ELECTRONIC HEALTH UTILIZATION IN MALARIA CONTROL SURVEILLANCE BASED ON BIG DATA ANALYSIS

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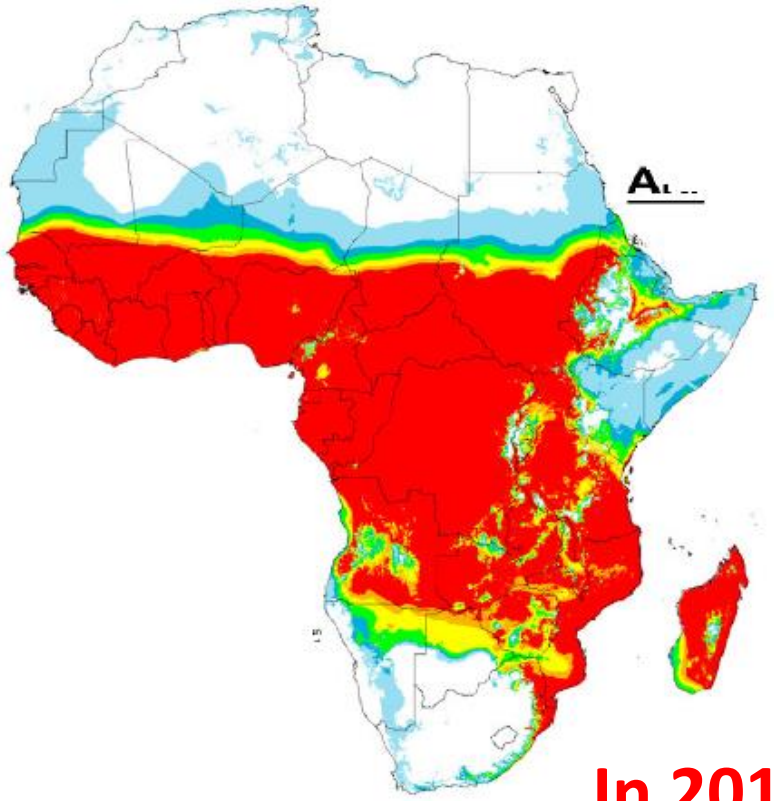
WHY MALARIA?



✓**Since 2000, malaria mortality has fallen by 66% In all age groups By 71% in under 5 children**

In 2015, 89% of malaria cases were in Africa;

91% malaria deaths were in Africa

In Uganda….

In Uganda approximately 70,000 to 100,000 malaria deaths are registered yearly

CASE STUDY:

Blood shortage in 2017 ; One of the causes was malaria among children under 5

- ARE THE EXISTING INGTERVENTIONS EFFECTIVE?
- ARE THEY SUFFICIENT ENOUGH?
- WHERE IS THE GAP?
- WHY ARE PEOPLE STILL DYING OF MALARIA?

SUCCESS STORIES

- Most of Northern parts of Africa have been able to control or eliminate malaria due to the successful implementation of **SURVEILLANCE TECHNIQUES.**

- EARLY DETECTION
- RAPID DETECTION
- REAL-TIME DETECTION
- APPROPRIATE IMMEDIATE ACTIONS TAKEN

Backbone of Malaria Control; Better Decision Making; Effective surveillance measures.

SURVEILLANCE SYSTEMS

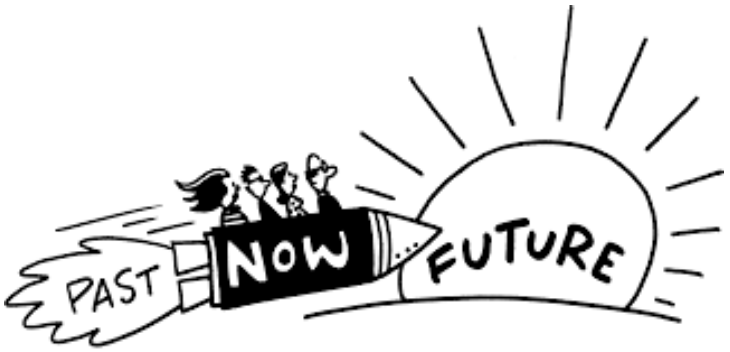
- Existing traditional surveillance systems are:

➢ Hard copy based

➢ Prone to Severe time lags

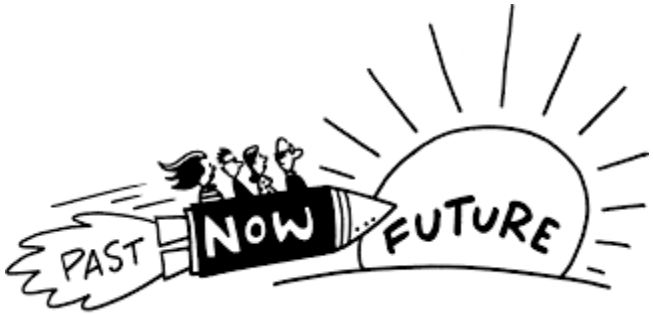
➢ Lack spatial resolution

➢ Hard copy recording of fever status, lab results



RDT STRIP

- Manual analysis of the test line subject to human error
- short time dissipation limits accurate readings; visibility of tests line disappears gradually



