


Climate Change & Dengue Incidence

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Contents

- Dengue Incidence
 - Dengue Temperature and Rainfall
 - Dengue & Climate Change
 - Conclusions
- 

Singapore's Dengue 'Emergency'

World Africa Americas Asia Australia China Europe India Middle East United Kingdom

Singapore's dengue 'emergency' is a climate change omen for the world

By Heather Chen, CNN

Published 10:13 PM EDT, Mon June 6, 2022



Edgar Su/Reuters

2020 / 2022 showed
>50% increase in
dengue peaks from
2013 & 2014

Using information on Climate
Change to predict Dengue
Incidence rates in Singapore

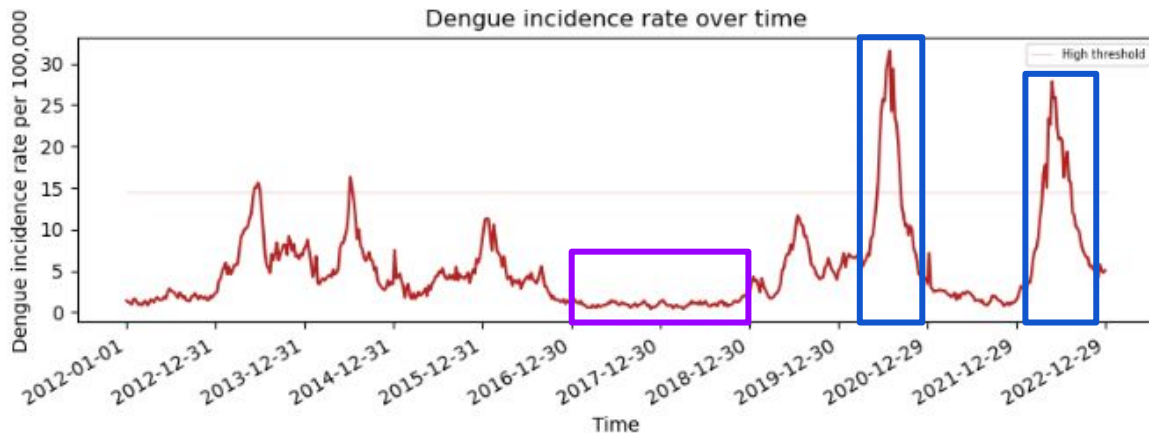
Dengue Incidence

2017-2018

Low period factors:

- Herd immunity
- Increased vector control efforts
- Gravitrap

* Data gathered from data.gov.sg and singstat.gov.sg



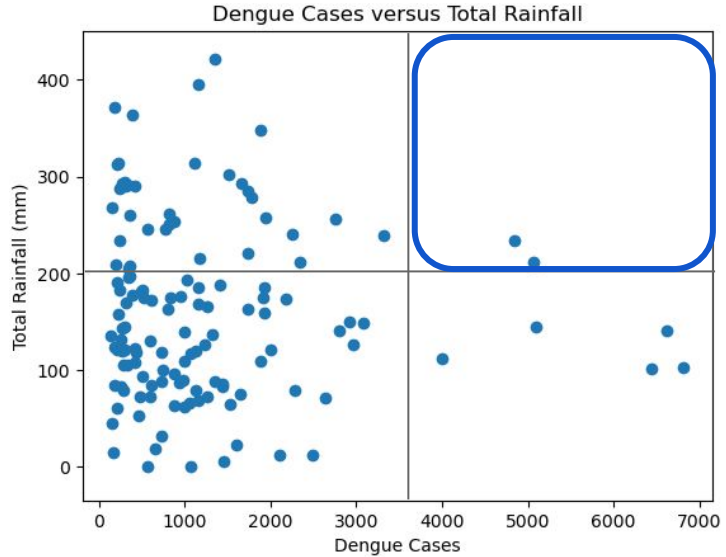
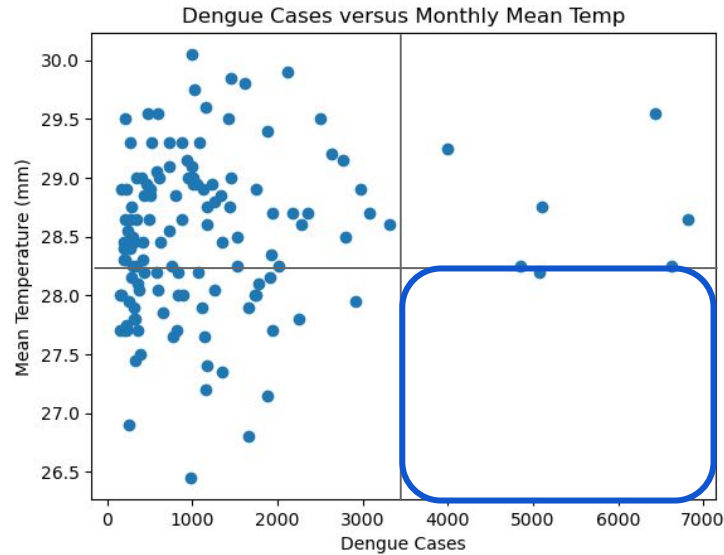
Were temperature and rainfall contributory factors?

