



Dengue Actionable and Collaborative Surveillance

Value And Shared Benefits Beyond Communication



2017: Winner, Association of Strategic Alliance Professionals **CSR Excellence Award**



2016: Recognized as WHO eHealth case study



2015: Winner "Most impactful emerging or global initiative"



2014: Social good awards, Winner in Healthcare

The Synergist: Leading Co-Impact on Societal Issues



The Synergist is a social venture that addresses a growing need to collectively face societal issues by addressing broken or inefficient systems and accelerating societal (co-)impact.



Our Model

 An open issue centric ecosystem	 A strong identity and storytelling plan	 Owned initiatives to address gaps
<ul style="list-style-type: none">• A robust and agile partnership governance model• The Synapse Digital Suite for landscape mapping and networking tool• Experts communities online and offline	<ul style="list-style-type: none">• An independent Editorial Board• Strong digital channels and storytelling• Social media engagement	<p>Advocacy: Examples include Global Dengue Day; Matrix for Maternal Health Performance Matrix.</p> <p>Tools: Examples include framework for patient engagement; reputation toolkit for patient organizations, online repositories.</p> <p>Innovative solutions: Examples include new dengue actionable surveillance based on big data, crowd surveillance; Patient Engagement Portfolio Management</p>

PFMD – an open, independent global coalition of health stakeholders

Advancing a consistent approach to meaningful patient engagement, through co-creation and implementation of an actionable meta-framework

made
with
patients

- Global approach
- Map the landscape
- Connect
- Synergise and align

Co-created meta-framework for patient engagement

Current Membership – June 2017



INVOLVE

DIA

PARKINSON'S^{UK}
CHANGE ATTITUDES.
FIND A CURE.
JOIN US.



AstraZeneca



AMGEN



PATIENT FOCUSED
MEDICINES DEVELOPMENT

Patient Focused Medicine Development

made
with
patients

3 workstreams:

1 Awareness & Culture change

2 Building a PE ecosystem

3 Building a PE framework (which is adopted)

Key projects:



A. Stakeholder expectations matrix

B. PE Toolkit:

- a. SYNAPS E
- b. Reputation & crisis management
- c. PE Quality Guidance
- d. Do's & Dont's
- e. Book of good practices

