



— *envision a world* —
WHERE **EVERYONE**
has the opportunity for a **healthy life**



Enhancing the eIDSR module on DHIS2 to address global health security needs

Presented by: Randy Wilson, MSH/RHSSP



USAID | **RWANDA**
INKUNGA Y'ABANYAMERIKA

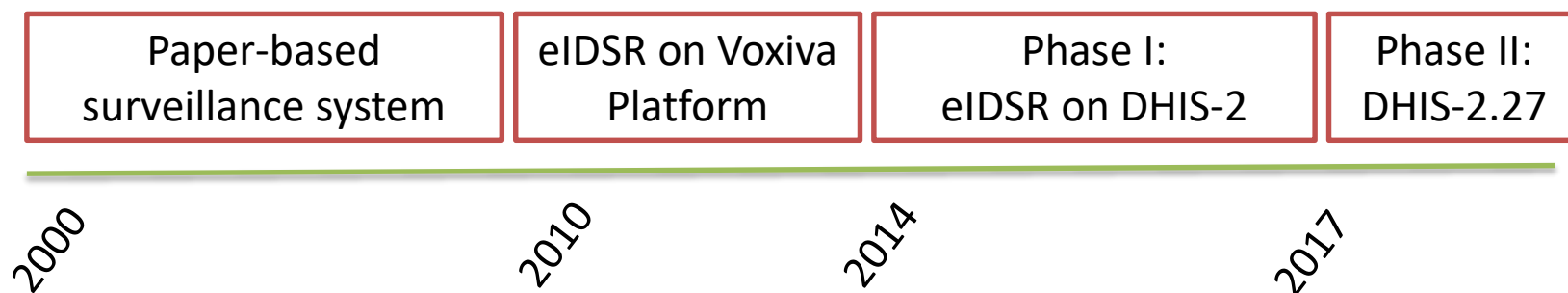


Key topics

- Background
- Key Features of DHIS-2 based eIDSR
 - Reporting
 - Outbreak detection & Alerts
 - Analytics
- Challenges & Lessons learned
- Next steps

Background

Timeline:



Key steps in transition:

- Requirements development for transition to DHIS-2
- Phase 1: USSD, Weekly & Immediate reporting; Outbreak detection & Alerts
- Phase 2: Upgrade to DHIS-2.27 version, outbreak management and contact tracing

Key features

- Aggregate weekly reporting
- Case-based reporting stages:
 - Notification/registration
 - lab info integration (lab request & lab results)
 - patient status reporting,
 - contact tracing
- Automated SMS outbreak detection & alerts to decision-makers when a threshold is reached
- Outbreak monitoring, advanced reports and analytics.

Reporting interfaces

- Mobile USSD or Android
- Web interface

dhis2 Rwanda Integrated Disease Surveillance

Search app

Filter in section

Cases and Deaths by age group

	Cases		Deaths	
	<5 years	5 years and above	<5 years	5 years and above
Diarrhoea - non bloody	4	5	0	0
Malaria	5	22	0	0
Pneumonia severe	0		0	
Flu syndrome	18	24	0	0

Summary of Immediately Reportable Diseases Cases and Deaths

Filter in section	Cases	Deaths
Cholera	0	0
Bloody Diarrhea (Shigellosis)	0	0
Haemorrhagic fever	0	0
Yellow Fever	0	0

Navigation menu:

- Rwanda
 - East
 - Bugesera District
 - Nyamata Sub District
 - Gashora
 - Gashora CS**
 - Gashora MU
 - Juru
 - Kamabuye
 - Mareba
 - Mayange
 - Musenyi
 - Mwogo
 - Ngeruka
 - Ntarama
 - Nyamata
 - Nyarugenge (Bugesera Dist
 - Ririma
 - Ruhuha
 - Rweru
 - Shyara
 - Gatsibo District
 - Kayanza District
 - Kirehe District
 - Ngoma District
 - Nyagatare District



Case-based surveillance

dhis2 Rwanda Integrated Disease Surveillance

Search apps

RW

Back

IDSR Immediate Report

Enrollment

Enrolling organisation unit: Kivumu (rutsiro) CS

Reporting date: 2017-10-17

Complete Deactivate Delete

Feedback

No feedback exist

Tabular Data Entry

Patient Status Update

Laboratory Request

Laboratory Result

Contact

Date of patient status update *: 2017-11-10

Patient Status

Change Language / Changer de Langue: English

Patient Status*: Outpatient

Profile | Edit

Immediate Report

Please complete the following information. Fields with (*) are required.

