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**AFRICA CDC WORKSHOP**

**ADDIS ABABA, ETHIOPIA**

**MARCH 27, 2017**

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**AN INNOVATIVE APPROACH: NEAR REAL-TIME  
SOLUTIONS FOR LAB-BASED  
ELECTRONIC DISEASE SURVEILLANCE**



- ▶ Collection of data should be **automatic** and **embedded** in current workflow of people and systems.
- ▶ System **must give value** at each level.  
(e.g. in Lab, community, MoH, and beyond)
- ▶ System **must trigger action** for targeted effective response.

# A PRIMER ON “CONNECTED DIAGNOSTICS”



## Secure Communications Network

Special firmware  
Global sim  
Cell boosters  
External antennas

## Server

Country-level early warning  
Disease intelligence  
Reports, alerts, notifications  
Connect to other Health Systems

GeneXpert™  
Abbott m2000  
Roche COBAS  
Alere Q...

# PUT PATIENTS ON TREATMENT FASTER



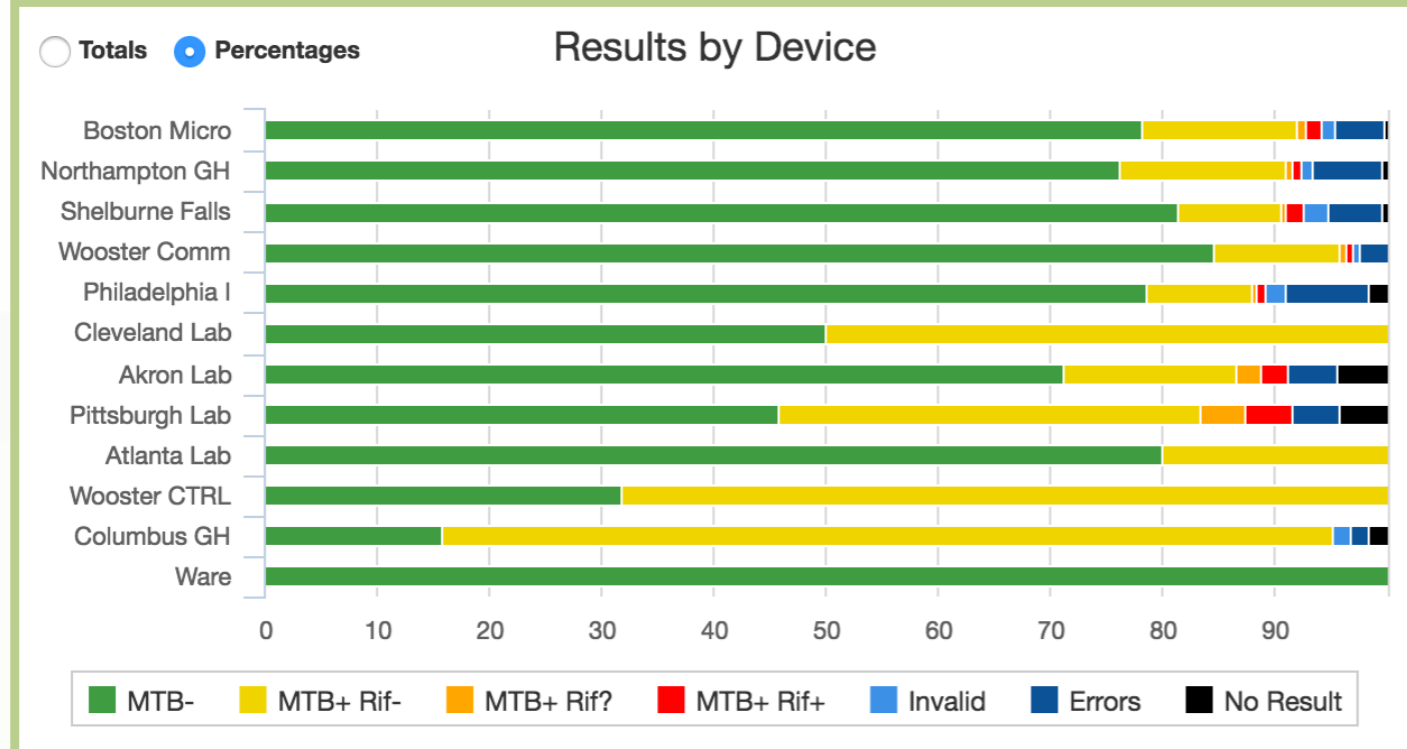
Hello, **Jeff Takle** **GeneXpert TB/RIF Result** **United States** **Log Off**

