

# Experience and response of Suriname's National Public Health Laboratory to Chikungunya



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# Types of tests done in Suriname

- ▶ PCR - in house test based on SYBR Green - Academic Hospital Laboratory
- ▶ Commercial PCR - Medical Research Institute (MWI)
- ▶ Euroimmun IgM Immunofluorescence assay (IFA) - Academic Hospital Laboratory
- ▶ CTK Biotech OnSite IgM Combo Rapid test Cassette - Private Laboratories



# Types of tests Central Laboratory

- ▶ Euroimmun IgM and IgG Immunofluorescence assay (IFA)
  - ▶ Training, validation and quality control by ERASMUS MC Virology Laboratory



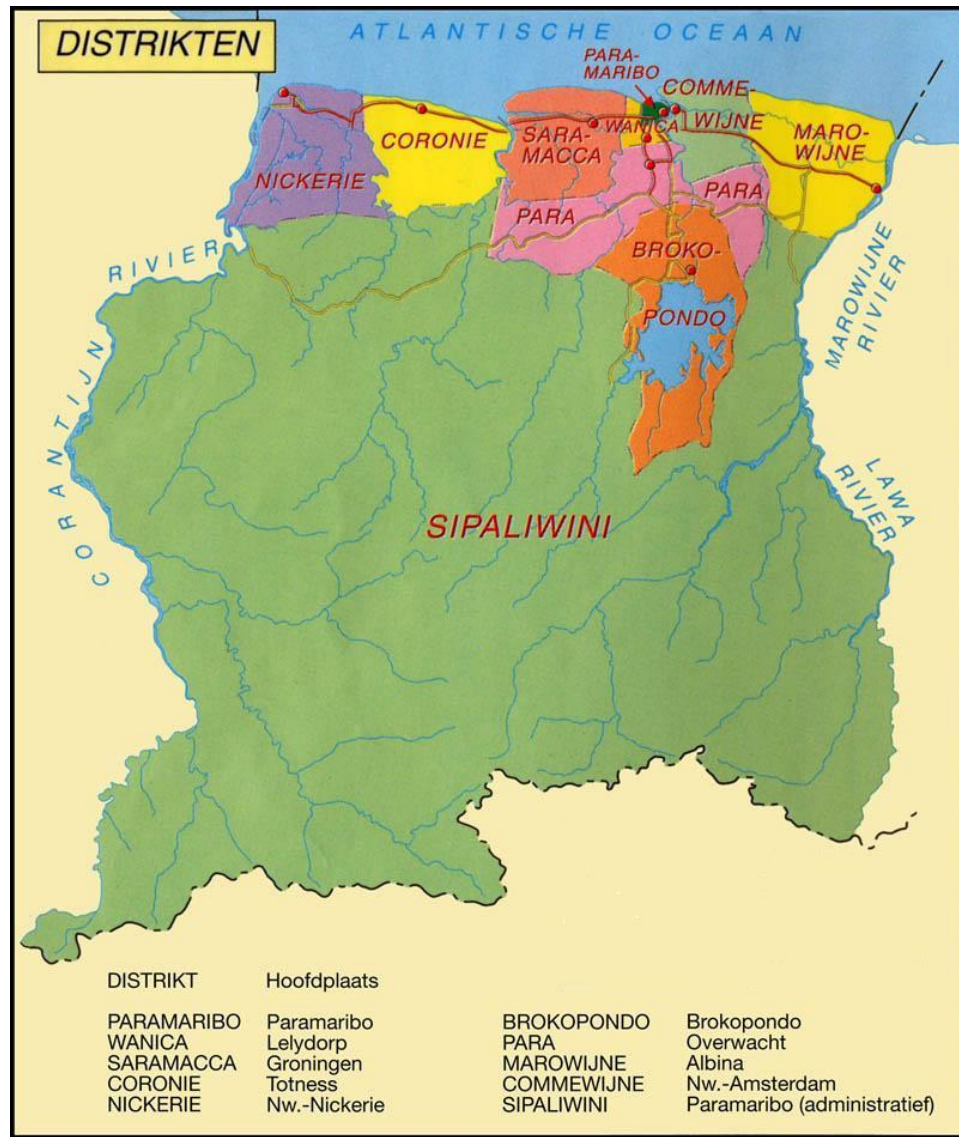
# First positive case

- ▶ 6/6/2014 Confirmed first positive case
  - ▶ 45 year old male travel history to
  - ▶ Date of onset 28/04/2014, sample taken 06/05/2015, tested 06/06/2014
  - ▶ Symptoms: fever, myalgia, malaise. Note no arthralgia
  - ▶ Family members (2) also tested positive by IgG IFA in June 2014
- ▶ Local transmission confirmed mere weeks later.
  - ▶ Suspected that Chikungunya entered Suriname via various routes



