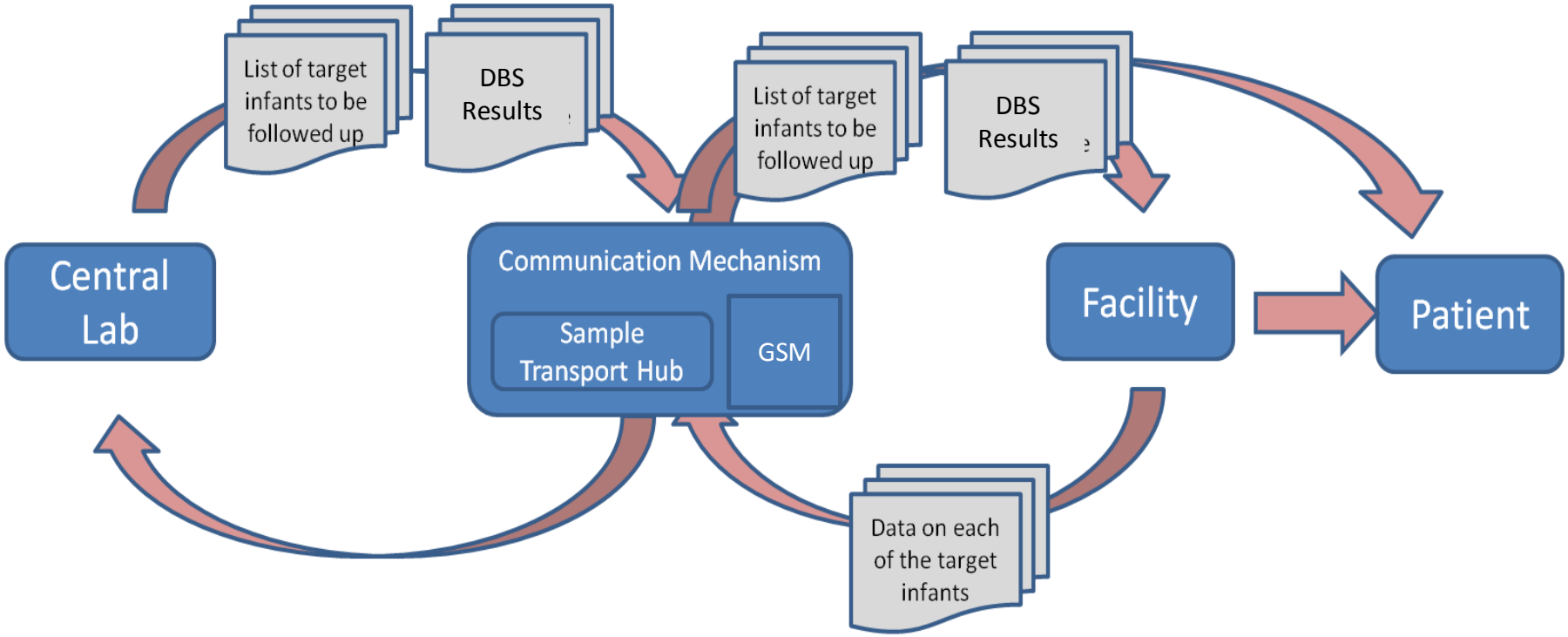


We still face a challenge of poor collection of results by the clients. SMS messages integrated in the database will send automatic reminders to caretakers

