Advocacy and Communication in the Prevention and Control of Vector-borne Diseases

PROFESSOR EMERITUS LULU C. BRAVO, MD
UNIVERSITY OF THE PHILIPPINES MANILA
DISCLOSURE

RECEIVED RESEARCH GRANTS FROM:

GSK, TAKEDA, NOVARTIS, SANOFI, PFIZER, SSI-BMGF AND SEQUIRUS IN THE LAST 5 YEARS.
725,000 people are killed annually by devastating diseases carried by mosquitoes such as malaria, dengue, yellow fever, chikungunya, Zika, chikungunya, Japanese encephalitis, etc.
Malaria is endemic in 91 countries with 40% of population at risk (WHO 2017)

- Dengue is endemic in 100 countries with 50% of population at risk (WHO 2017)
Tropical countries are at risk of dengue.

Logistic regression model with vapor pressure (humidity) as the predictor of dengue fever risk, using climate data from 1961 - 1990. The model is 89% accurate. Colours represent probability of dengue transmission.

Source: Simon Hale et al. The Lancet, 6th Aug 2002
Dengue: Global Perspective

- Dengue is fast emerging **pandemic-prone viral disease** in the world (WHO, 2017)

- The incidence increased to **30-fold** in the last 50 years (WHO 2017).

- An estimated **390 million** dengue infections occur each year*
  - **96 million** infections have clinical signs and symptoms
  - **294 million** have **no** clinical signs and symptoms

- **70%** of global dengue disease burden is in the Asia Pacific region*
THE MOST HIGHLY DENGUE-ENDEMIC COUNTRIES

Recent Dengue Outbreaks in Western Pacific Region, 2013-2015

Philippines ranks 1st in the WPR with most number of dengue cases
India faces worst dengue fever outbreak in years with more than 6,500 confirmed cases

By South Asia correspondent James Bennett
Updated 5 Oct 2015, 7.43am

India is in grip of its worst dengue fever outbreak in years, with more than 6,500 confirmed cases and at least 26 deaths in the capital New Delhi so far this season.

Across India, wards normally reserved for surgery are crammed with men, women and children battling the potentially fatal mosquito-borne virus.

Thousands of cases have overloaded the city's hospitals.

There is also a growing number of fatalities and allegations authorities have been slow to respond.

2015 - WORST YEAR FOR DENGUE IN 20 YEARS - 123,168 CASES CONFIRMED AND 116 DEAD

Thailand's public health officials have reported that 2015 was the worst year for dengue fever in more than 20 years.

Thailand's Ministry of Disease control estimates that 116 people died and as many as 123,168 cases of dengue fever were detected up until the end of November 2015.

Sophon Meekhan, deputy director-general at the Ministry of Public Health said in a statement that despite the high number of cases, the fatalities are not alarming compared to previous years, which shows our medical response is improving.

International health agencies such as the World Health Organisation have classified dengue fever as the world's fastest spreading tropical disease. In 2015, the highest numbers of cases in Thailand were recorded in Bangkok and Chiang Mai.

The World Health Organization issued a warning in November 2015 that the number of dengue cases globally has increased in recent decades with "explosive outbreaks" recorded in several Southeast Asia countries.

Malaysia dengue fever cases top 120,000 for 2015; Selangor state reports more than half

Malaysia, the Philippines, Thailand, Taiwan, Vietnam and India are some of the worst hit countries. According to the World Health Organization, Malaysia reported more than 107,000 cases and more than 293 deaths as hospitals across Asia struggle against soaring dengue cases.

In addition, 322 dengue related fatalities were reported nationally as of Dec. 28, more than 100 more than the previous year.

If we look at dengue fever in Malaysia since 2011, we see a steady climb each year. That year there were 19,884 cases/36 deaths. In 2012, it increased to 21,900/33; in 2013 it was 43,546/92 and last year 108,628/715.
**Bulacan declares state of calamity over dengue cases**

MANILA - The provincial government of Bulacan has declared a state of calamity due to the alarming number of dengue cases recorded in the province.

Through a resolution, the provincial government will allocate a P30-million calamity fund to prevent the continuous rise of dengue cases in the province.

The fund will be used to provide free hospitalization and medication for dengue patients. Dengue Express Lanes will also be established in all government hospitals to provide easy access and relief.

Records from the Provincial Epidemiology Surveillance Unit (PESU) showed there are 4,771 cases of dengue in the province since January 2015. Of this number, eleven have died.

---

**Isabela town in state of calamity due to dengue outbreak**

Luna town in Isabela province was declared in a state of calamity due to the year-round threat from dengue.

Health officials in Luna cited reports that at least 52 people had fallen ill due to dengue in May and June, GMA News stringer Joel Nueva reported.

Vice Mayor Andy Domingo and the town council approved a resolution declaring Luna is in a state of calamity due to the dengue cases.

This will allow the local government to access some P500,000 for fogging operations and financial assistance.

