

Implementing DHIS 2 as the National Disease Surveillance Database in Guinea: Results and Lessons Learned from the Pilot Phase (June–October 2017)

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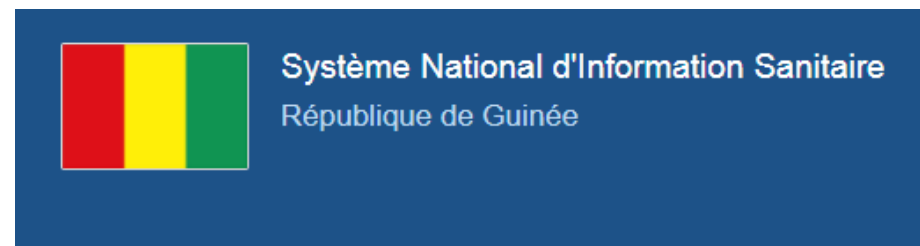
1. Introduction

Through the U.S. Centers for Disease Control and Prevention (CDC)-funded Global Health Security project in Guinea (2015–Present), RTI International provides technical assistance to the Ministry of Health (MoH) to strengthen the disease surveillance system to better prevent, detect, and respond to outbreaks. Guinea lacks a robust national database that enables tracking of individual cases and their laboratory results as well as weekly aggregate disease surveillance reports. Instead, each stakeholder maintains its own databases in parallel, leading to duplication of effort, difficulties in harmonizing data, lack of information sharing, and difficulty tracking laboratory test results for patients. These issues hinder the ability of the system to detect and respond to cases in a timely manner. RTI is working with MoH and key partners to implement the District Health Information System 2 (DHIS 2) as the national disease surveillance database.

2. Components of the Disease Surveillance System in DHIS 2

The Disease Surveillance System in DHIS 2 includes the following:

- Aggregate weekly reports from health facilities (cholera, meningitis, yellow fever, measles, neonatal/maternal tetanus, acute flaccid paralysis [polio], malaria, bloody diarrhea [shigellosis], seasonal flu, maternal/neonatal deaths, viral hemorrhagic fevers)
- Maternal deaths notification using the Event Tracker; case notification and laboratory results using the Tracker Capture (cholera, meningitis, yellow fever, neonatal tetanus, acute flaccid paralysis [polio], measles, bloody diarrhea [shigellosis], viral hemorrhagic fevers)



3. Study Methods

Analysis of data in the Guinea National DHIS 2 (weekly aggregate disease surveillance reports, individual case notifications)

Project Field Supervision Reports: the RTI team conducted field supervision visits to the Boké and Labé regions, visiting each of the district health offices

4. Scope, Timeframe, and Activities for Pilot Phase

Geographic and Organizational Scope:

- Two regions (Boké and Labé), each comprising five district health offices, two regional health offices, district and regional hospitals, and laboratories
- Two national reference laboratories (Institut National de Santé Publique [INSP], Projet Fièvre Hémorragique en Guinée [PFHG])
- Expanded Program on Immunization (PEV)
- National Health Security Agency (Agence National de Sécurité Sanitaire [ANSS]) with support from the Office of Strategy and Development of MoH



Training: central-level stakeholders (April 2017); regional- and district-level stakeholders in Boké and Labé (May 2017); refresher training of national labs (August 2017).

User Support/Supervision:

- Remote: RTI staff made regular calls/communicated with district health offices as a check-in and to troubleshoot issues and responded to questions/requests
- In Person: RTI conducted supervision visits to Boké and Labé regions in July and September

