

# ***Establishing EVD testing at a Mobile Laboratory using GeneXpert Technology in Liberia***



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# Post-EVD outbreak in Liberia

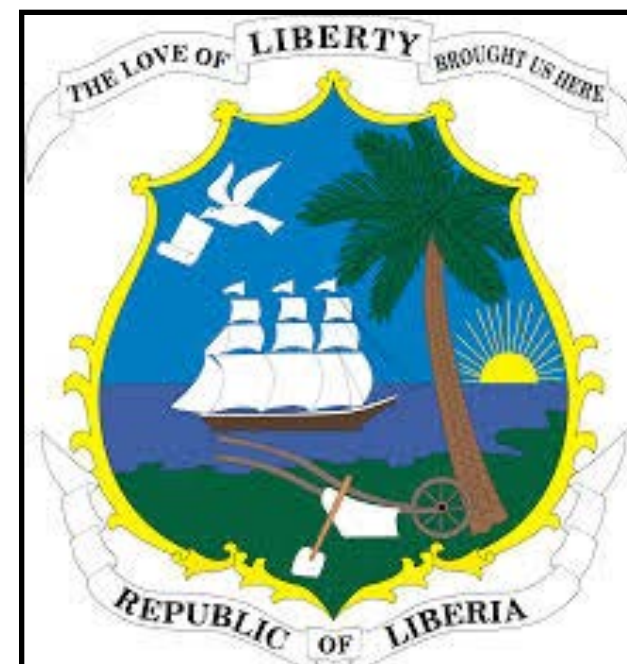
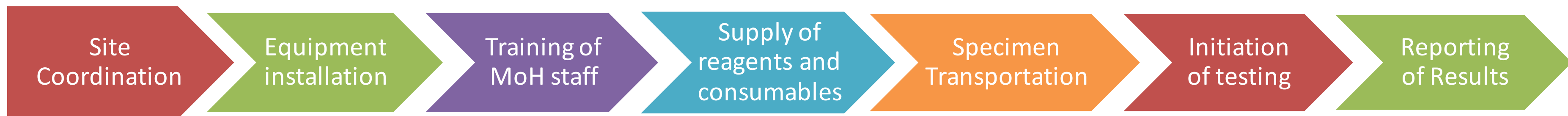
- First interruption of transmission WHO Declaration
  - 9<sup>th</sup> May, 2015
- International partners exited
- Reduced Lab testing capacity
  - 11 to 3
- **EVD Cluster June 2015**
- After 42 days Liberia entered 90 day period of heightened surveillance
- Unanticipated increase in surveillance Specimens
- Backlog in system ~ **900** laboratory specimens
- Turn around time up to **2 weeks**



No Visibility

# Solution – Redeploy Mobile Laboratory

- Mobile Lab donated to MoH by Dutch Government relocated to ETU
- Partner coordination and collaboration





# Mobile Laboratory



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# Xpert Ebola Test - GeneXpert technology

- WHO Emergency use assessment and listing for EVD IVD's
  - 8<sup>th</sup> May 2015
- FDA Emergency approval
  - March 2015
- Approved by MoH for use as stand alone test for EVD in Liberia
  - September 2015
- Easy to use, rapid test, single cartridge
- RT-PCR – high sensitivity and specificity
- Cost comparison to RT-PCR - \$20 per test