**Dashboard** [Devices](#) [Results](#) [Contacts](#) [Notifications](#) [Inventory](#) [Reports](#) [Help](#) [Admin](#)

## Dashboard

12 Devices, 18,774 Results

**Device** 
**State** 
**County** 
**Date Range** 
**Month**
**Display...**

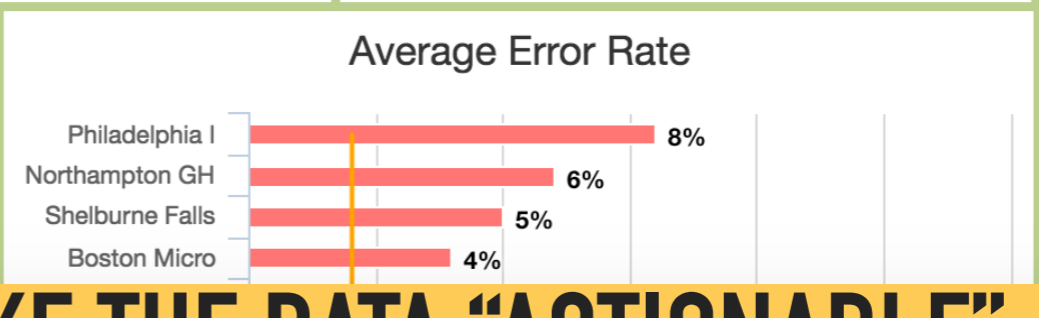
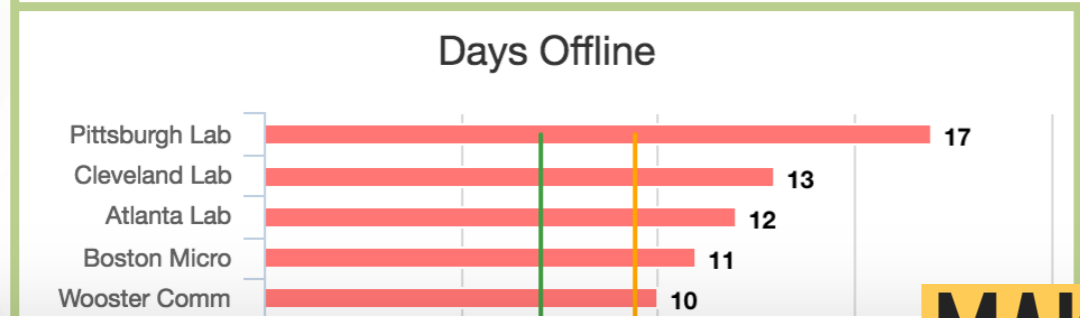