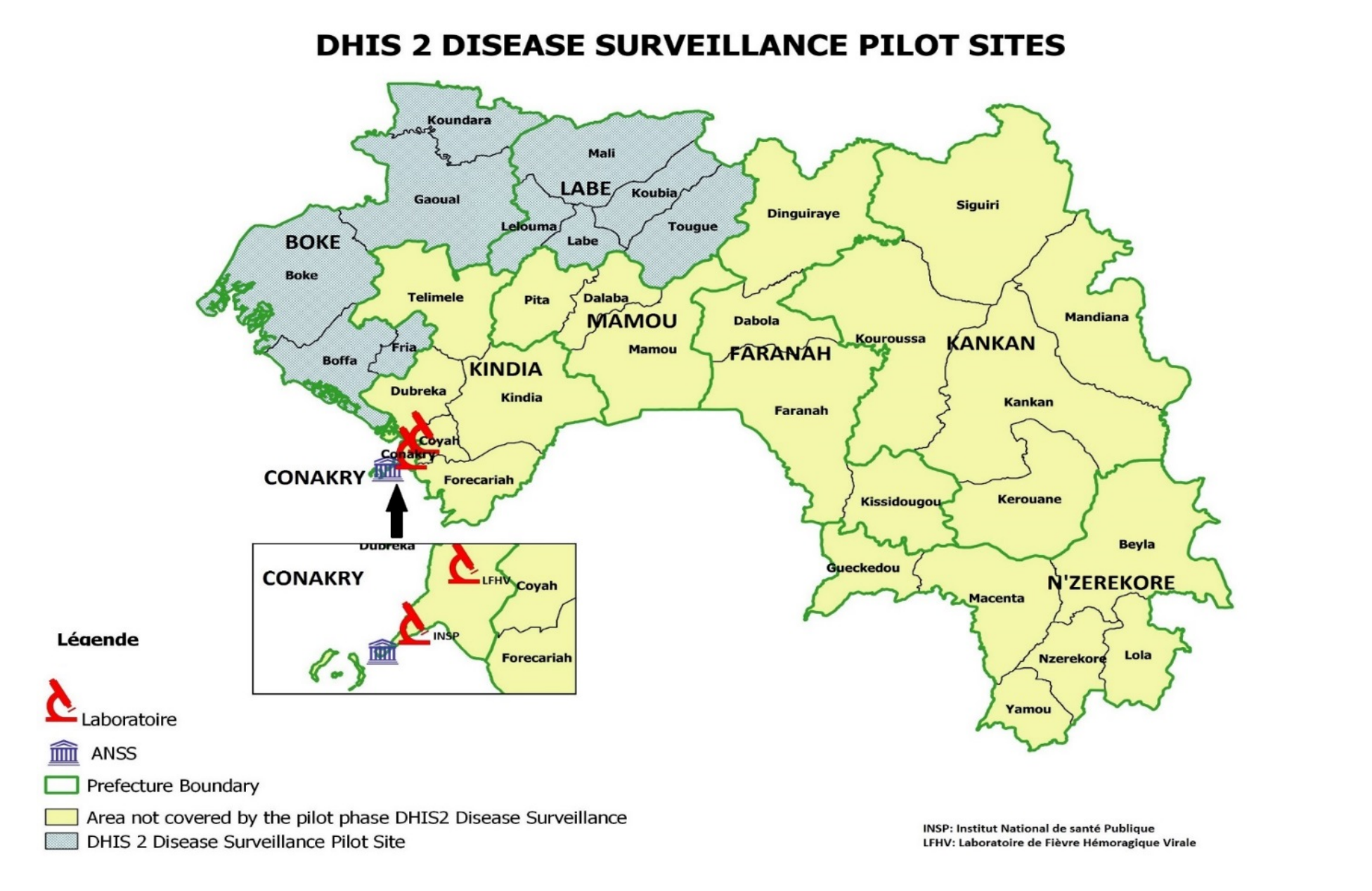
4. Scope, Timeframe, and Activities for Pilot Phase (Continued)

In the pilot districts, users continued to enter and submit weekly disease surveillance data through the standard Excel reporting template to the ANSS.

Resources provided to district and regional health offices include the following:

- mobile Internet access credits
- computer maintenance services and troubleshooting support
- solar power kits

All district health offices benefited from training on DHIS 2 in late 2016 during the scale-up of DHIS 2 for the routine (monthly) health information reports.