ELECTRONIC HEALTH UTILIZATION IN MALARIA CONTROL SURVEILLANCE BASED ON BIG DATA ANALYSIS

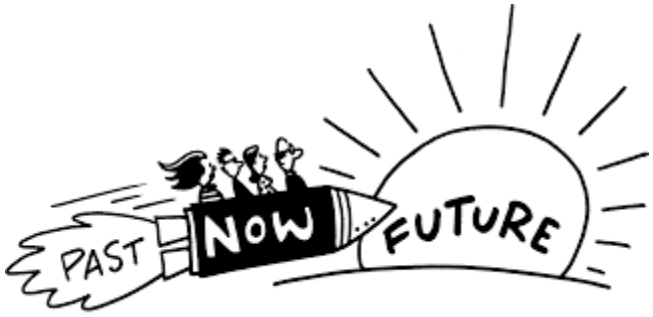
AIM

Introduce alternative, real time and relatively accurate means of relaying positive malaria cases and the associated district and health centre to a database system.

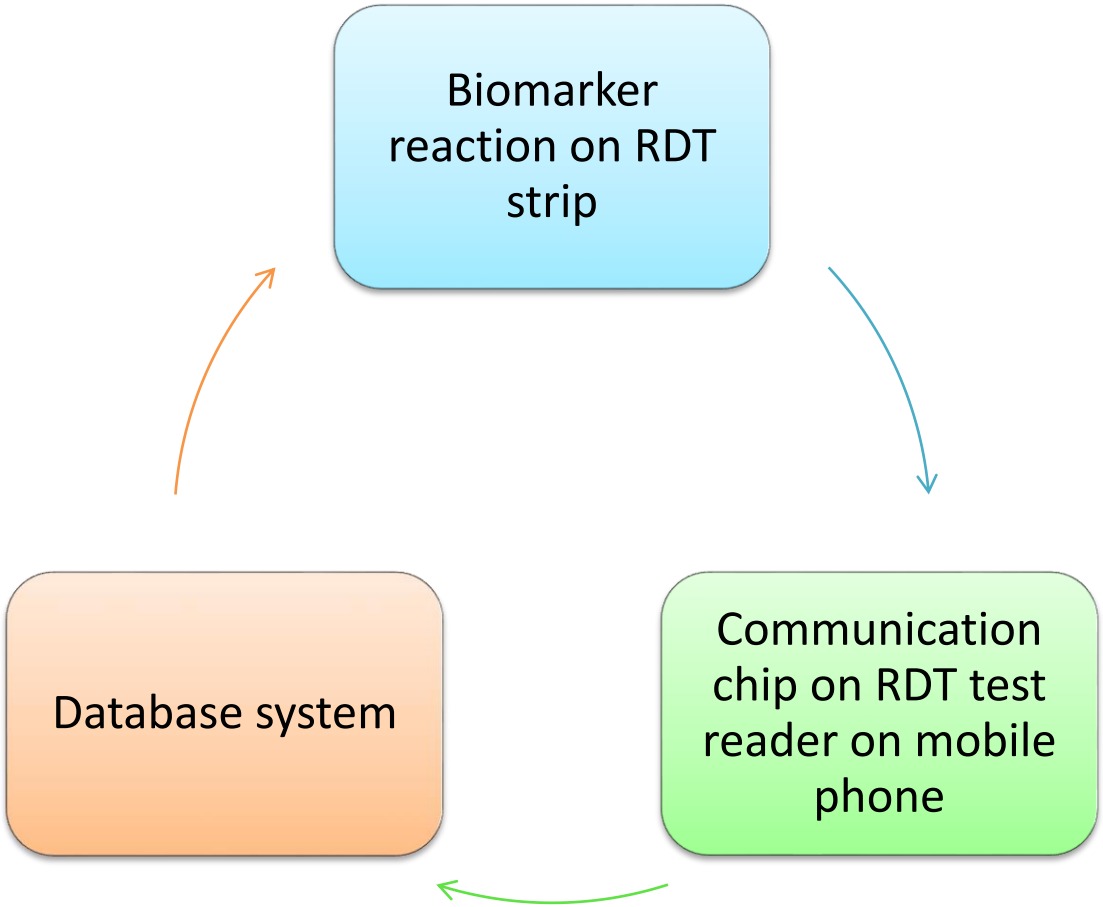
- Altogether Appropriate response and timely allocation of resources, checking on the spread of malaria.

Why Big Data?

- Big data Analysis: volume, variety and velocity of data has risen; patients increased; population increases. Need to deal with huge sums of data.