### Recommendations

**Philadelphia Lab I**  
High error rate (8%).  
[Go to device dashboard for details.](#)

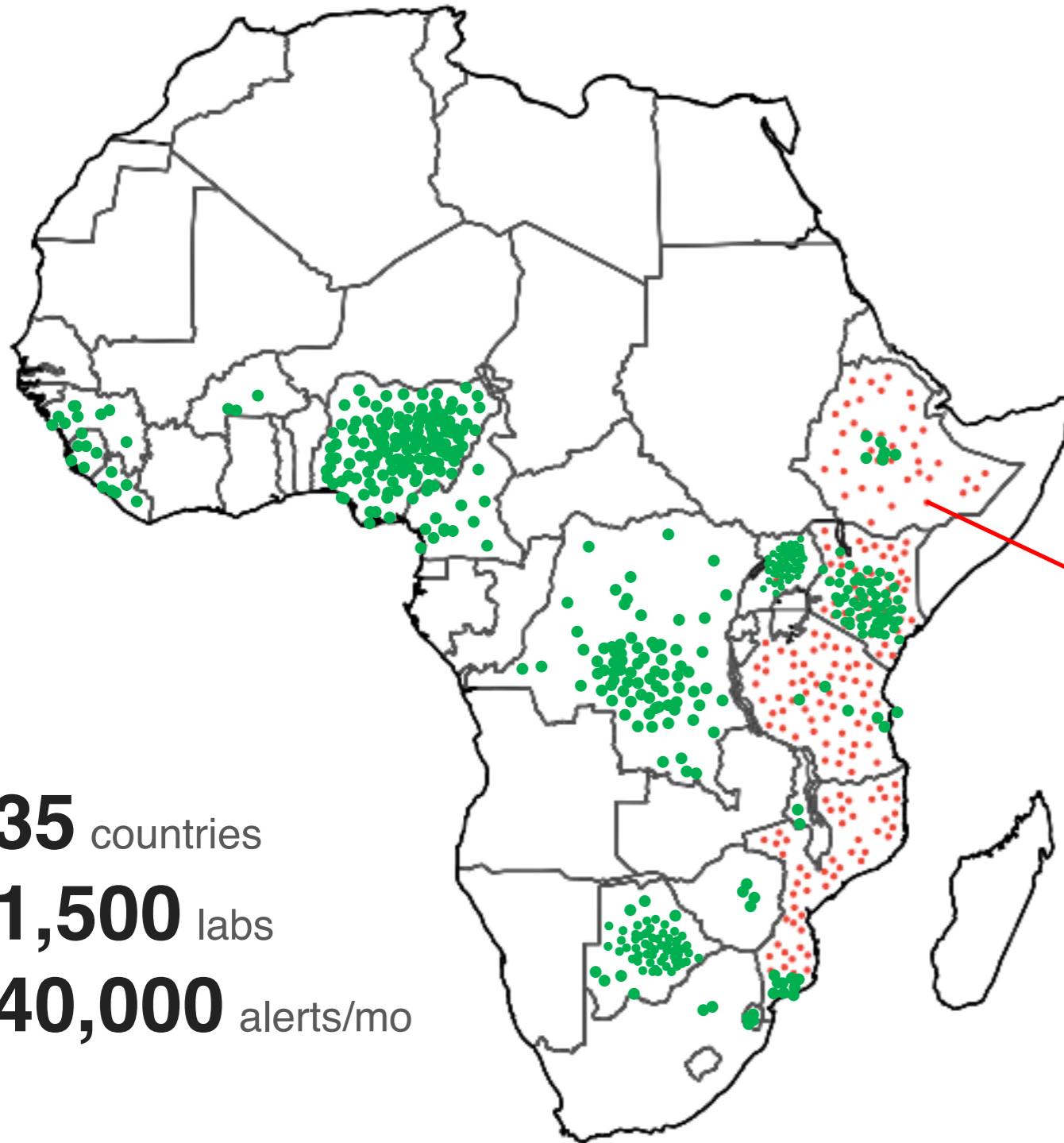
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**Pittsburgh Lab**  
Hasn't reported in 17 days.  
[Call and remind them to connect.](#)



