



# \*FightTheBite

**ANALYSIS ON THE RISING CASES OF DENGUE IN THE PHILIPPINES**



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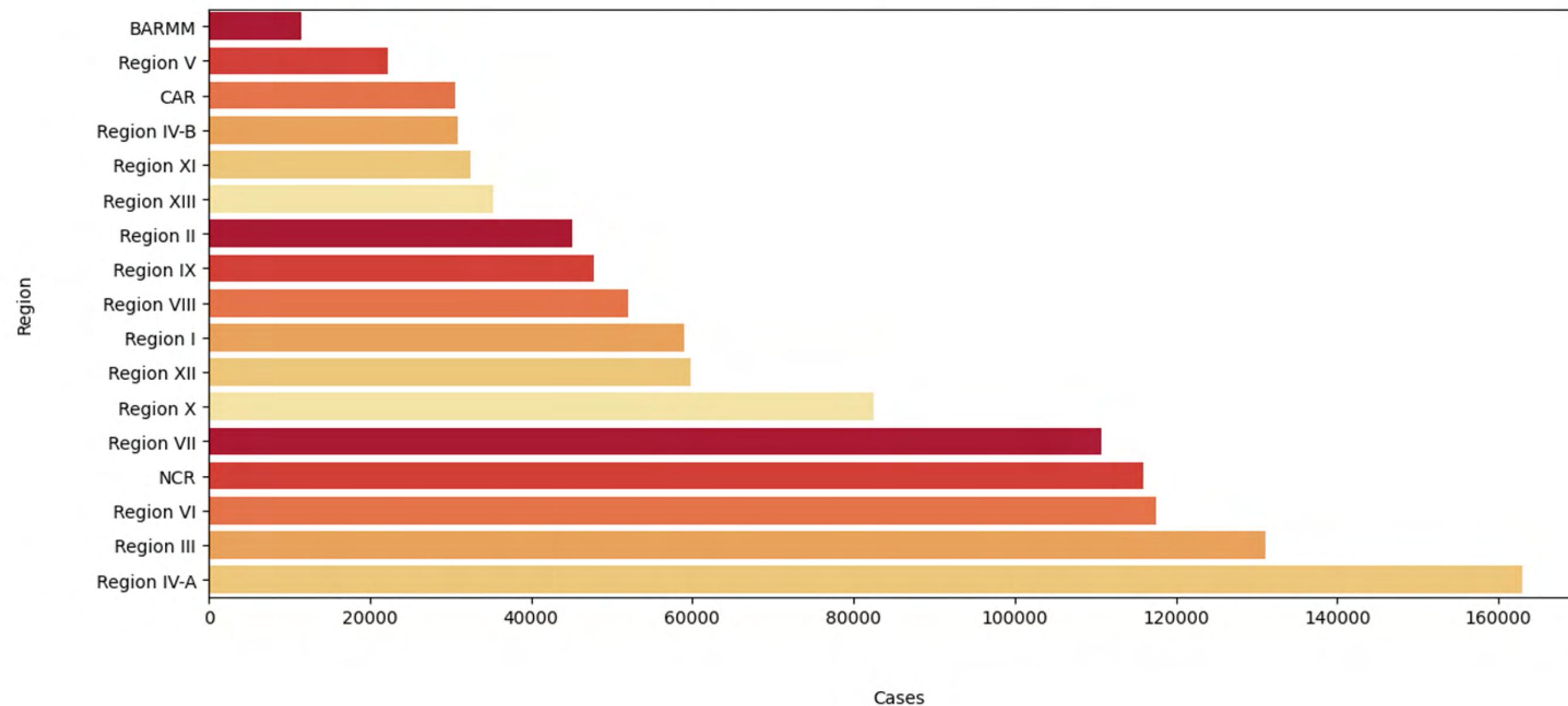


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# INTRODUCTION

## Dengue Cases per Region from 2016–2020

Total cases per region from 2016-2020



# **INTRODUCTION**

The most well-known and feared tropical disease in the Philippines is likely dengue. Dengue has been an endemic disease in Southeast Asia since the first outbreak was documented there in 1954 in Manila. In 2019, the Philippines had the highest number of dengue infections ever reported globally with 437,563 cases.



# CAUSES AND SYMPTOMS

Dengue is spread by various Aedes-type mosquitos, primarily A. Aegypti. The dengue virus causes dengue fever, a mosquito-borne illness. Symptoms usually appear three to four days after the occurrence.