2020 & 2022

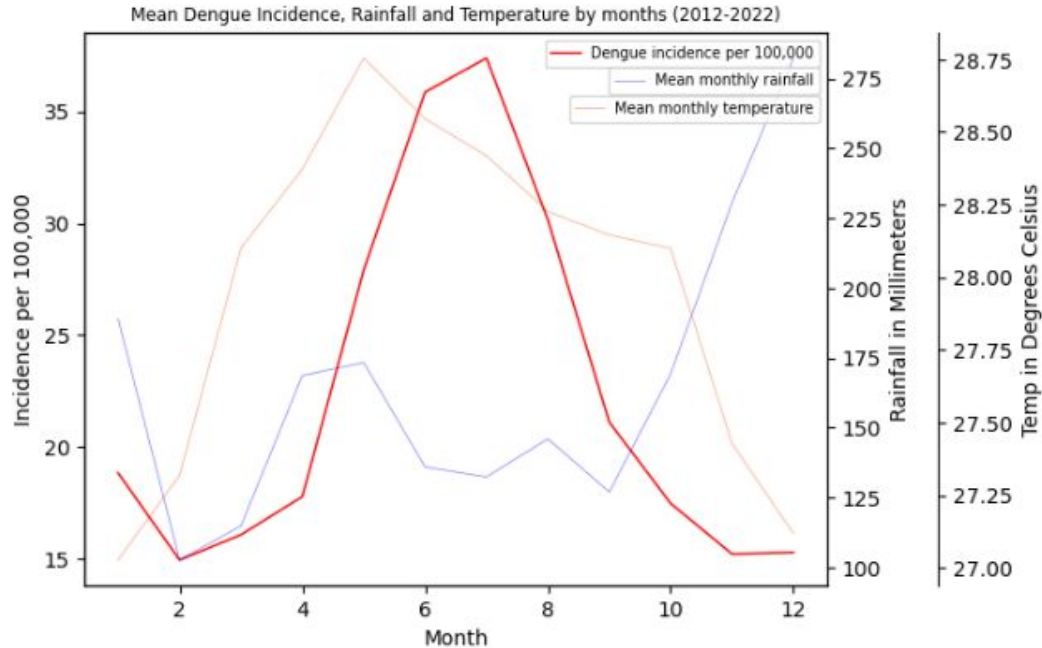
High peaks factors:

- Change in serotype
- Lower herd immunity
- WFH measures due to COVID-19

Dengue, temperature and rainfall



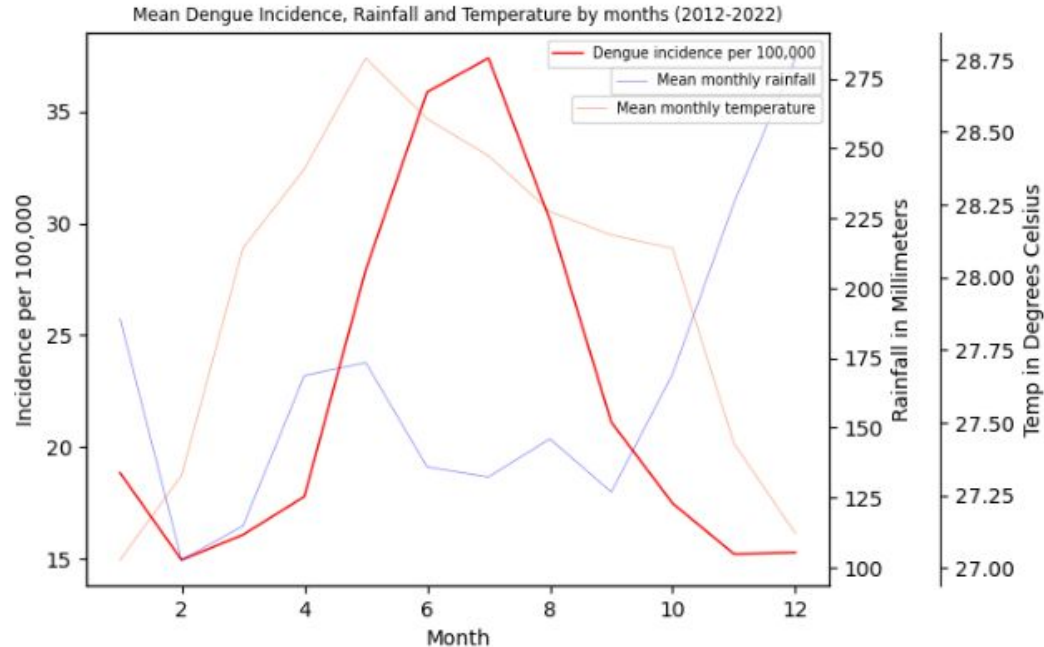
Dengue Season



Dengue peaks
in the middle
of the year

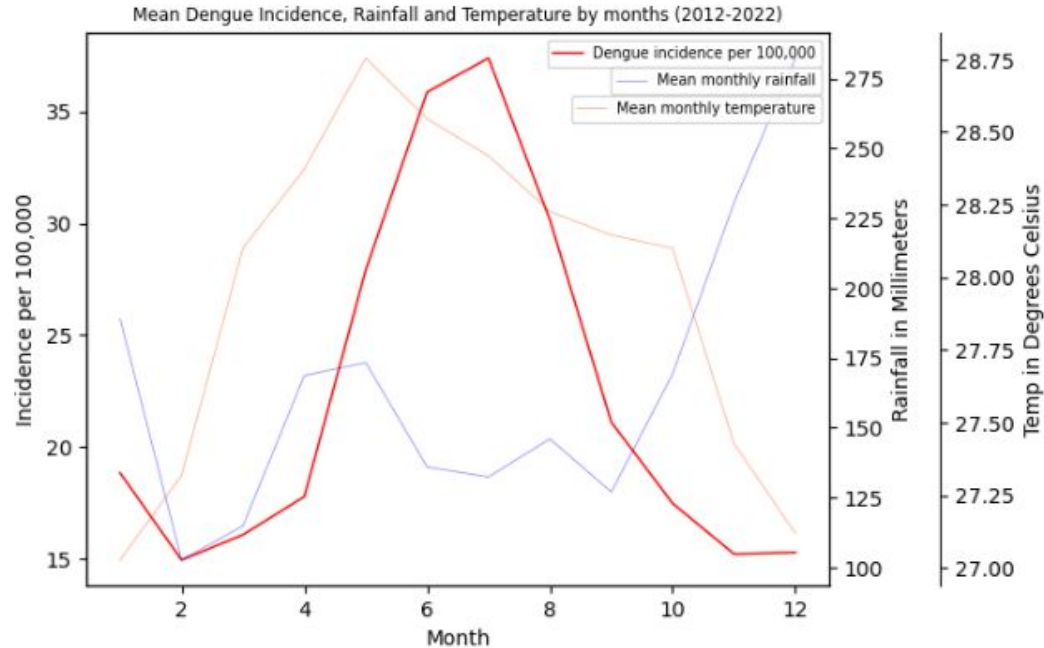
Lag of 1-2 months

Dengue and Temperature



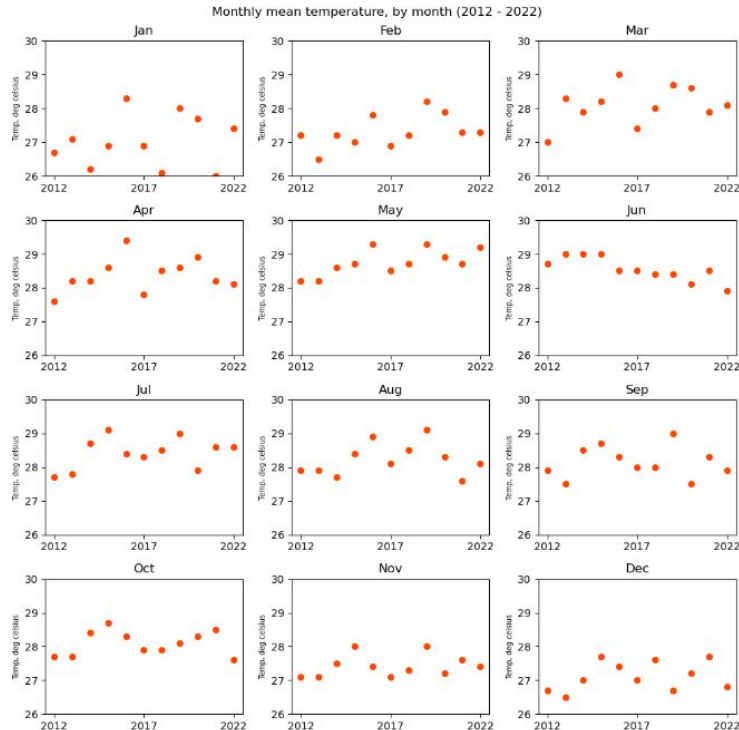
Population
Survival
Life cycle
Feeding patterns