---

**Rise in Baguio dengue cases blamed on El Nino**

DENGY cases in Baguio City rose by 307 percent this year, the City Health Office reported.

The office’s chief of the epidemiology department, Dr. Donabel Tubera, attributed the increase to El Nino.

The country is in the middle of an El Nino episode that started in September and is expected to last until the middle of next year.

The warm air from the Pacific Ocean causes the dengue-carrying mosquito to breed faster, Tubera said.

She said males from 10 to 19 years old have the highest risk of contracting the disease.
The National Dengue Prevention and Control Program in the Philippines is mainly focused on vector control and community mobilization in cooperation with the Local Government Units.

Integrated Vector Management

CURRENT VECTOR CONTROL STRATEGIES HAVE NOT STOPPED THE SPREAD OF DENGUE

Key Anti-Dengue Campaigns

4-S Strategy
- Search and destroy
- Self-protection measures
- Seek early consultation
- Say no to indiscriminate fogging

The Four O’clock Habit
- Community activities
- Dengue Awareness Month

Health Advisory DENGUE
Mag 4S Laban sa Dengue
Search and Destroy
Self-protection measures
Seek early consultation
Say no to indiscriminate fogging

SUGPUIN ANG DENGUE!
3:00 PM – 4:00 PM
PAGTIBAYIN!

Walk Against DENGUE
Dengue ranks 8\textsuperscript{th} in the leading cause of morbidity (FHSIS= 70,736 cases).

According to PIDS report, there are 200,415 dengue cases in 2015.
Suspected Dengue Cases Reported & Case Fatality Rate (CFR), Philippines 1993 – 2015

- From 1995 – 2015, average of >63,000 cases/year
- CFR declining, dengue incidence is increasing
Dengue is hyper-endemic with all four serotypes circulating, in which serotype 1 and 3 are highly prevalent.
Over the years, dengue affects younger age group.
Serve as credible voices for the value of vaccines and recruit other advocacy voices

- WHO-DOV 2011
DENGUE DANCE: 2013 ASEAN DENGUE DAY
ERIC TAYAG STYLE
MEDSCAPE VIDEOS FOR CME

DENGUE PICTURES
DENGUE ACTIVITIES: MARCH – AUGUST 2017

Bangkok, Thailand

Manila, Philippines

Singapore

A DENGUE WHITE PAPER
For the WORLD!
BREAK DENGUE
Shaping a Collective Environment Ready to Tackle Dengue

2016: Recognized as WHO eHealth case study
2015: Winner “Most impactful emerging or global initiative”
Priorities Driven by WHO High Level Strategy

- Reduce mortality from dengue by 2020 by at least 50%
- Early case detection
- Improved outbreak prediction and detection
- Integrated vector management
- Effective communication to achieve behavioural outcomes

Break Dengue is a partner and catalyst in enabling and implementing integrated solutions towards the WHO 2020 dengue objectives.

Break Dengue’s mission is to connect, share and develop innovative solutions to dengue fever.

Vector control, surveillance, drugs, diagnostics and vaccines all hold exciting potential but none can solve the problem alone. We need an integrated approach.
Break Dengue has been recognized for an innovative approach...

Winner, ASAP Alliance for Corporate Social Responsibility Award 2017

WHO recognition as case study in WHO e-Health Report 2016

Winner, “Most impactful emerging or global initiative” at eyeforpharma 2015

Winner, the best use of social media in healthcare, Shorty Awards, 2014
Break Dengue takes a comprehensive approach to the challenges, engaging on multiple fronts:
The Break Dengue ecosystem, building collective impact...

Brazil Exchange

Dengue Lab 1250+

Dengue Prize

"Outbreaks like Zika distract us from other medical emergencies"

Gary Finnegan

The Guardian Editorial

Powered by The Synergist
Give the Red Card to Dengue!

2014 RED CARD CAMPAIGN
81,000 video views
250,000+ strong community
Over 1 million reached through mobilization campaign

2015 DENGUE TRIBE CAMPAIGN
370,000 page views on website during campaign alone; 500,000 during the year
Editorial coverage led by an independent editorial committee

43 published blogs
Views: 27,118

OCTOBER 19, 2017 - BY ALISON BOOTH
DENGUE IN CAMBODIA: USING GUPPIES AND GROWTH HORMONES TO FIGHT DISEASE

Dengue in Cambodia is endemic all year round. But budgets are tight. For some time, The World Health Organization (WHO) and Asian Development Bank (ADB) have been helping the authorities search for a cost-effective and sustainable way to tackle dengue in Cambodia. A more recent...

Read more

JULY 14, 2017 - BY ALISON BOOTH
URBANIZATION AND GLOBALIZATION: SPREADING DENGUE AROUND THE GLOBE

Half a century ago, dengue was under control; DDT and spraying kept Aedes aegypti mosquitoes at bay. In stark contrast, dengue is now a serious global health threat. Over the past four decades, dengue’s global threat has grown as urbanization and globalization have helped the...

