PREDICTING DISEASES.
SAVING LIVES.

DR DHESI BABA RAJA (MD, MPH, DrPH)
Twitter: @DhesiMD
2.5 BILLION AT RISK

400M dengue cases annually

>1M Zika cases so far

DENGUE & ZIKA WORLDWIDE

Image Source: HealthMap
DENGUE & ZIKA ECONOMIC IMPACT

$1.3 B  
DENGUE

$>3.5 B  
ZIKA
CURRENT RESPONSE

PASSIVE 76.90%

ACTIVE 3.90%

SENTINEL 19.20%
UNKNOWN OUTBREAK AREAS

UNPLANNED MANAGEMENT

GENETICALLY MODIFIED MOSQUITOES

FOGGING & LARVICIDING

HEALTH CAMPAIGNS

OUTBREAK MANAGEMENT
Tech Approach: Dengue-ZIKA EPIDEMIOLOGY + AI

- Weather data
- Environment data
- Comparative data
- Epidemiology data
- Human movement data
272 Variables

Lakes
Parks
Constructions Sites
Weather temperature
Sunrise time
Dengue & Zika cases
First Day of Symptoms
Humidity
Wind speed & direction
Cloud coverage
Dew Point
Pressure
Visibility
Feature Selection

30 Days Prediction

7 Days Prediction

14 Days Prediction
AIME MAIN SYSTEM

HEALTH CENTER

REMOTE DATA INPUT INTERFACE (REDINT)

CENTRALIZED DATABASE

- DATA ANALYTICS INTERFACE (DAI)
- DATA PREDICTION INTERFACE (PINT)
- USER MGMT AND OPERATION MGMT INTERFACES (UMI AND OMI)

PUBLIC HEALTH OFFICE
Within 23 Seconds We Tap 272 Variables For Prediction
Email
admin@aime.life

Password

Remember me

Log In

Forgot Password?
PREDICTION REAL TIME

LOCATION & MAGNITUDE ANALYTICS

EPID CURVE & REPORT
Say something about this picture....
3. Addition of a Reward System.

For each validated and confirmed breeding site uploaded, users would be able to obtain “Webe Points”.

These points could then later be exchanged by rewards set by telco / local / state government to the Community.

Targeted Health Campaign
AIME MOBILE SYSTEM

CENTRALIZED DATABASE

[System]
- Mobile PINT
- Crowd-sourced Input Interface (CIINT)
- Medical Sessions Interface (MESI)

COMMUNITY
HEALTH CENTER → [SYSTEM] Remote data input interface (REDINT) → CENTRALIZED DATABASE → [SYSTEM] - Data Analytics Interface (DAI) - Data Prediction Interface (PINT) - User management and operation management interfaces (UMI and OMI) - COMMUNITY MGMT INTERFACE (COMI) → [SYSTEM] - Mobile PINT - Crowd-sourced Input Interface (CIINT) - Medical Sessions Interface (MESI) → COMMUNITY → PUBLIC HEALTH OFFICE
AIME’S ACHIEVEMENTS GLOBALLY
GLOBAL TRACTION
Weather

Dengue

Construction

Hotspots

GLM
MapReduce

Single Tree Drive

Bayesian Network

Predicted Cases

Outbreak Likelihood

Hotspot Likelihood

Prediction

DISEASE ANALYTICS

93.0% Sensitivity

88.6% Accuracy

79.3% Specificity

VALIDATED

FIELD TESTED

93.0%

88.6%

79.3%
Accuracy of 84.11\%

5 days of Data Analysis With Limited Resources

DISEASE ANALYTICS
MANILA, Philippines

30 Days Prediction

84.87%
ZIKA
PREDICTION
87.45%
AIME PILOT WITH RIO CITY HEALTH DEPARTMENT
AIME Inc WITH THE GOVERNMENT OF PHILIPPINES
AIME AWARDED FOR ITS EFFORT FROM THE CLINTON FOUNDATION
AIME, WINNER OF KING’S COLLEGE LIFE SCIENCE AWARD
AIME AS THE GLOBAL TOP 8 HEALTH INNOVATOR AWARD

MASSACHUSETTS, USA JULY, 2016
AIME Inc invited as EXPERTS to lead Vaccine Deployment site in United States of America & Latin America.
Infectious Disease: The Beginning Of The End


Every year, 2.5 billion people are at risk of catching Dengue fever. And there is almost nothing you can do about it. I was told that there is no current vaccine for Dengue fever. I was surprised this was true, but according to a bunch of sites on the internet, it is true. Also not good. So if there is no current vaccine, what is the solution?

Prevention. But how?

AIME (Artificial Intelligence in Medical Epidemiology) is a company out of Singularity University that developed an algorithm capable of predicting outbreaks of Dengue. I have written about Singularity University before, but basically it assembles the best and brightest minds from around the world to solve problems that affect one billion people. In fact, Singularity only works with people that focus on solutions that will help at least a billion people. I love Singularity University. I go any chance I get. AIME is a perfect example of the genius that comes from the program.
LARVA: 75.5%
AEDES: 92.2%

OUTBREAK PROBABILITY: 69.99%