C. IMI project

D. PE pharma training

E. Net Present Value simulator

F. [Pledge to patients](#)



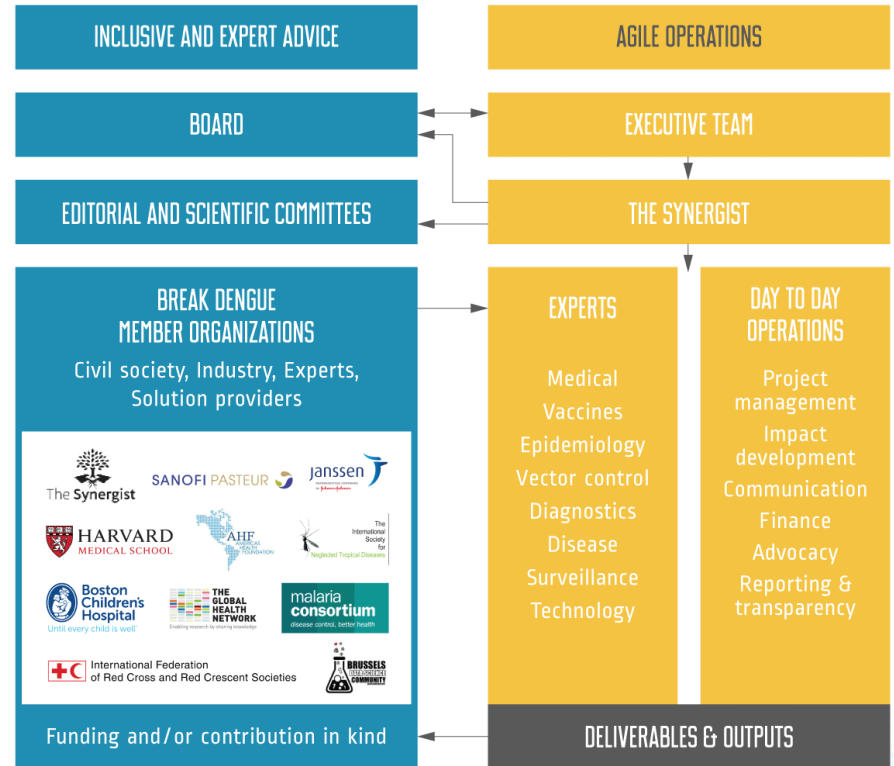
Break Dengue in a nutshell

DESPITE THIS, DENGUE GETS LITTLE ATTENTION ON THE GLOBAL PUBLIC HEALTH AGENDA...

Efforts tend to be isolated, short-lived and limited to certain sectors or geographies.

Break Dengue is a non-profit organization that aims to connect different initiatives around the world that are addressing the issue of dengue so that together they can have a bigger impact.

Let us break the silence and help dengue sufferers be heard about the need to make this a priority.



The Break Dengue ecosystem, building collective impact...

Global Dengue Lab

What are you looking for? **SEARCH**

We should all care about **DENGUE**

Break Dengue

Home About Articles Research Groups Community Dengue Video Library Contact Us

Home

Global Dengue Lab is a sharing and collaboration platform for professionals who work on the prevention, surveillance or treatment of dengue fever. Run by the Break Dengue initiative, it offers a unique opportunity to engage with professionals from different fields of expertise around the world, providing one central point to help tackle the burden of dengue collectively. Conversations include research and development of new techniques and technologies; best-practice sharing; project development and partnerships. You can read more [here](#).

Welcome

Global Dengue Lab provides a space for dengue experts from different regions and disciplines to share information, develop collaborations and establish guidelines and recommendations collectively. [LEARN MORE](#)

Discussions

Group: **DENGUE MAPPING DISCUSSION**
 Search:

Launch of crowdsourced dengue fever map

Innovative Dengue Track initiative turns big data into actionable information. People from all over the world now have the chance to report cases of the ...

3 REPLY
 LATEST REPLY: SEP 3, 2016

Dengue Video Library

Latest related Dengue videos

Tweets by @BreakDengue

Break Dengue @BreakDengue
 #fluoride, insulin and dengue fever. See the connection. [16 VIDEOS](#) @globebeat #dengue

Did Cristian... See [breakdengue...](#)

Break Dengue @BreakDengue
 It's time to invest in prevention to reduce the economic burden of dengue. [10 VIDEOS](#) @globebeat #dengue

Measuring L... Learn more... [breakdengue...](#)

Brazil Exchange



theguardian

Outbreaks like Zika distract us from other medical emergencies
Gary Finnegan

Editorial

Break Dengue

€10,000 PRIZE: HELP US BREAK DENGUE

Do you have an initiative that could help to combat dengue fever in your community?

Apply now



Dengue Prize

Dengue Lab 1250+

Hackathons & Epihacks

LET'S PREVENT GLOBAL DENGUE CRISES!



OPEN CALL FOR DATA

Dengue outbreaks are sporadic, unpredictable and highly disruptive. The spread of mosquito-borne diseases poses a major threat to public health. But digital technologies and big data are proving to be game-changers in detecting and preventing outbreaks of diseases like dengue.

We are very excited to share our Dengue Track data at the Hackathon organised by DengueHack.org on November 25th and 26th in Brussels. During the two days, scientists will use our data and the data we'd like to ask you to help us collect to look at:

- How can we identify outbreaks sooner?
- How can we predict future outbreaks?
- What factors might influence dengue spread and outbreaks?

Share on   

JOIN US!

IF YOU HAVE:

- Dengue-specific data
- Data related to mosquitoes [specifically *Aedes aegypti*]
- Data related to other mosquito-borne diseases [specifically chikungunya, zika fever, and yellow fever viruses]
- Weather data/ Climate data/ Vegetation data
- Medical data/ Transportation data/ Travel data/ Agricultural data
- Demographical data

Announcing our Partnership with Break Dengue

Posted on October 14, 2016 by Philippe Van Impe

We're happy to announce our collaboration with Break Dengue for our upcoming hackathon to stop the spread of dengue.

