

Rwanda Biomedical Center and Zenysis Technologies

Insights Achieved with the Rwanda Health Analytics Platform (RHAP)

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ZENYSIS

Presenters



Dr. Albert Tuyishime
Planning, M&E, & Business Strategy, RBC

The Planning, M&E, Business Strategy and Health Information System Division is devoted to the development of quality RBC integrated plans with strong monitoring and evaluation system through the leading of planning and business strategy processes for RBC and ensuring implementation and monitoring of the national policies across RBC plans.



Eliachim Ishimwe
International Project Manager, Zenysis

Zenysis is an interoperability platform. It integrates fragmented data into powerful analytical views and provide on demand analytics that can uncover insights at unprecedented speed. Generated insights are used to support decision makers to save lives and improve response to a range of global development challenges.

Zenysis Technologies



ZENYSIS

Zenysis integrates programmatic, financial, geospatial, survey and other data into a single platform and makes these data interoperable for advanced analysis

CHALLENGE

Siloed information systems are one of the most significant barriers to using data to drive improvements in program performance.

Systems can differ in database structure, formats, level of granularity, units of measurement, periodicity and more, and analysts often struggle to understand what their data is telling them or analyze all their data together.

OPPORTUNITY

A data interoperability and advanced analytics platform that integrates streaming and static data (for example live databases and excel spreadsheets) as well as data from data collection apps such as DHIS2, OpenLMIS, CommCare and others.

By making data from multiple systems accessible within a single platform for analysis, program managers can quickly uncover the insights they need to drive program performance to the next level.

Zenysis Technology Core Capabilities



Data Integration & Interoperability

The Zenysis platform quickly integrates data from all siloed information systems into a single analytical view, giving decision-makers an integrated, system-wide view of the health sector for the first time.



Advanced Analytics

Zenysis analyzes millions of data points at sub-second speed, enabling users to combine fragmented data sets for advanced analysis and quickly uncover insights they can use to transform health system performance.



Artificial Intelligence

Our software uses AI to generate facility-level forecasts with single-digit accuracy, uncover relationships between interventions and outcomes, and scan millions of data points in seconds for data quality issues.



Reporting and analysis on-demand

Zenysis works with decision-makers to automate their most important analytics to ensure they always have to up-to-date information and analysis on-demand.



Alerts

Zenysis users can create customized alerts that notify decision-makers of potential infectious disease outbreaks, shortages of essential health commodities and other critical risks in near-real time.



Data Quality

The Data Quality Lab, mapped to WHO standards, can evaluate timeliness, accuracy and completeness of data for every indicator and health facility in the country.



Zenysis has helped a number of countries begin to leverage the full power of their data to improve decision-making, health system performance and health outcomes.

Governments have used the platform to address a wide range of use cases including optimizing health budgets and vaccination campaigns, automating M&E analysis, humanitarian crisis response and more.

**Zenysis
Footprint**

7 Countries

2 additional projects in
2019

Total Users

**700 total users across
all deployments**

**Examples of
Systems
Integrated**

DHIS2, DHS and EmONC survey, demographic health survey, financial, lab, infectious disease surveillance reports, water source, warehouse inventory and distribution, LLIN campaign, vaccination data and more

- What is RBC?
- What is RBC's role in Rwanda's health system?
- How long have they operated?

RBC

Rwanda Biomedical Center (RBC) is the Ministry of Health implementing institution. RBC was created by the law no54/2010 of 25th January 2011.

VISION

To become a Center of Excellence for the prosperity of the country, ensuring quality health service delivery, education and research.

RBC's ROLE IN RWANDA'S HEALTH SYSTEM

Rwanda Biomedical Center is the implementing arm of the Ministry of Health.



Rwanda Biomedical Center & Zenysis Technologies
Partnership Overview

Partnership Overview

- What issues was RBC facing with siloed data systems?
- How did the project start?
- How many systems did we integrate and how long did it take?
- How quickly was RBC able to begin using the platform and generating insights?

- **Challenges:** Multiple siloed data systems, use of different standards, limited analytics, etc ...
- **Partnership:** RBC, MTEK and Zenysis
- **Integration:** 7 Data Sources integrated into one single platform (RHAP)
- **Integration:** 4 months
- **Use & Training:** 3 months

Rwanda Health Analytics Platform (RHAP)

MFR (x3)

HMIS

Community
SISCOM

ISS (CSV)

DHS

SHAPE
FILES

eLMIS (CSV)

INTEROPERABILITY LAYER

ZENYSIS

Zenysis integrates programmatic, financial, geospatial, survey and other data into a single platform and makes these data interoperable for advanced analysis.