Read more

OCTOBER 24, 2017 - BY ALISON BOOTH
HOW WOLBACHIA-INFECTED MOSQUITOES ARE REDUCING DENGUE OUTBREAKS

A naturally-occurring bacteria, Wolbachia can be found in around 60% of insect species, including some types of mosquito. Wolbachia, however, it is not usually found in the Aedes aegypti mosquito. But artificially infecting an Aedes population with Wolbachia reduces the mosquitoes’ ability to transmit dengue...

Read more
Global Dengue Scientific Network
Building & activating expert and scientific community

GLOBAL DENGUE LAB

- Partnership with Global Health Network
- Biggest dengue scientific & expert community globally, 1250+ members
- Place to build a dialogue with stakeholders, discuss ideas/solutions and keep momentum going
- The place to build a focused forum, closed and/or open

1250+ experts

Powered by The Synergist
Fostering innovation in combating dengue

Break Dengue Prize

- 2, €10,000 prizes awarded to design and test new approaches to integrating a dengue vaccine as part of a holistic plan to combat dengue.

- Break Dengue connected the Colombian prize winner with Sanofi-Pasteur in designing their survey about the acceptability and feasibility of introducing the dengue vaccine in Colombia.

- The Cambodia Dengue Prize winning project is advising the Ministry of Health on dengue policy as part of a comprehensive public health strategy.

"...the collaboration Break Dengue facilitated has proved mutually beneficial and has advanced my project’s goals..."

Dr. Aileen Chang
Asst. Prof. Of Medicine
George Washington University
Colombia Dengue Prize Winner
2. Education & Prevention

We have developed a complete dengue toolkit, specifically created to fit needs. You will find out more about dengue symptoms, disease prevention tips, information on treatment, and what to do if you’re travelling in a dengue endemic area. [https://www.breakdengue.org/download-toolkits/](https://www.breakdengue.org/download-toolkits/)

**DOWNLOAD THE TOOLKITS**

**LEARN MORE ABOUT DENGUE**

- Have you already been affected by dengue?
- Do you want to learn how to protect yourself and your family?
- Are you travelling in a dengue-endemic country?

*Powered by The Synergist*
TARGETED TOOLKITS

KEEP DENGUE AWAY

ANYONE CAN BE INFECTED WITH THE DENGUE VIRUS

RISK OF DENGUE IN TROPICAL COUNTRIES

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, rick, malaria ...

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

SYMPTOMS

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

WARNING SIGNS OF PROGRESSION TO SEVERE DENGUE

Covering, emptying and cleaning of domestic water storage containers on a weekly basis

Applying insecticides as space spraying during outbreaks as one of the emergency vector control measures

The infection causes fluid retention, and occasionally develops into a potentially fatal complication

The actual number of dengue cases involves underreporting and may reach between 100,000 and 300,000 cases per year

DENGUE IS FOUND IN TROPICAL AND SUB-TROPICAL REGIONS: AQUATIC AND WASTEWATER AREAS

The incidence of dengue has grown enormously in recent years.

TRAVEL

- Travel to middle-income countries;
- Countries of lower income;

PREVENTION

- By carrying out the following preventive measures

Powered by The Synergist

Healthline Canada Society for Primary Health
Break Dengue

DON’T LET DENGUE BREAK YOU

Powered by The Synergist
Break Dengue - a WHO case study

Global diffusion of eHealth: making universal health coverage achievable - a new WHO report

featuring Break Dengue

The report explains how Break Dengue has built a coalition of stakeholders to meet the considerable challenge posed by dengue fever.
1. Tracking Dengue

The challenge of mapping dengue fever is immense but digital technology can help. Dengue Track is an initiative from Break Dengue that is using big data to build the ultimate dengue tracking system.

This online interactive tool centralizes information about dengue outbreaks from a range of sources, adds data from social media channels, and alerts people when they may be at risk of dengue.

Don’t Let Dengue Break You!

Break Dengue – AIESEC partnership launch

Cartagena, Colombia

www.breakdengue.org
Our mission is to bring Break Dengue to the ground in Brazil!

OUR OBJECTIVES

- Bring Break Dengue’s strategy and tools (e.g. Dengue Track) live in the field, reinforce our position as the leading platform driving the fight against dengue
- Bring our [Don’t Let Dengue Break You](#) awareness and mobilization campaign to local communities and document it
- Generate powerful stories about dengue that we can share with target audiences for a viral effect
- Explain concretely what people can do to contribute to dengue prevention for themselves and for their communities
- Build a sense of urgency
- Strengthen relationships with influential NGOs and community organizations in your area
THE NEED FOR A VACCINE AGAINST DENGUE IS CLEAR\(^1\)

- Insufficient prevention and control
- Lack of a specific treatment
- Lack of prophylactic measures
- Pressure to do more

Need for dengue vaccine