Break Dengue will support us with their knowledge, ideas, and data about the spread of dengue that they've gathered over the past four years of working against this disease.

On our part, we'll engage the data science community to work with this data to visualize the spread of dengue and to forecast future outbreaks, and provide the analysis required to put these ideas and knowledge into action.

Break Dengue is a non-profit organization that aims to connect different initiatives around the world that are addressing the issue of dengue and provide an open platform for doing so.



Break Dengue at the Millennium Campus Conference at the United Nations

Denguehack.org is a non-profit initiative from the European Data Innovation Hub. It involves bringing data scientists together to work toward the common goal of better understanding the spread of this disease and making big data a weapon in the arsenal in the fight against Dengue.





✳ Break Dengue

DON'T LET DENGUE BREAK YOU

Surveillance is a key WHO action plan pillar (2016)

1. Strengthen surveillance systems
2. Use + link multiple sources of information
3. Improve early-warning systems
4. Establish web-based real-time system for monitoring trends
5. Address variety of information:
 - event and indicator-based surveillance (cases)
 - virus (serotype and genotype)
 - vector (species, population densities)
 - environmental (e.g. weather)



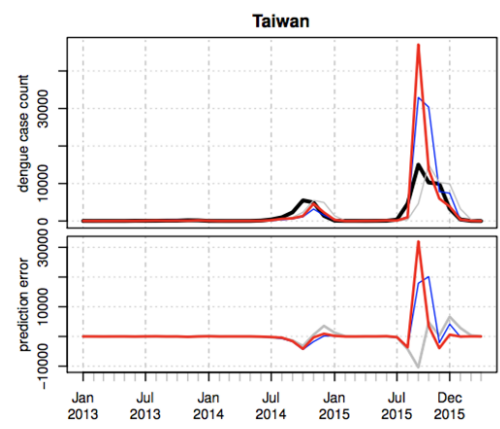
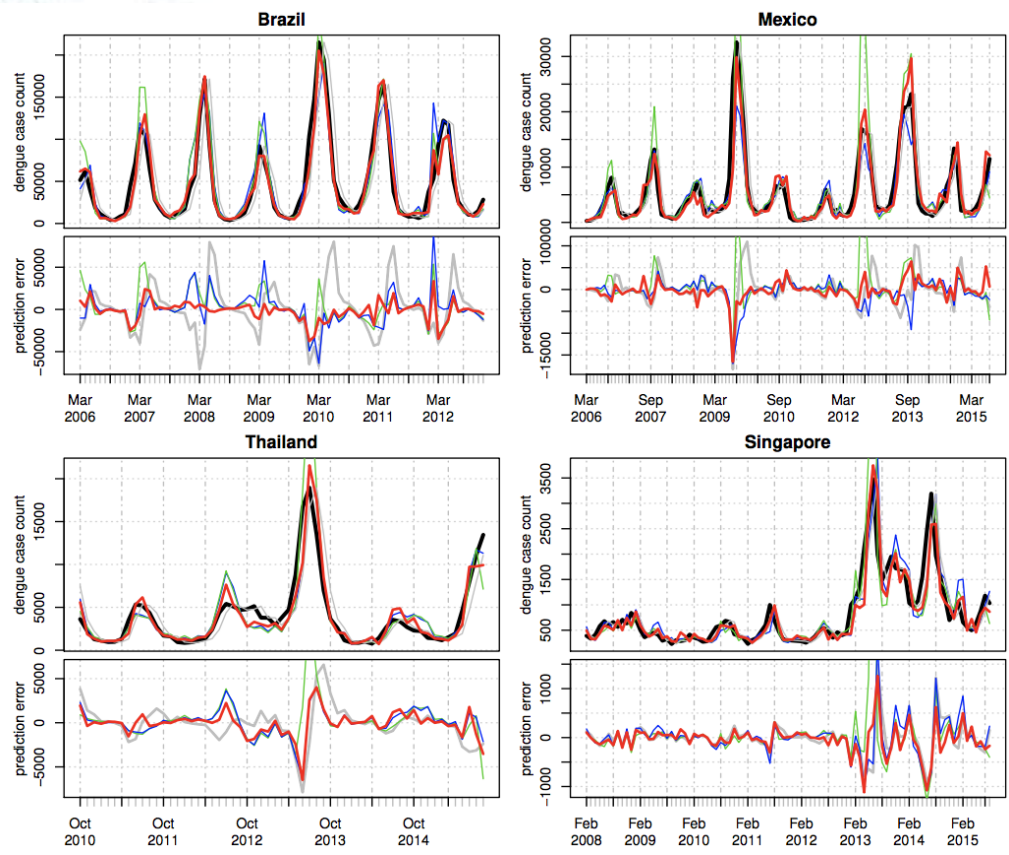


