


TOOL TO RESPOND TO DISEASE OUTBREAKS



Pulse Lab Kampala in partnership with the Ministry of Health of Uganda and WHO is working on a tool to support the response to disease outbreaks. The tool supports faster and better response to disease outbreaks.

OBJECTIVES

The Ugandan Ministry of Health uses a web-based Health Management Information System (HMIS) to respond to diseases throughout the country. While the system is very advanced it faces some challenges. The data that feeds the system is routinely collected by health facilities on a weekly basis thanks to the mTrac system supported by UNICEF. Pulse Lab Kampala is building a tool using Big Data Analytics to correct missing data at health centres, produce data visualisations and incorporate risk factor information. The data analytics will support more effective prevention and halt the further spread of disease outbreaks.

PROJECT TIMELINE

2015-2017

METHODOLOGY

1. **DATA COLLECTION:** Local health care workers share data about new cases of for instance malaria, typhoid and dysentery in the Health Information Management System (HMIS). The Ministry of Health this way receives data on a weekly basis about new cases from about 4,000 health centres across the country.
2. **CORRECTING FOR MISSING DATA:** Not all health facilities report every case every week. The unreported cases cause misleading trends if they are not corrected for. The tool Pulse Lab Kampala is developing corrects for the missing data, showing a more accurate counting of the number of affected people.
3. **VISUALISATION:** Health surveillance data can be visualized over time allowing better understanding of the spread of the disease. Weekly data is represented per district and sub-county, allowing tracking of the disease at local level over the calendar year. Data. To further inform the response to outbreaks, counts and percentiles of cases and correction for missing reports are available.
4. **ADDING EXTRA DATA:** Assessing risk factors is key to the response to disease outbreak. This Pulse Lab Kampala tool complements the HMIS data with data to inform and establish correlations and build scenarios. Data is gathered from:



satellite imagery



surveys



telecoms data



secondary data

MODUS OPERANDI

As requested by the Ministry of Health, Pulse Lab Kampala data scientists used Bayesian models to develop this tool that corrects for the missing data in the HMIS. Pulse Lab Kampala collaborated with Sheffield University. Extra risk factor data is analysed using other tools developed earlier by Pulse Lab Kampala.

OUTPUTS

The prototype will be built with feedback from partners and users. The tool will be incorporated into the Ministry of Health DHIS2 system as an app to complement the existing interactive tools such as the pivot table. DHIS 2 is a health management information system used in 47 countries and 23 organisations across four continents. As it is an open source platform, once integrated in Uganda, the tool will be available for countries around the world.

LEARN MORE

For more information, please visit: <http://pulselabkampala.ug/hmis/>
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