RHAP Dashboard





Rwanda Biomedical Center & Zenysis Technologies
Impact Achieved with RHAP

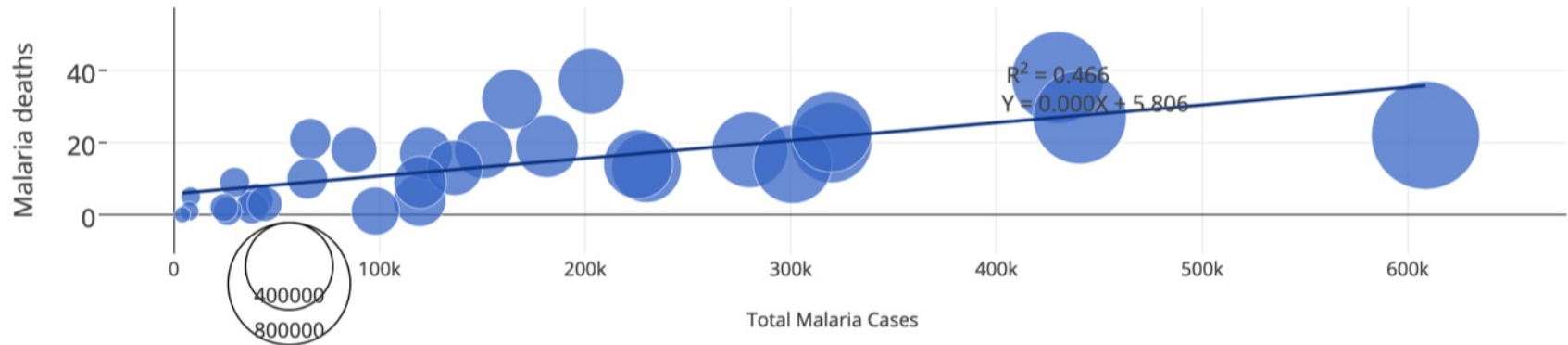


Rwanda Biomedical Center & Zenysis Technologies
Key Analyses

ALL DATA AND VISUALIZATIONS HAVE
BEEN ANONYMIZED TO PROTECT
USER PRIVACY

Exploring the relationship new cases and fatality

Total Malaria cases VS Malaria deaths

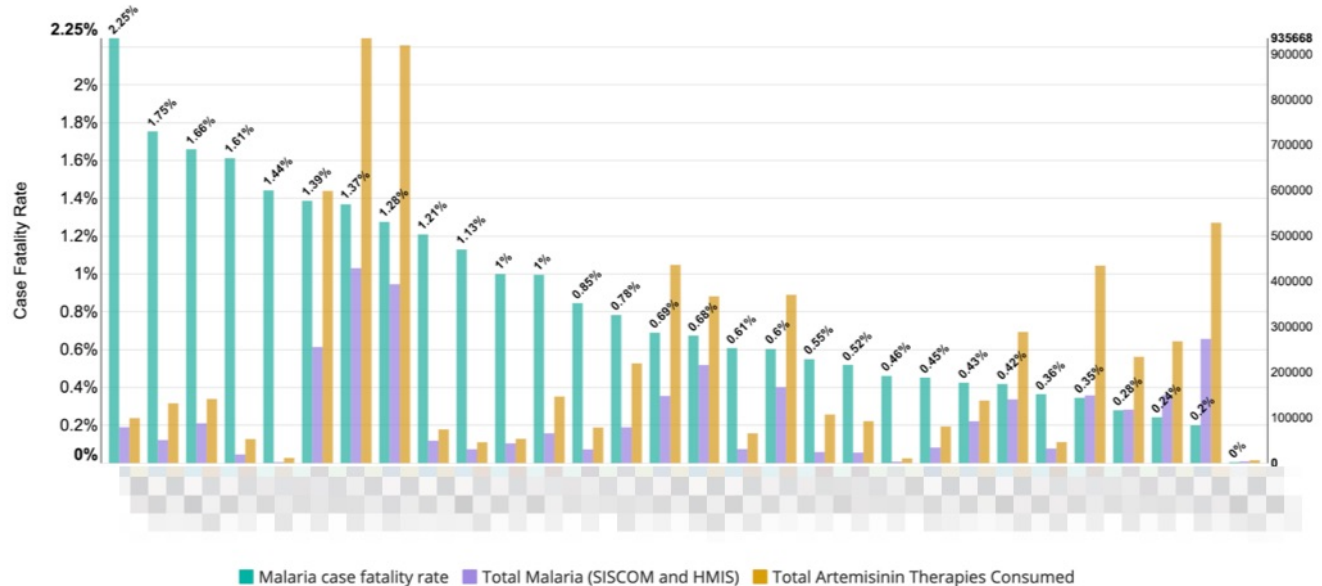


Malaria Case Fatality Analysis

EXAMPLE: Malaria Program

A visualization generated by the Malaria division showing mortality case fatality rate (from the HMIS) side-by-side with total malaria cases reported at the community and district-level (from the SISCOM) side-by-side with total artemisinin-based therapies consumed (from the eLMIS).

Malaria Case Fatality, Number of Malaria Cases, Total Artemisinin Therapies Consumed

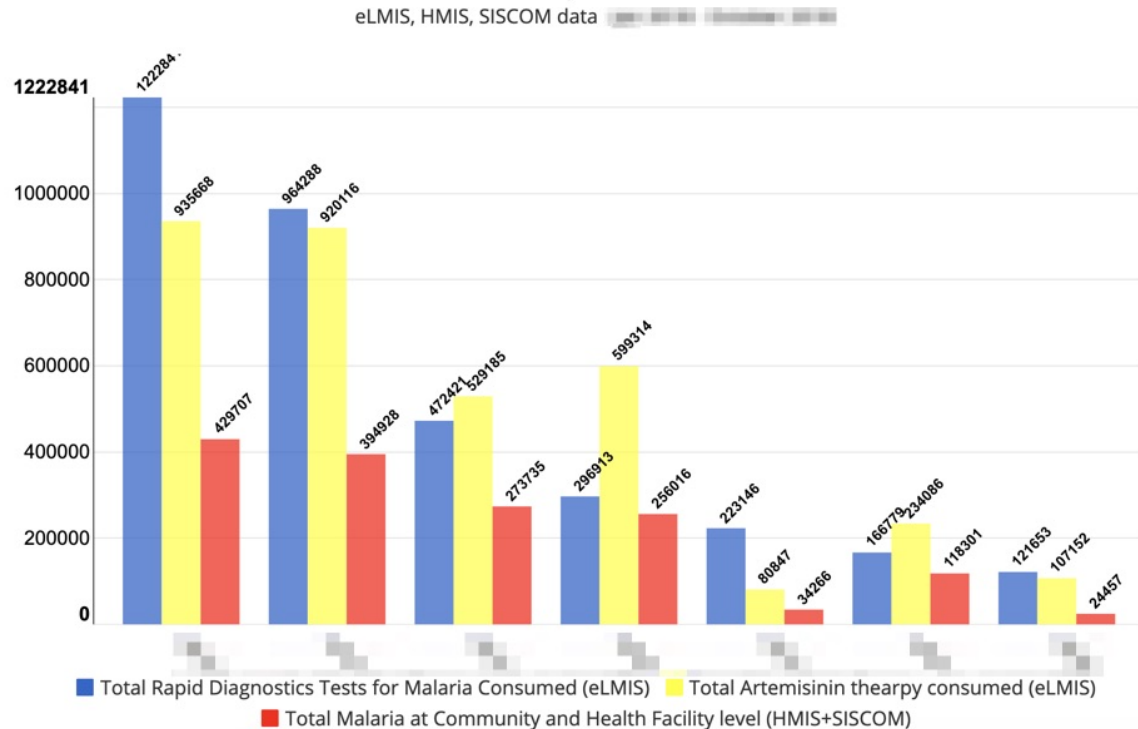


Commodity consumption and malaria cases in the Eastern Province

EXAMPLE: Malaria Program

This analysis triangulates four different data sources to examine the disease burden, testing, and treatment commodity consumption in one Province of Rwanda. Previously this comparison of indicators would require querying SISCOM, the HMIS and the eLMIS separately, and harmonizing their different location hierarchies.