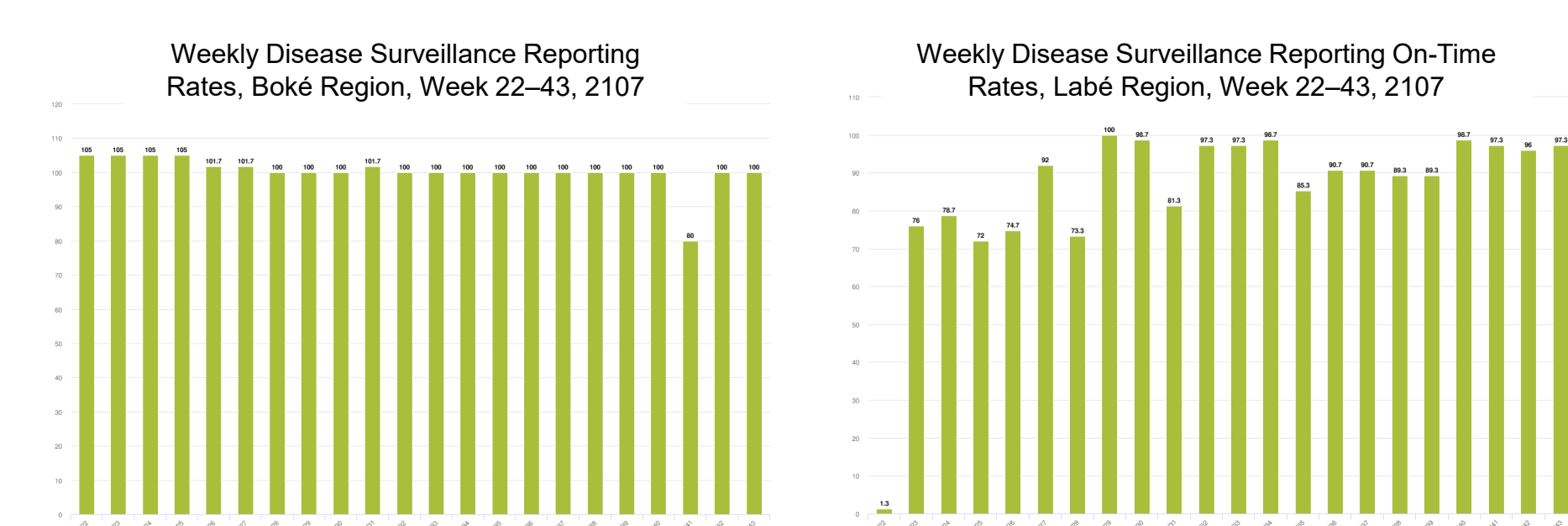


5. Results—Weekly Disease Surveillance Reports

The standard reporting system for weekly disease surveillance in Guinea is an Excel spreadsheet template that districts compile from their health facilities' data and submit by email to ANSS, which then compiles and analyzes the data. The use of DHIS 2 introduces the following changes:

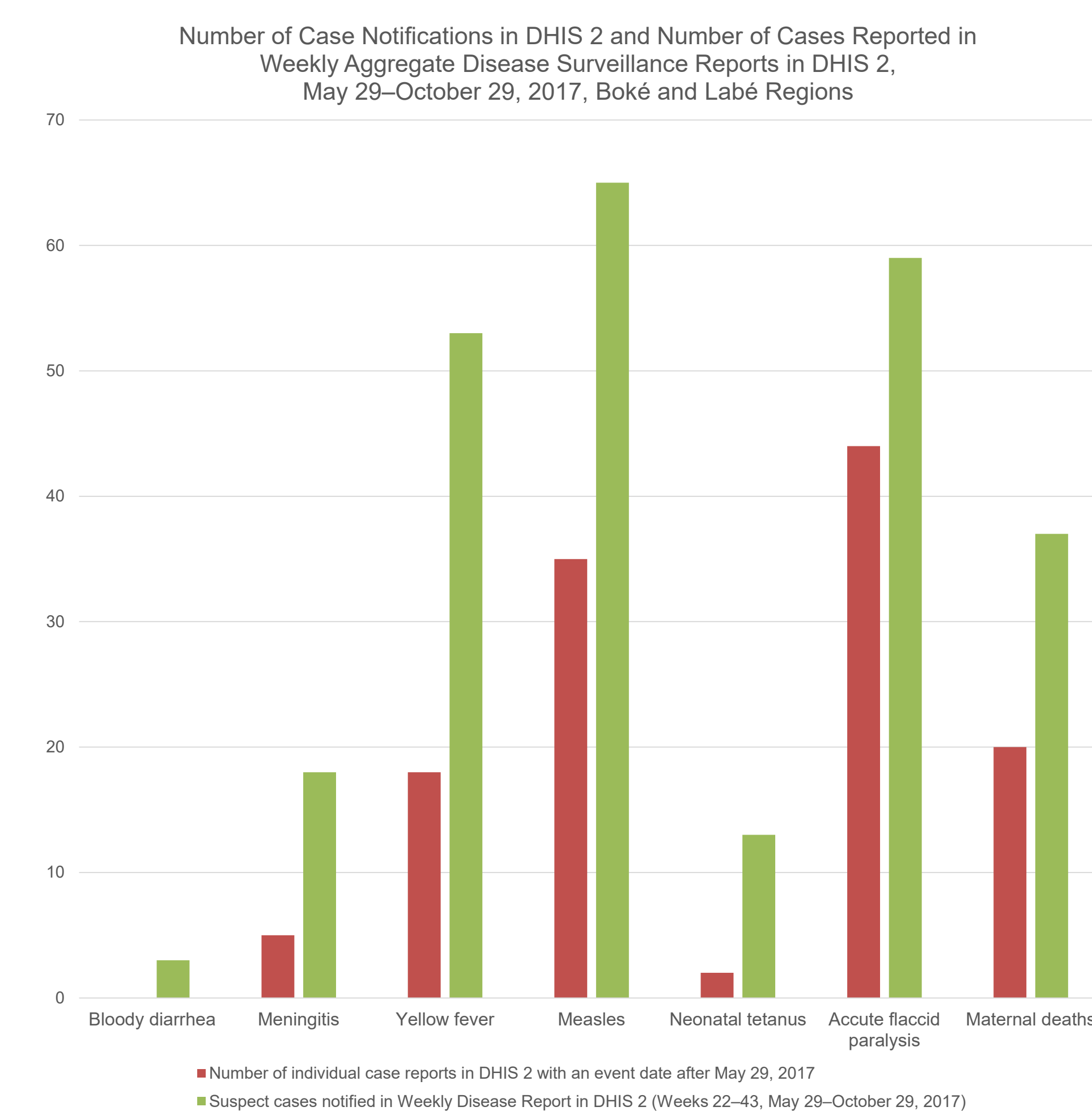
- DHIS 2 enables all levels to view and analyze data down to the facility level according to their user role.
- DHIS 2 enables automatic aggregation of data, which helps reduce errors introduced in compiling data from multiple spreadsheets.
- DHIS 2 has built-in analysis tools (Data/Event Visualizer, Pivot Table, GIS, Event Reports, Reports) that facilitate the ability to make use of the data that are collected.

Users were able to enter weekly disease reports into DHIS 2 with a high level of completeness (defined by the number of reporting units' data included); Boké had an average of 99% complete reports, and Labé had 99.9%. For timeliness (as defined by reports submitted on time), the Labé region had an 85.3% on-time reporting rate from weeks 22–43, and the Boké region had an average of 80% over the same period.



6. Results—Case Notifications

In a non-epidemic period, health authorities are instructed to fill in an individual notification form for each case. As a way to evaluate the extent to which individual case reports are being completed and captured in DHIS 2, we compared the number of case reports entered in DHIS 2 against the number of cases in the weekly aggregate disease report for the period of the pilot phase (May 29–October 29, 2017). The chart below shows that the number of cases reported in weekly aggregate reports is still much higher than the number of case notifications.



7. Challenges

Case Notifications—District and Facility Levels

- District health offices slower to begin entering case notifications into DHIS 2 than for the weekly aggregate reports
- Tracker Capture application more complicated, requiring more training and supervision time
- Uneven case notification by districts (some diseases have better rates of investigation because additional resources are devoted to that particular disease through vertical program support)
- Data quality problems: blank fields, fields filled out incorrectly
- Ensuring that case notifications and lab information and results entered into DHIS 2 in timely manner (not letting forms pile up waiting to be entered) (both labs and districts)

Laboratory Specific—Central Level

- National laboratories did not begin entering laboratory results until 3 months after pilot start and only after refresher training
- Health districts do not always send laboratory samples in a timely manner to the national laboratories with the accompanying notification form

Use of DHIS 2 for Data Analysis

- Lack of complete data set delayed usage by ANSS, other stakeholders at central level
- Lack of disease surveillance indicators in DHIS 2 limited the ability to use built-in analysis tools to easily view these

8. Conclusions/Recommendations

- Configure additional disease surveillance indicators in DHIS
- Harmonize and simplify case notification forms
- Implement alerts from DHIS 2 via email and/or text message
- Develop and institutionalize written guidelines on case reporting in DHIS 2
- Intensify support for districts, ANSS, labs for data quality, analysis, and use

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