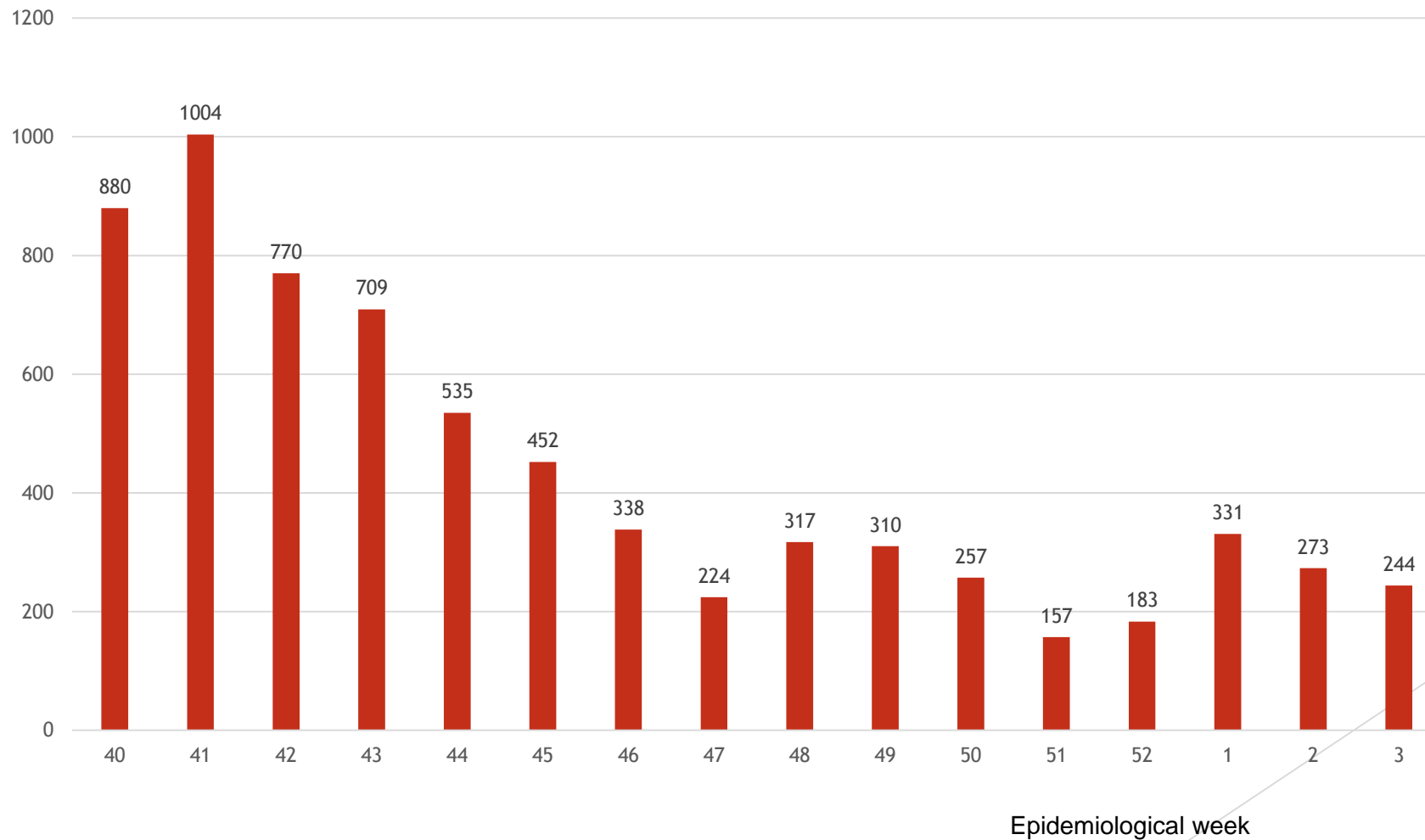
# Coastal areas

## Regional Health Service care areas



# View of cases in coastal areas

RGD 2014 & 2015 Surveillance Fever & Arthritis

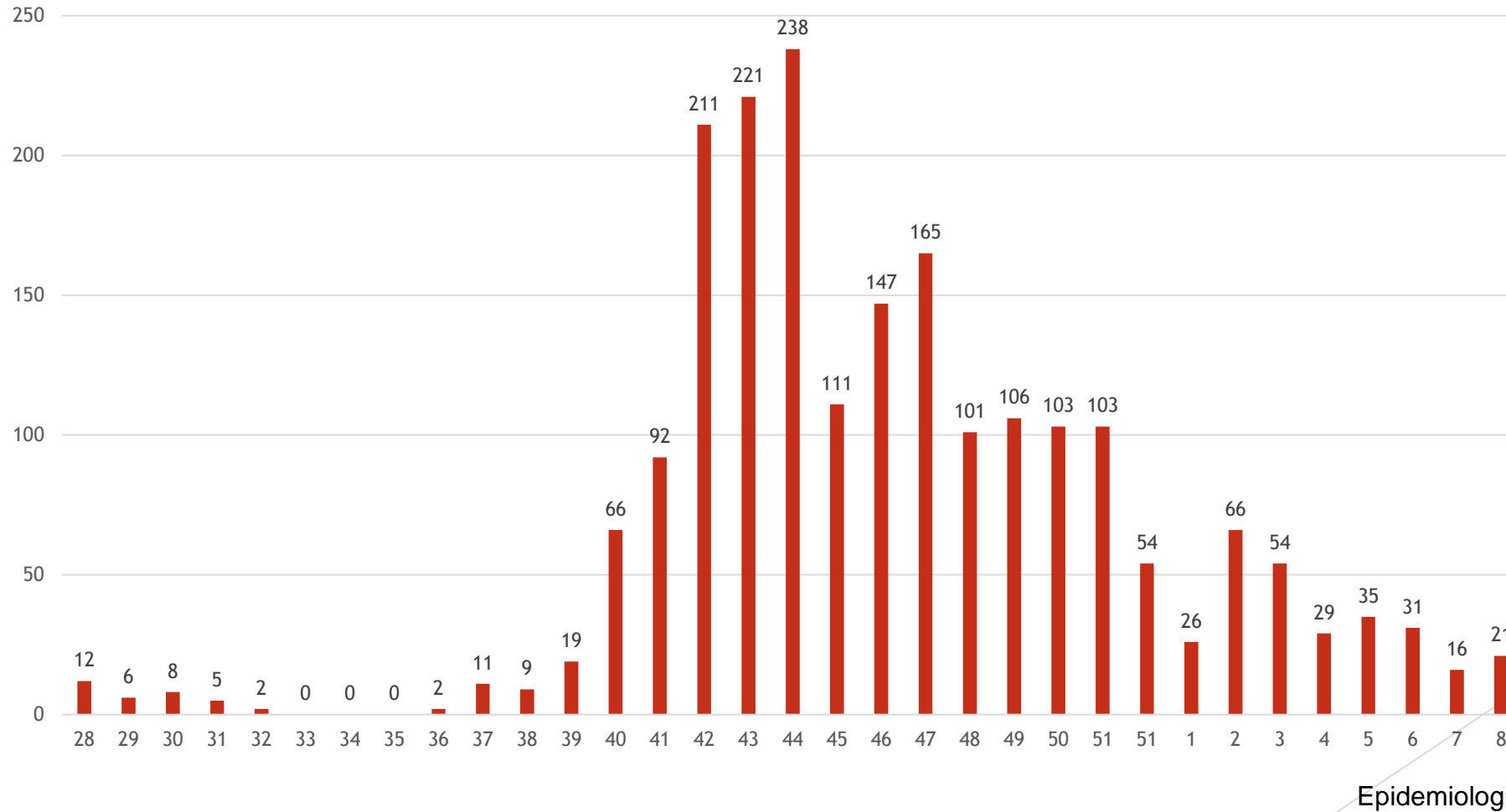


# Remote interior areas Medical Mission care area



# View of cases in remote areas

Medical Mission 2014 & 2015 Surveillance Fever & Arthritis





# Dissemination of Chikungunya - Fight mosquito populations

- ▶ Follows a similar pattern as the Dengue epidemics.
- ▶ Chikungunya is concentrated in several problem coastal areas (Albina, Groot Henar, Zanderij, 5e Rijkweg) and neighbourhoods (Latour, Geyersvliet) in Paramaribo.
- ▶ Rapid spread in remote interior areas
- ▶ Entomology department of BOG tracks mosquito populations by placing ovitraps in hospitals, care homes, schools and neighbourhood areas. They work closely with Environmental Health of BOG to reduce these populations by providing areas that need to be cleaned and fogged.



# Challenges at Central Laboratory

- ▶ Acquiring IFA & PCR test kits
- ▶ Training personnel
- ▶ Overload of test requests
- ▶ PCR at AZP
- ▶ IFA is labour intensive and subjective
- ▶ Quality of whole blood samples sent from remote areas
- ▶ Validation of rapid tests for other labs highlighted the insensitivity of these.
  - ▶ CTK Biotech OnSite Duo Dengue IgG/IgM-CHIK IgM Rapid test
  - ▶ CTK Biotech OnSite IgM Combo Rapid test - Cassette



# Modification of testing algorithm

- ▶ Three weeks after confirmation of the first positive case the testing algorithm at Central Lab was modified to include only:
  - ▶ Severely ill hospitalized patients
  - ▶ Patients with other chronic health issues
  - ▶ Pregnant women
  - ▶ Young children



# Current situation at Central Laboratory

- ▶ As of 26/02/2015:
  - ▶ 334 samples analyzed
  - ▶ 228 positives
  - ▶ 73 negatives
  - ▶ 22 not tested
  - ▶ 7 to be tested
- ▶ Receive approximately 10 test requests per week currently

\* Central Laboratory only analyzes data from tests received at Central Laboratory. National and International data is analyzed by the Epidemiology department of BOG



# Future outlook

- ▶ CHIKV PCR at the Central Laboratory
- ▶ Follow up research in patients 3-, 6-, and 9 months post positive diagnosis with IgM IFA



# Thank you for listening

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