Dengue and Rainfall

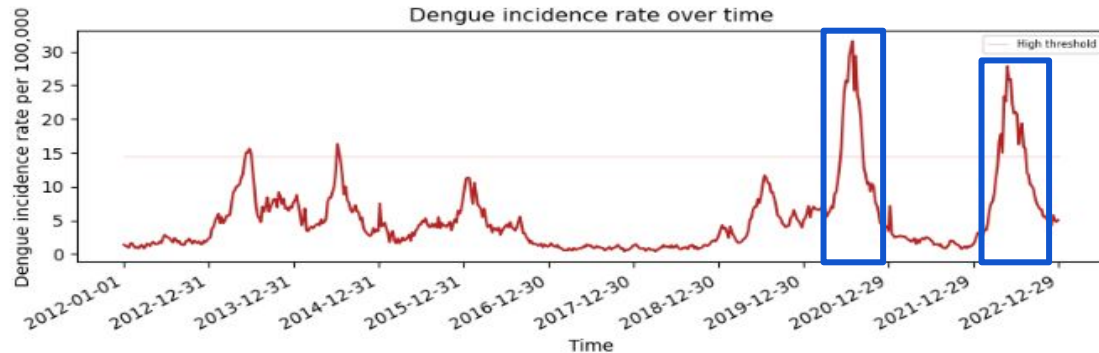


How much rain?

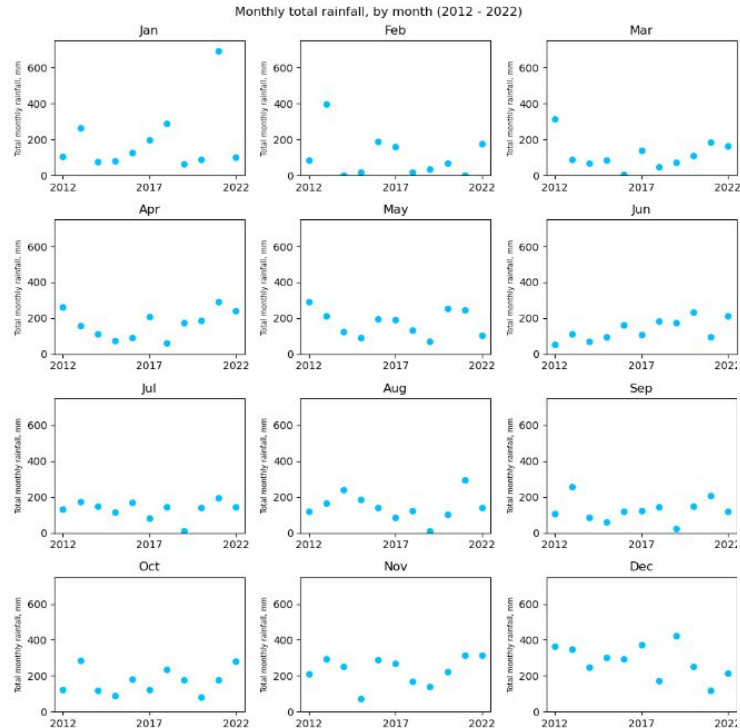
Is Climate Change Playing Out ? – Temperature



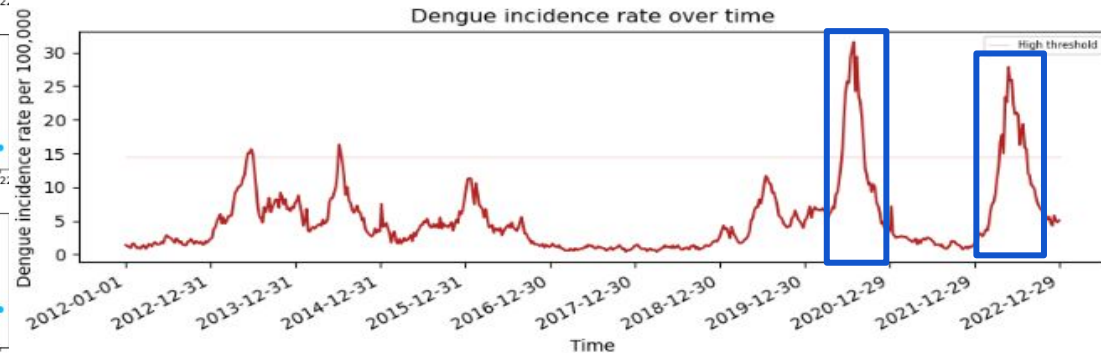
- Hot months are getting hotter
- But are peaks getting 'peakier'?



Is Climate Change Playing Out ? – Rainfall



It's hard to say



Conclusion & Recommendations

Is a correlation between dengue incidence rates, temperature and rainfall? **YES**

HOWEVER,

To better predict dengue infection rates, other factors have to be taken into account as well.

THANK YOU

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