# Laboratory Workflow

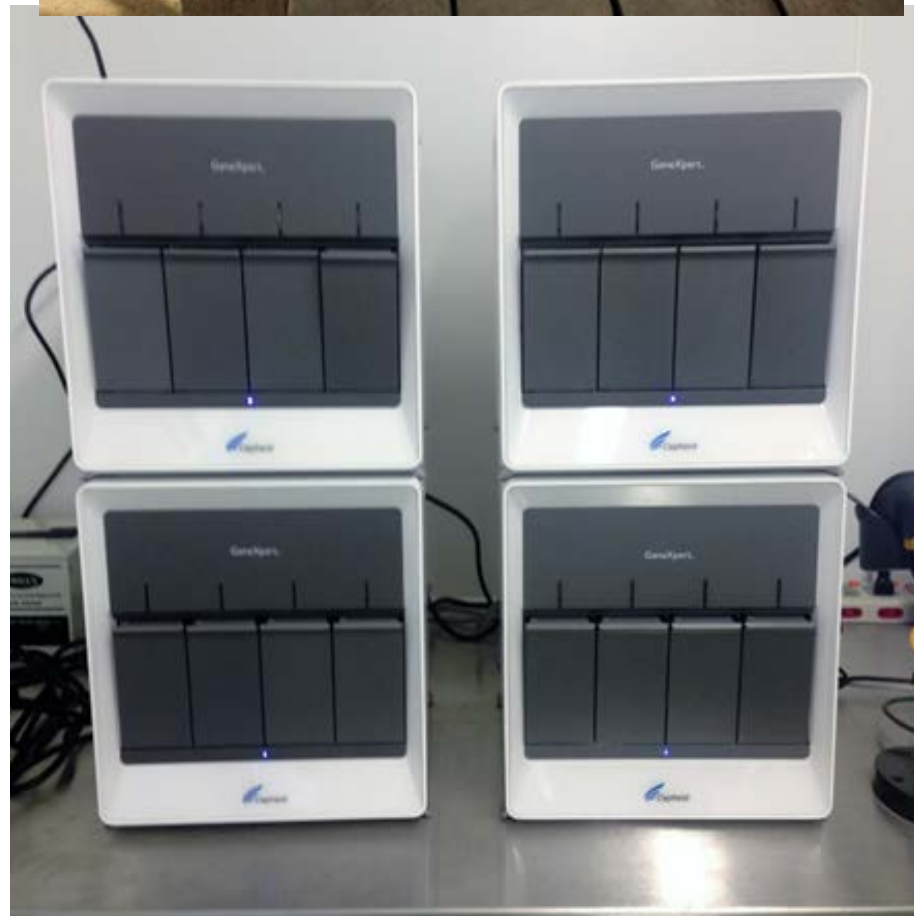
## 1. Specimen Reception



## 2. Specimen Processing and Inactivation



## 4. Test run on Instrument Result available within 2 hours



## 3. Inactivated sample transferred to cartridge



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# Impact on Response

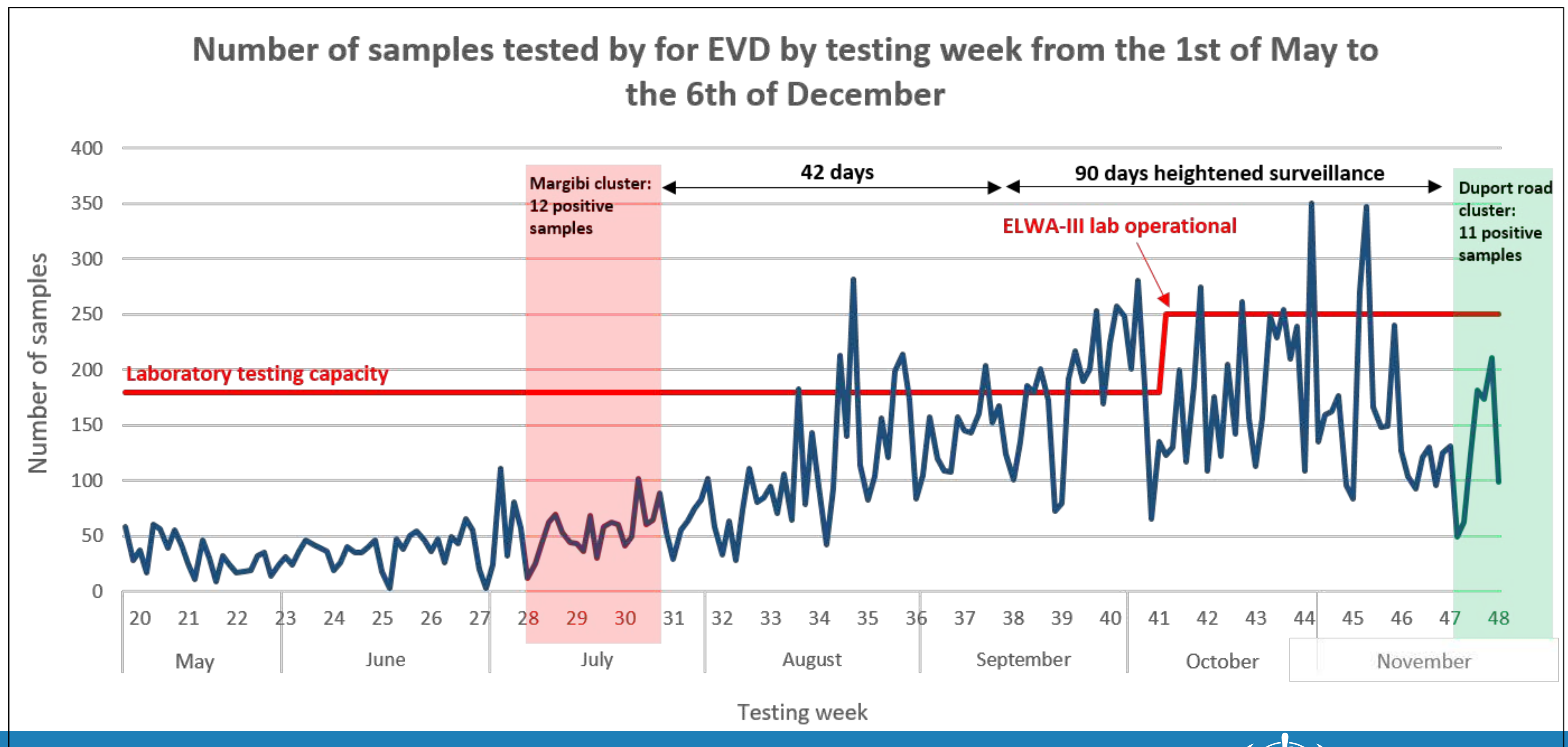
- Surge capacity for Surveillance
- Outbreak Detection and Management
- Case Management
- Laboratory Systems Strengthening