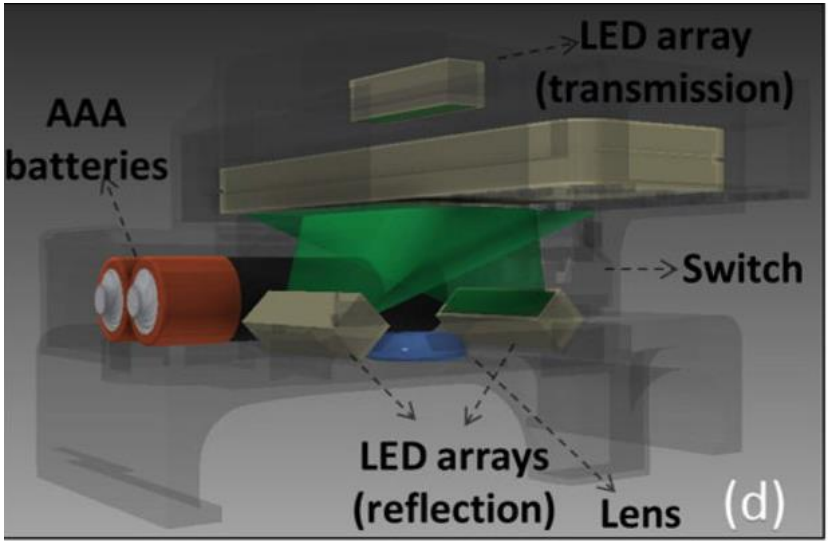


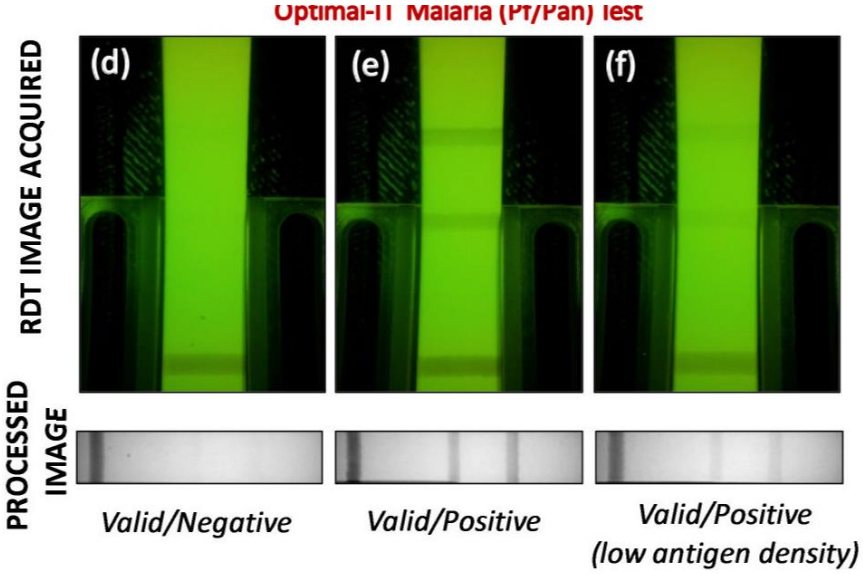
THE E-HEALTH SURVEILLANCE SYSTEM



Aim 1

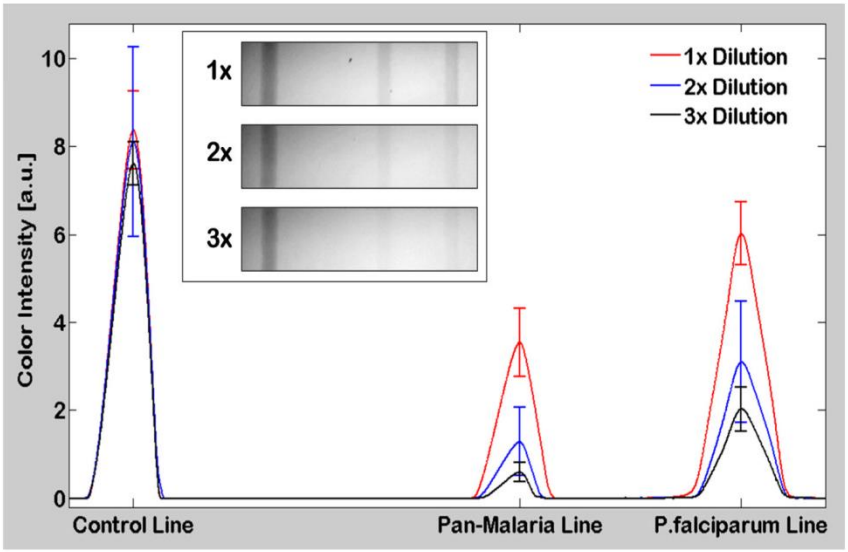
Devise a means of detecting an antibody antigen complex signal on a malaria strip by an RDT test reader in real time





Aim 2:

- Synthesise a response between the Antibody-Antigen complex AND LED light at different wave lengths and quantify the signal produced after illumination



Aim 3

- Establish a connection between a rapid diagnostic test reader and a central database using Wireless LAN and a GSM/GPRS chip placed in the test reader

Thank you