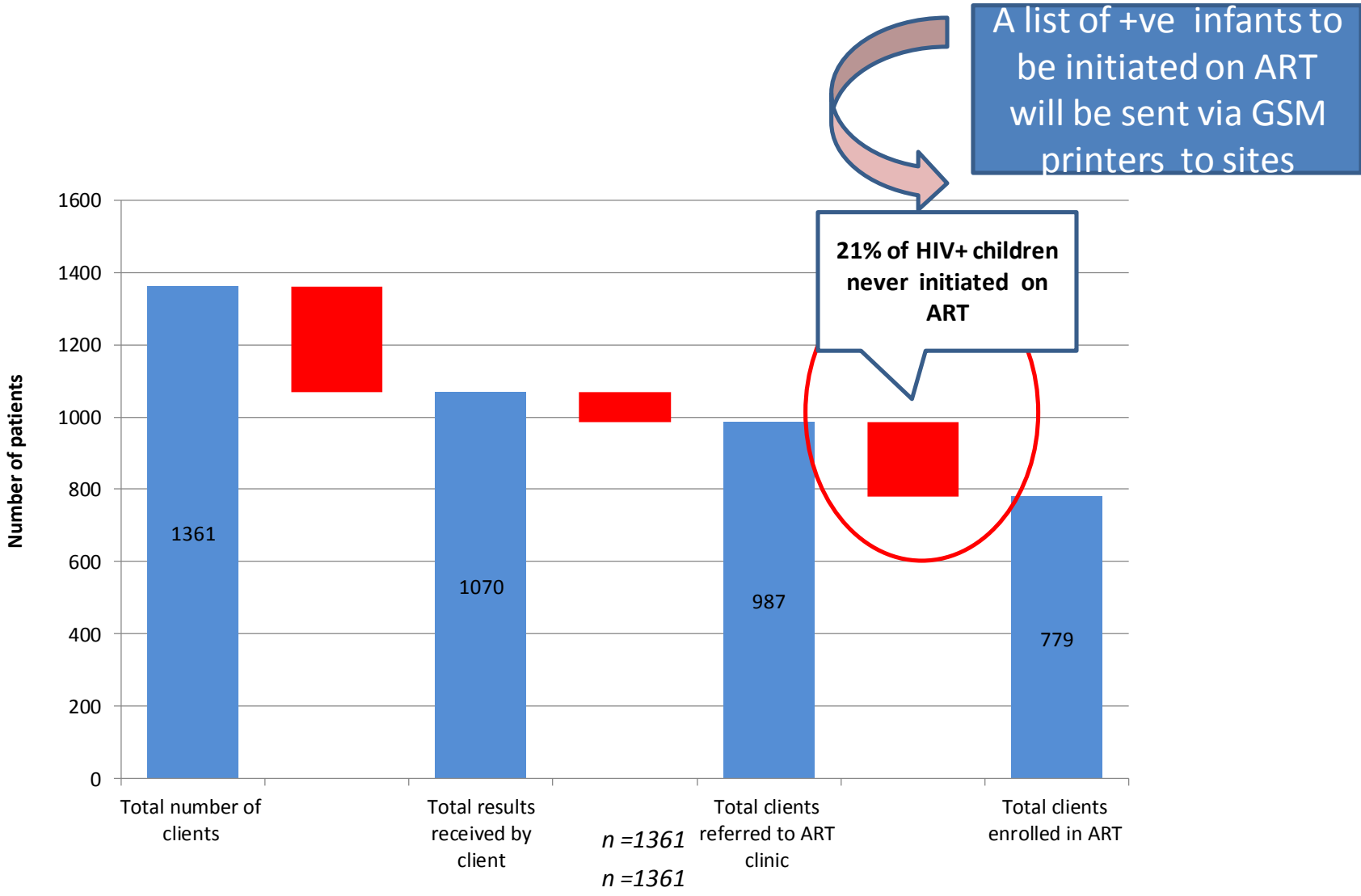


GSM printers, installed at hubs and connected to the data center at the lab are easing transmission of results in real time

- These special printers are helping to cut further the delay in returning results to facilities, and will increase pediatric ART initiation
- This intervention will provide facilities with infant results in real time and also a regular list of positive infants that require follow up and a report on their performance on following up children will regularly be communicated through these printers.



By using GSM printers based at hubs we are improving ART initiation rates of HIV positive infants



Conclusion

- The centralizing EID services at CPHL and the HUB transport system have increased access to timely laboratory diagnosis and ART initiation for exposed infants in Uganda
- Uganda's innovative handling of the EID programme has reduced cost, improved efficiency, coordination and monitoring of EID and PMTCT services
- Though the testing process improved there is need to strengthen system at the health facility for follow-up and link to care for tested infants

Conclusion

- The success of Uganda's centralized EID program has been an inspiration for setting up similar laboratory networks like for Viral Load and neonatal sickle cell screening programs
- The sample transport network which evolved out of EID centralization, has resulted into a network of 100 laboratory hubs which through sample transporters attached to each hub are serving over 2500 health facilities with advanced laboratory services