# 1. Surge capacity for Surveillance

- Increased testing capacity ~ 64/day
- Backlog reduced to zero in ~ 4 weeks





## 2. Outbreak Detection and Management

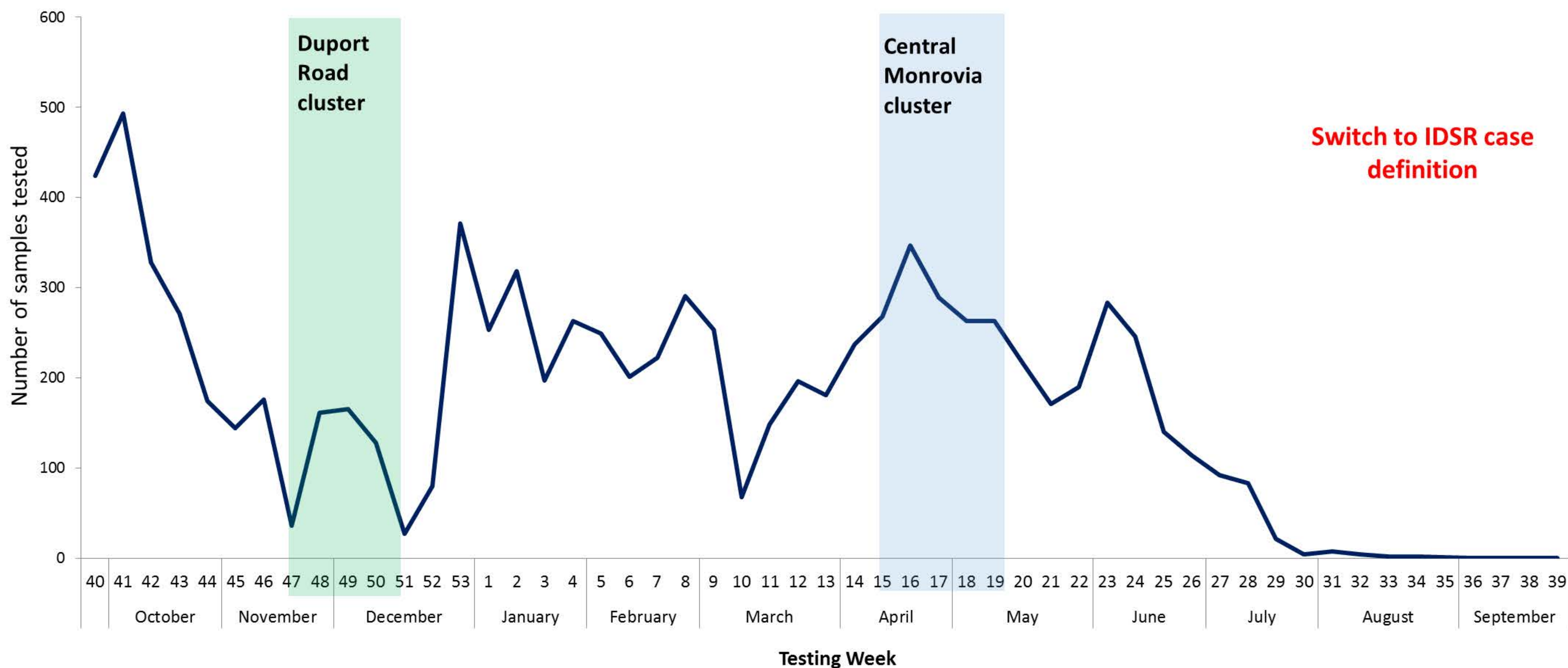
- Detection of Nov 2015 Cluster
  - Specimen referred from tertiary hospital
  - Confirmed cases (3) monitored
- Reduction in Turn around times for priority specimens to 2 hrs
- Priority specimens from suspect cases in community - Field blood draws
- Management of April cluster