**MAKE THE DATA "ACTIONABLE"**

# INTEGRATED DISEASE SURVEILLANCE



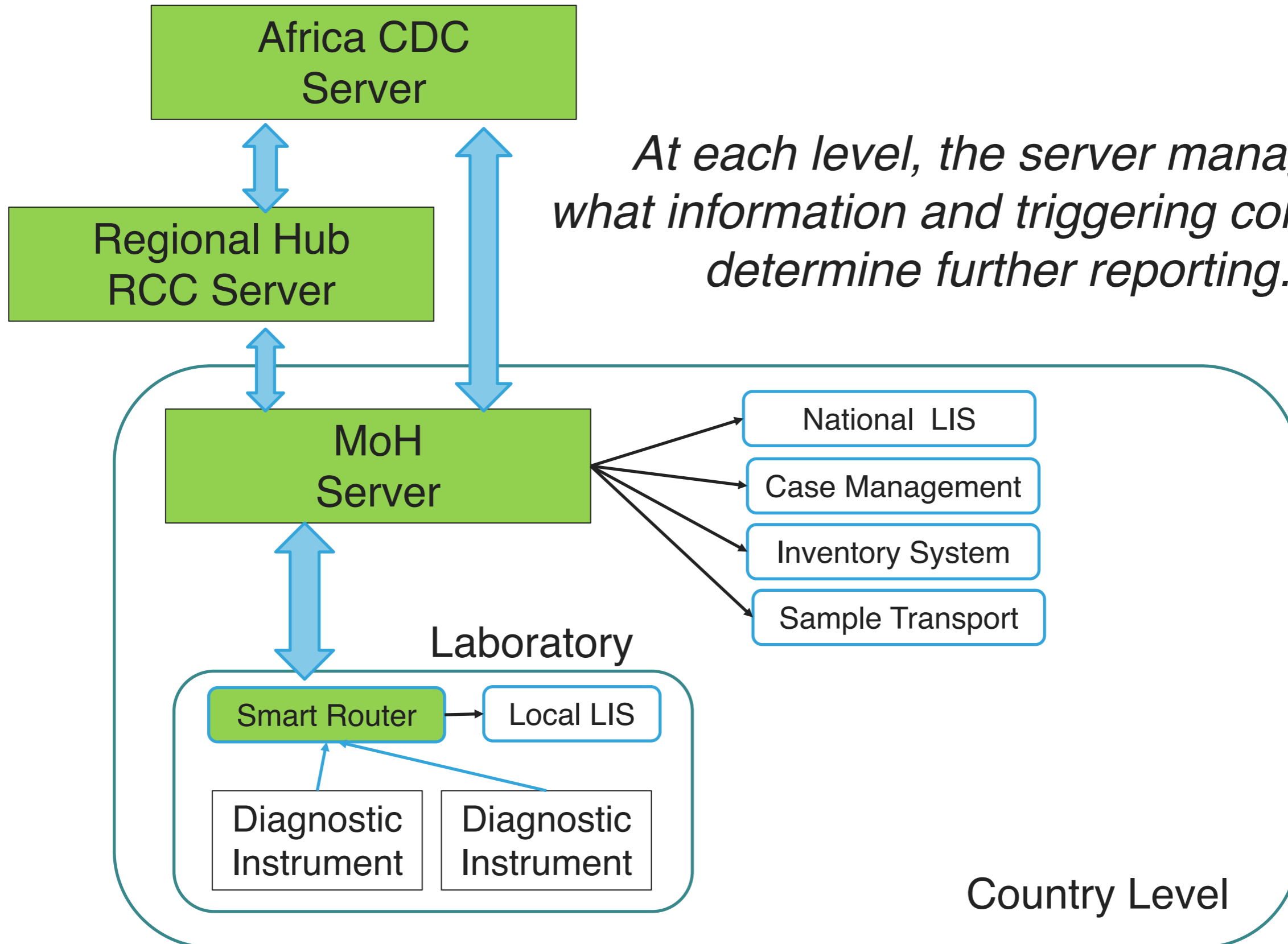
**35** countries  
**1,500** labs  
**40,000** alerts/mo

## GxAlert

- **Half of all GeneXperts in Africa are already connected**
- MDR-TB, HIV, Ebola, AMR...
- Adding Roche COBAS, BD MGIT, LPA...
- Can expand to Animal, Environmental
  
- Geo-coded surveillance
- Standardized data collection, linked to country Health Information Systems

### Individual Probe Results

Probe A Ct	Probe A Endpt
12.20	118.00
Probe B Ct	Probe B Endpt
13.30	112.00
Probe C Ct	Probe C Endpt
12.40	213.00
Probe D Ct	Probe D Endpt
0.00	2.00
Probe E Ct	Probe E Endpt
13.60	112.00
Probe SPC Ct	Probe SPC Endpt
24.70	253.00
QC 1 Ct	QC 1 Endpt
0.00	0.00
QC 2 Ct	QC 2 Endpt
0.00	0.00



# WHAT COULD **EARLY WARNING DISEASE INTELLIGENCE** DO DURING THE NEXT OUTBREAK?



- ▶ Early Warning and Alert System @ Patient Zero
- ▶ Country EOC, Regional Hub, Africa CDC instantly sharing the same "view"
- ▶ Country uses platform for routine health operations
- ▶ Has embedded capability to "escalate" to Regional Hub, coordinate across hubs
  
- ▶ **First steps**
  - ▶ Leverage existing footprint with MDR-TB
  - ▶ Connect the National Reference Laboratories

# ACKNOWLEDGEMENTS

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- ▶ **Africa CDC**
- ▶ **35 MOH Pioneers**
- ▶ **GLI-Africa**
- ▶ **GLI**
- ▶ **WHO**
- ▶ **USAID**
- ▶ **ASLM**
- ▶ **CDC**
- ▶ **Global Fund**
- ▶ **Gates Foundation**





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