RDTs and Artemisinin Therapies Consumed Compared to New Cases of Malaria
Reported

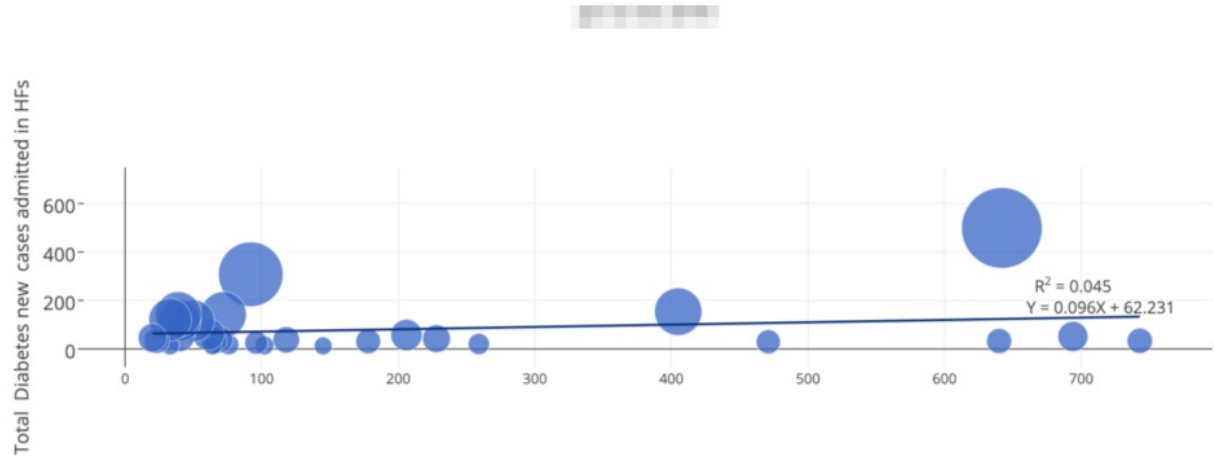


Exploring the relationship new cases and fatality

EXAMPLE: NCD Program

This visualization shows the relationship between diabetes checkups and new diabetes cases diagnosed in health facilities, drawing on data from both the HMIS and SISCOM systems. It surfaces which health facilities appear to be outliers given the line of best fit so that NCD Program Managers can prioritize supervision visits.

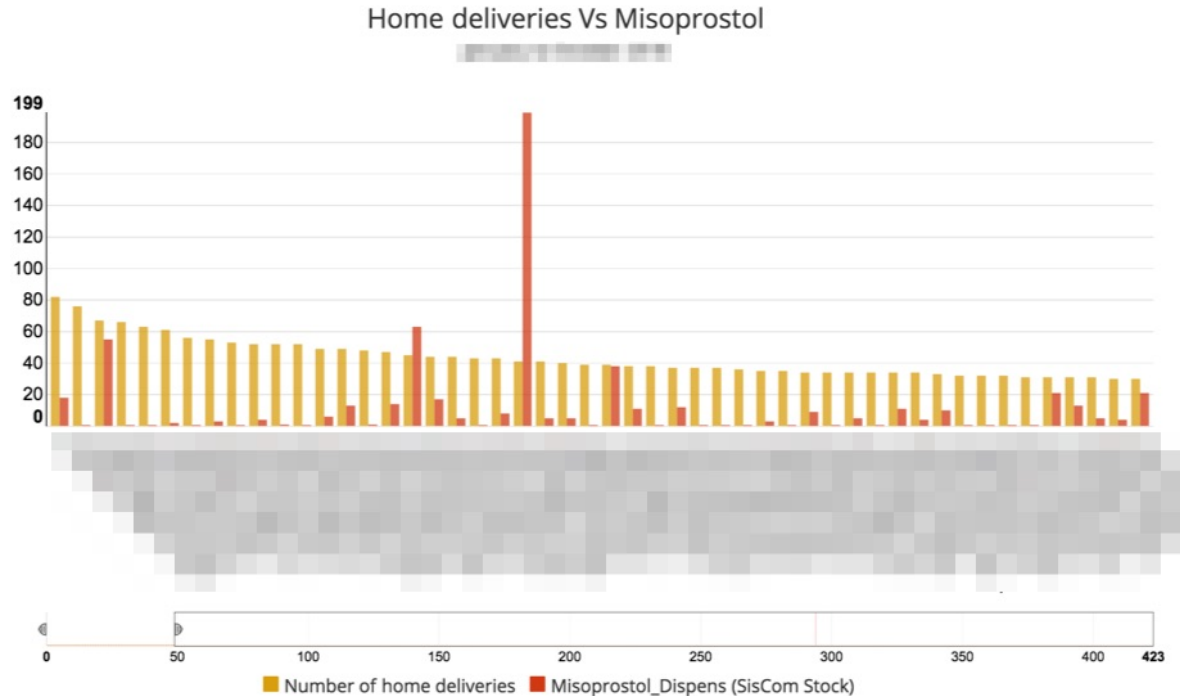
Relationship between diabetes check up and new cases diagnosed in health facilities



Home Delivery Vs Misoprostol

EXAMPLE: M&E Division

This visualization shows where there are the greatest discrepancies between number of home deliveries (HMIS data) with dispensed misoprostol (SISCOM). Health facilities reporting significantly more misoprostol dispensed than number of home visits should be prioritized for data quality supervision visits.