Change Language / Changer de Langue: English

* Disease: Bloody Diarrhea (Shigellosis)

Are you reporting during an Outbreak: No

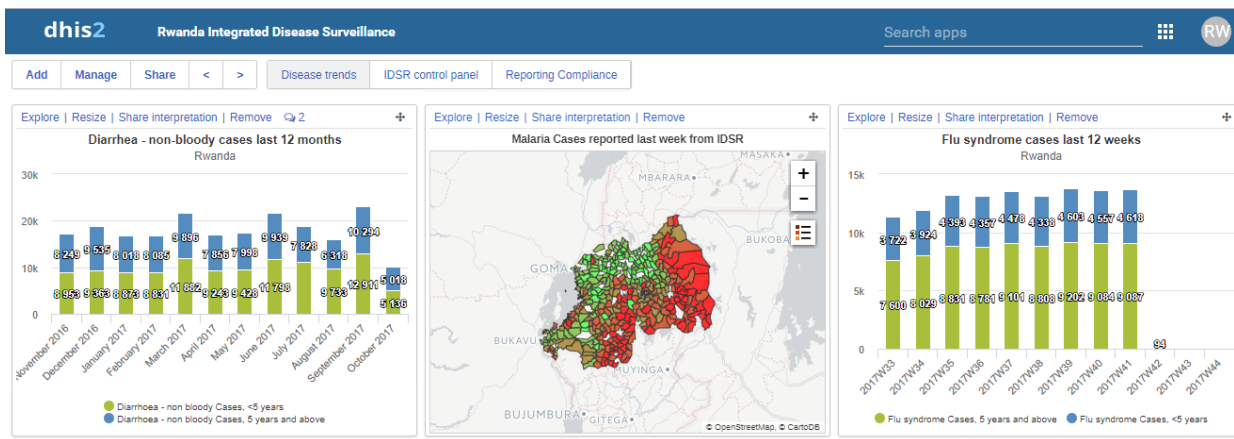
Outbreak Code

Outbreak detection algorithms

- **Case-based outbreaks**
 - If the # of confirmed or suspected cases go above a fixed threshold
- **Non-Seasonal outbreaks**
 - If current week ≥ 2 Standard Deviations above weekly average for year
- **Seasonal outbreaks**
 - Compares weekly values for a window of m weeks, with the same window over previous years (the more years better). If the current week value is greater than the mean + 2 standard deviations, then generate an outbreak code