# Outbreak Detection and Management

>9000 specimens tested to date over 1 year of operation

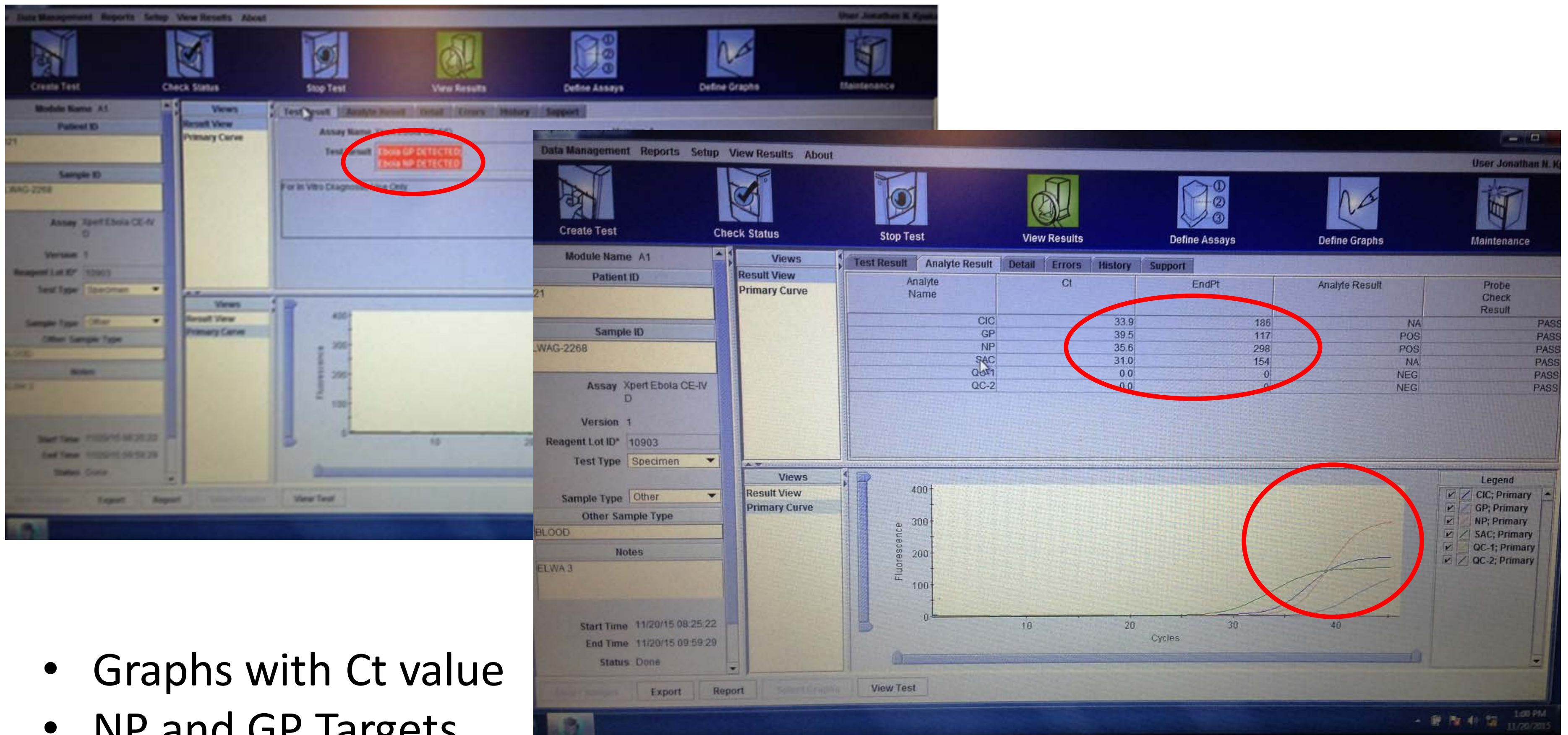
Number of samples tested for EVD by the ELWA III Laboratory by testing week, September 2015 to September 2016



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### 3. Clinical Management – Ct values



- Graphs with Ct value
- NP and GP Targets
- Ct values correlation with Viral Load
- Treatment – Zmapp
- Patient care, recovery and discharge



# 4. Laboratory Systems Strengthening

- Sustainability in Liberian setting
  - Requires minimal training
  - All reagents contained within cartridge
  - Storage at room temp
- Building capacity
  - 19 instruments at selected sites throughout country
  - Training Lab technicians and clinicians at selected sites
  - Rapid diagnostics of EVD to support isolation facilities
- GeneXpert Implementation Plan
  - Integrated testing management and treatment of HIV and TB
- Decommission Lab
  - Remain on stand-by mode in the case of a re-emergence of EVD

# Thank You

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