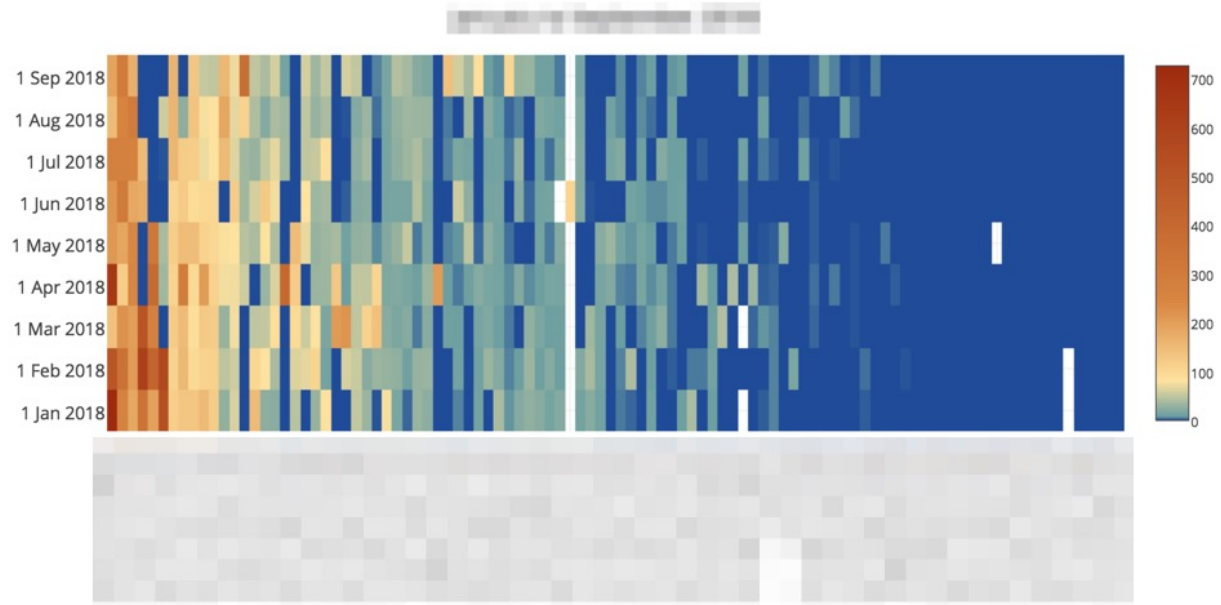


Exploring the relationship new cases and fatality

EXAMPLE: NCD Program

A visualization generated by the NCD division drawing on data from two sources (HMIS and SISCOM) which shows the total number of people consulted for an annual medical checkup from January to September 2018 in a certain province. Health facilities appearing blue (concentrated most heavily to the right) reported zero NCD checkups for patients aged 35 years and older. This visualization helped the NCD division identify which health facilities were not following MOH directives to screen anyone over the age of 35 for NCDs.

Total number of people who consulted for annual medical checkup during the reporting period (South)



Added Value

Before RHAP

- Needed to access and obtain data exports from the different **data sources** (eLMIS, HMIS, and SISCOM)
- Different data elements, accounting for a variety of ways the three systems are different
- Visualized the data using a third-party tools

With RHAP

- Analysis is available to different divisions on-demand
- Data is already harmonized across facility, sector, district and provincial levels
- Rapid custom calculations
- Easily shared across the team via a single dashboard

Recommendations

- 1 Culture & Technology:** The success of data driven decision making will be successfully achieved through the use of technology such as RHAP and its adoption as our standard decision making support tool.
- 2 Scope expansion:** The journey continues and more data sources/systems to be integrated into RHAP. Inviting everyone to contribute to the development of RHAP.
- 3 End user scope expansion:** Support the use of the analytics platform (RHAP) at the central level and expand its usage at the district level.
- 4 Usability:** There's an extensive need to get all systems exchanging data with minimum efforts.
- 5 Standards harmonization:** All implementations should use the same standards.

Thank you



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