Advances in using Internet searches to track dengue

Shihao Yang¹ S.C.Kou^{1,*}, Fred Lu², John S Brownstein^{2,3}, Nicholas Brooke⁴, Mauricio Santillana^{2,3,*}

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4. The Synergist, Brussels, Belgium

Characteristics	Brazil	Mexico	Thailand	Singapore	Taiwan
ARGO correlation	0.971	0.924	0.928	0.903	0.834
Median yearly case count	590,000	48,000	47,000	5,400	1,700
Seasonality (correlation of SAR)	0,917	0,911	0,917	0,847	0,878
Internet penetration [41]	50%	38%	27%	74%	76%
Google market share [42]	97%	93%	99%	84%	42%
Report frequency	monthly	monthly	monthly	weekly	weekly
Population (avg. in millions) [43, 44]	198	120	67	5.2	23
Median yearly incidence (per 10,000)	29.1	4.1	8.0	10.5	6.8
Country size (10 ³ mi ²)	3,290	758	198	0.28	14
Population density (per mi ²) [43]	60	160	340	18,700	1,600
GDP (per capita avg. over study period) [43]	\$10,100	\$9,200	\$5,800	\$55,000	\$31,900



- Target
- ARGO
- SAR
- SAR + GDT
- naive

Brazil has peaks of about 150,000 cases and RMSE ~ 12,000 cases (so, less than 10% error)

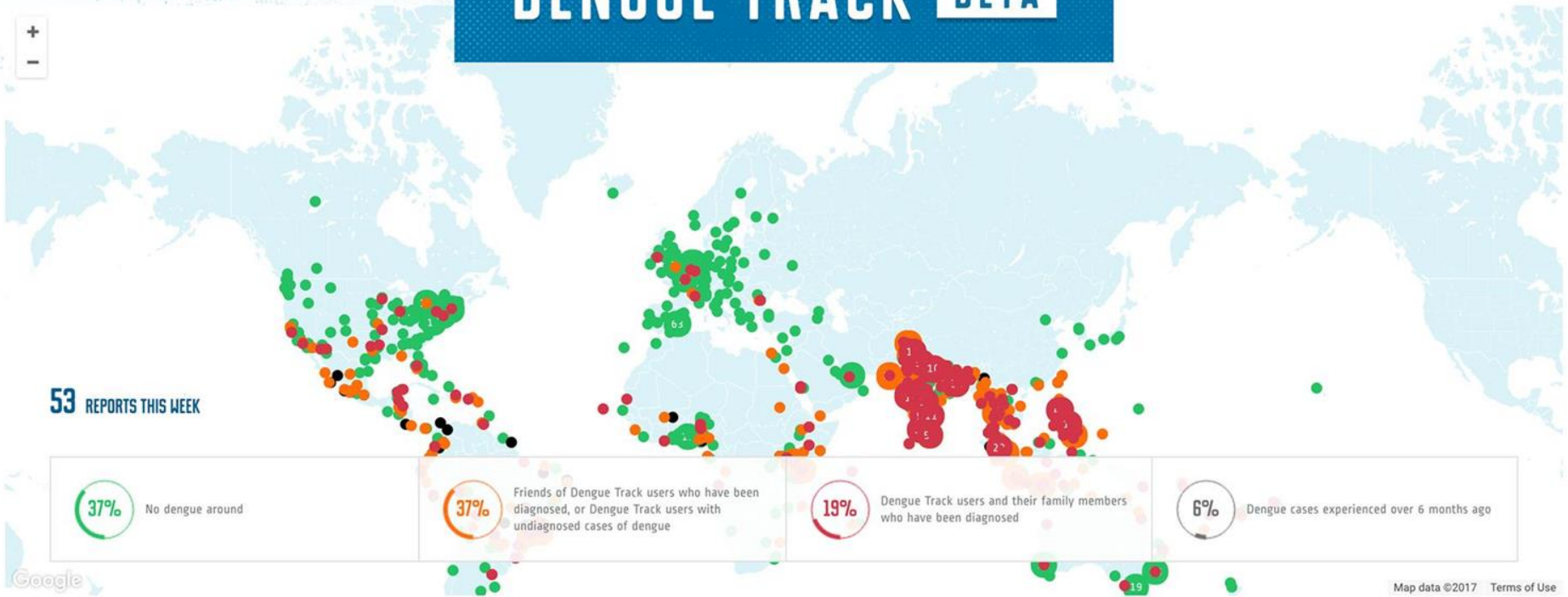
Mexico has peaks of about 25,000 cases and RMSE 2,427 cases (about 10%)