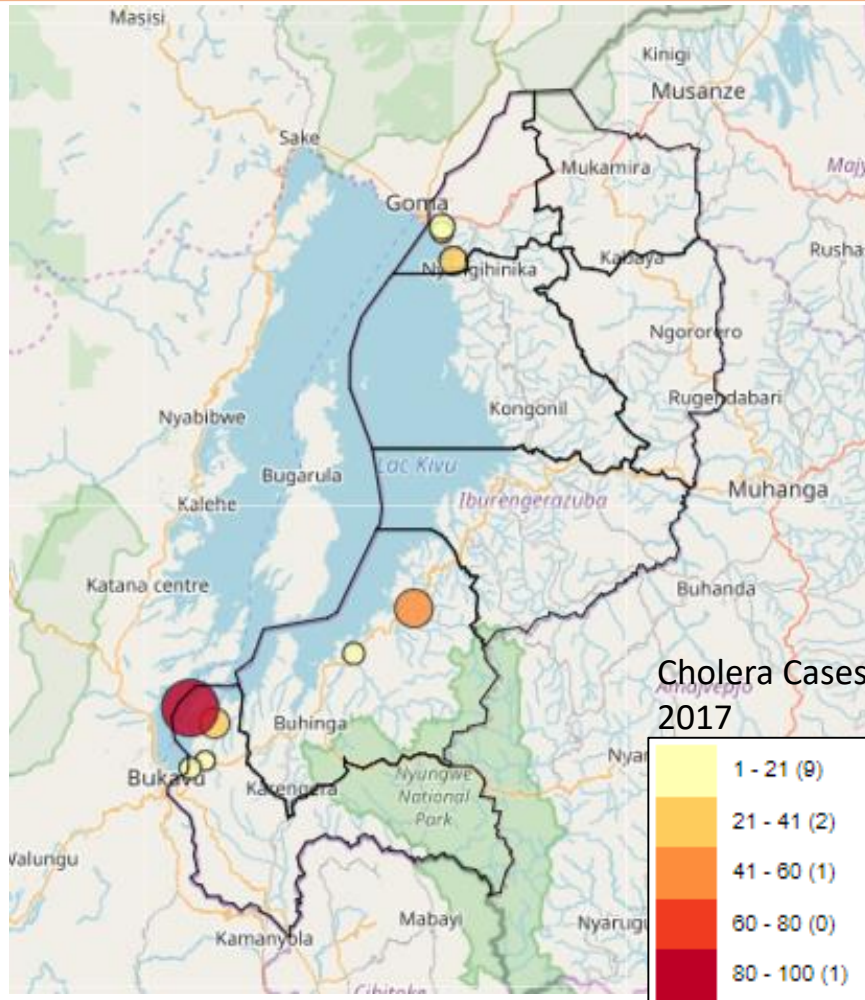
Analytics

- Dashboards



- Analytical reports
 - Reporting rates
 - Weekly summary
 - Sitrep

Hot spot mapping



Sitrep report

Outbreak ID E_447_4S5H996t2DP
Disease Cholera
Date first case reported 28-11-2017
Date closed 28-11-2017
Date confirmed 28-11-2017
Facility reporting Gashora CS
Sector/Subcounty Gashora
District Hospital Nyamata Sub District
District Bugesera District

No	Indicator	Description	Total Number
1	Cumulative Measles Admitted	Cumulative Measles Admitted	0
2	Cumulative Measles cases (suspected & confirmed cases)	Cumulative Measles cases (suspected & confirmed cases)	1
3	Cumulative Measles Discharged	Cumulative Measles Discharged	0
4	Cumulative Measles Specimens collected	Cumulative Measles Specimens collected	11
5	Cumulative Number of Measles Confirmed Cases	Cumulative Number of Measles Confirmed Cases	1
6	Cumulative Number of Measles Contacts followed up today	Cumulative Number of Measles Contacts followed up today	0

Challenges

- **Closing the lab loop** to confirm cases
- **Ensuring daily case follow-up** reports get entered to record outcomes (deaths, recovery)
- **Tablets/smartphones** for contact tracing – need to put them in the hands of all surveillance officers during outbreaks
- **Capturing events** at the community level – the current system is health facility-based

Next steps

- **Interoperability:** complete automated data exchange with the lab systems (LabWare & BLIS) and veterinary info systems under One Health umbrella
- **Community module:** to record events in the community for early warning and response
- Develop **disease-specific reporting stages** (e.g. for Ebola or Plague) to implement WHO standards for case management

Lessons learned

- **Avoid too much custom coding** – work through the DHIS-2 community to incorporate special requirements into the core DHIS-2 system.
- **Avoid over-reporting** – trying to collect too much data often results in a lot of missing data elements
- **Build in data exchange with other systems-**
DHIS-2 API provides robust opportunities for interoperability

Conclusions

- DHIS-2 platform is now capable of supporting most 'surveillance' needs out of the box, but still needs effort to deal with 'response'.
- Implementers should work closely with the DHIS-2 community to share blueprints for new functionality and help to build them into the core software so that others will benefit

STRONGER HEALTH SYSTEMS. GREATER HEALTH IMPACT.



Saving lives and improving the health of the world's poorest and most vulnerable people by closing the gap between knowledge and action in public health.



www.msh.org