Thailand has peaks of 10,000 to 20,000 and RMSE 1400 cases (about 10%)

Singapore peaks of 3,000 and RMSE 293 cases (about 10%)

Taiwan latest peak of about 15,000 and RMSE 4800 (about 30%)

DENGUE TRACK **BETA**



53 REPORTS THIS WEEK



No dengue around



Friends of Dengue Track users who have been diagnosed, or Dengue Track users with undiagnosed cases of dengue



Dengue Track users and their family members who have been diagnosed



Dengue cases experienced over 6 months ago



Targeted and Informative Toolkits

RISK OF DENGUE IN TROPICAL COUNTRIES

But the risk of dengue is not only limited to tropical countries. The number of reported dengue cases is continually increasing. The disease spreads to new areas, and explosive outbreaks are occurring. There have been cases reported in Europe and the U.S.

A THREAT FOR

Among travellers returning from endemic areas, dengue is the second most common illness.

PREVENTION

No chemoprophylaxis can prevent dengue.

If you travel to endemic areas you are at risk of contracting dengue.

Risk increases with long duration of travel and passes such as during epidemics or the rainy season.

Travellers going to the tropics are advised to avoid mosquito bites.

Use insect repellents following instructions on the label.

ANYONE CAN BE INFECTED WITH THE DENGUE VIRUS

<p>50%</p> <p>About half of the world's population is now at risk because they live in dengue endemic regions</p>	<p>100</p> <p>More than 100 countries are endemic but dengue cases are reported in several non endemic countries</p>	<p></p> <p>The global incidence of dengue has grown dramatically in recent decades</p>	<p>?</p> <p>The actual numbers of dengue cases remains underreported and many cases are misclassified</p>
<p>390</p> <p>One recent estimate indicates 390 million dengue infections per year</p>	<p></p> <p>Dengue is a mosquito-borne viral infection</p>	<p></p> <p>Dengue is found in tropical and sub-tropical climates worldwide, mostly in urban and semi-urban areas</p>	<p></p> <p>The infection causes flu-like illness, and occasionally develops into a potentially lethal complication</p>
<p>X</p> <p>There is no specific treatment for dengue / severe dengue</p>	<p>1%</p> <p>But early detection and access to proper medical care lowers fatality rates below 1%</p>	<p></p> <p>Dengue prevention and control depends on effective vector control measures</p>	<p></p> <p>A vaccine is available in some countries for those who are 9-45 years old living in endemic areas</p>

KEEP DENGUE AWAY

The main method to control or prevent the transmission of dengue virus is to combat vector mosquitoes through:

<p></p> <p>Preventing mosquitoes from breeding by removing standing water and improving environmental management and modification</p>	<p></p> <p>Disposing of solid waste properly and removing artificial man-made habitats</p>
<p></p> <p>Applying appropriate insecticides to water storage and outdoor containers</p>	<p></p> <p>Using of personal protective measures such as wearing long-sleeved shirts, long-sleeved trousers, mosquito coils and vaporizers</p>

DENGUE IS DIFFICULT TO RECOGNIZE

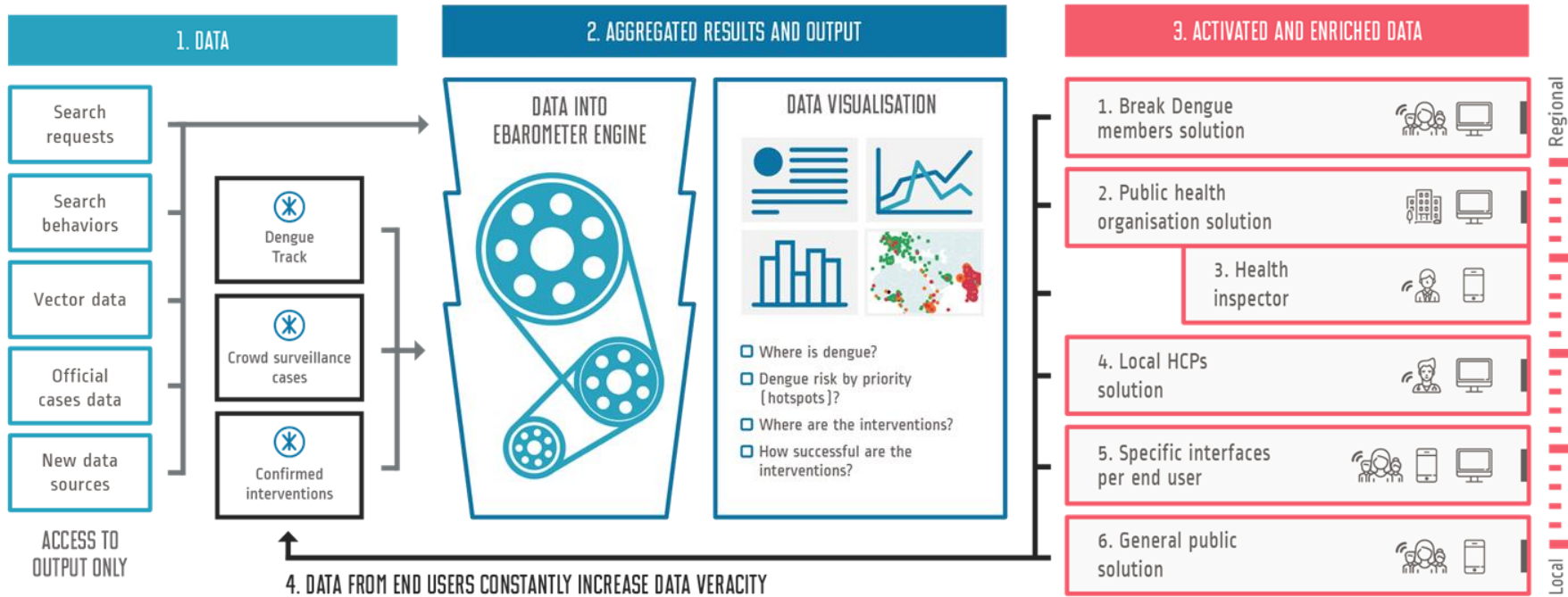
Dengue is difficult to recognize because the early symptoms of fever, headache, body aches are not specific. Dengue may be misdiagnosed as other illnesses: influenza, typhoid, zika, malaria ...

75% of dengue infections are asymptomatic	20% are mild – moderate dengue fever	5% are severe dengue: 500,000 people with severe dengue require hospitalization each year and 2.5% of people will die
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SYMPTOMS

High fever	Severe headache	Pain behind eyes
Skin rashes	Muscle and joint pains	Vomiting

WARNING SIGNS OF PROGRESSION TO SEVERE DENGUE



MULTI DISEASE APPROACH