Dengue Fever Symptoms	Dengue hemorrhagic fever symptoms
<ul style="list-style-type: none"><li>• high fever</li><li>• headache</li><li>• vomiting</li><li>• muscle and joint discomfort</li><li>• skin rash</li></ul>	<ul style="list-style-type: none"><li>• bleeding,</li><li>• low blood platelet count</li><li>• release of blood plasma</li><li>• the condition may progress to dengue shock syndrome, which causes dangerously low blood pressure.</li></ul>



## **DENGUE CONTROL MEASURES**

In 1993, the Philippine government established the National Dengue Prevention and Control Program to address this rising issue.

The Department of Health has focused on environmental control measures and certain chemical control measures.



## **4S STRATEGY IMPLEMENTED BY THE DEPARTMENT OF HEALTH**

- Search and destroy mosquito-breeding sites
- Secure self-protection measures
- Seeking early consultation
- Support fogging or spraying

Additionally, living in an air-conditioned or well-screened home can help and be cautious if a member of your family becomes dengue fever.



# DENGUE

- Dengue causes about 20,000 deaths annually. Dengue fever is caused by any of four distinct serotypes (DENV 1-4) of single-stranded RNA viruses of the genus Flavivirus. More than 100 million people are affected each year by this virus, which has the fastest global spread of any mosquito-borne disease.
- Additionally, dengue, which is present in more than 100 countries, kills 20 to 25,000 people every year, mostly children.



# **DENGUE FEVER DATA**

- The Philippines Department of Health has issued the final dengue fever data for 2023, with a total of 29,885 cases reported as of 25 March 2023, epidemiological week 12. When compared to the same period in 2022, the number of instances is 85% greater ( $n=16,154$ ). From 1 January to 25 March 2023, there were 96 fatalities (CFR 0.3%), which is more than the previous week's 92 deaths (CFR 0.3%) but fewer than the 107 deaths (CFR 0.7%) for the same time in 2022. However, the only available data that the researchers have gathered are from the year 2016-2020



# SUSTAINABLE DEVELOPMENT GOALS

## SUSTAINABLE DEVELOPMENT GOALS (SDG)



**Sustainable Development Goal 3**  
Ensure healthy lives and promote well-being for all at all ages.

# SUSTAINABLE DEVELOPMENT GOALS

## SUSTAINABLE DEVELOPMENT GOALS (SDG)



### Sustainable Development Goal 6

Ensure availability and sustainable management of water and sanitation for all.

# PROBLEM STATEMENT



In the Philippines, dengue fever is one of the most serious health problems. Most outbreaks in the nation take place during the wet season (June to February), which is largely seasonal.



All four DENV serotypes are currently circulating in the Philippines, which also has the highest density of dengue outbreaks in Southeast Asia.



The virus that causes dengue fever is spread by infected mosquitoes to other mosquito species, where it causes dengue fever.

## **REDUCING THE DENGUE CASES**

There isn't a dengue fever vaccine available right now in the Philippines.

Therefore, the best way to stop the spread of the illness is to avoid its possible causes. In order to reduce the presence of Aedes, it is essential to comprehend their environment.



# **PROBLEM STATEMENT**

The lack of empowerment among the stakeholders of the National Dengue Prevention and Control Program to take responsibility for dengue prevention is a major obstacle to its effectiveness.

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The difficulty of eliminating local breeding grounds, which are mostly water-holding containers, was another issue that was confronted. Ineffective waste collection services may leave garbage lying where it can collect rainfall is another problem.



# **PROBLEM STATEMENT**

The water storage is critical in some areas where pure water is scarce as well. However, there are chances where stored water also serves as a breeding ground for dengue mosquitoes. As a result, poor home water management and sanitation are possible risk factors for the dengue illness.



# PROBLEM STATEMENT

The Dengvaxia vaccine was introduced in 2016. Unfortunately, Sanofi, the company that developed the vaccine, admitted that there are problems with the vaccine's formula that causes a more severe illness. Due to this, lawsuits were filed by the parents against the government. As a result of the growing mistrust people had for the public health system, immunization rates fell, which led to a measles outbreak in 2019.



# **SIGNIFICANCE OF THE STUDY**



**To the Students**

**To the Local Government Unit (LGU)**

**To the Citizens and the  
Community**

**To the Future Researchers**

# METHODS

The researchers will gather, organize, and use available data-sets such as those provided from Kaggle to analyze the rising cases of dengue in the Philippines. The categories such as month, year, region, and number of dengue cases will be available in the said data-sets.



# **EXPECTED OUTPUT**



**STEPS & GUIDELINES**



**RAISE AWARENESS**

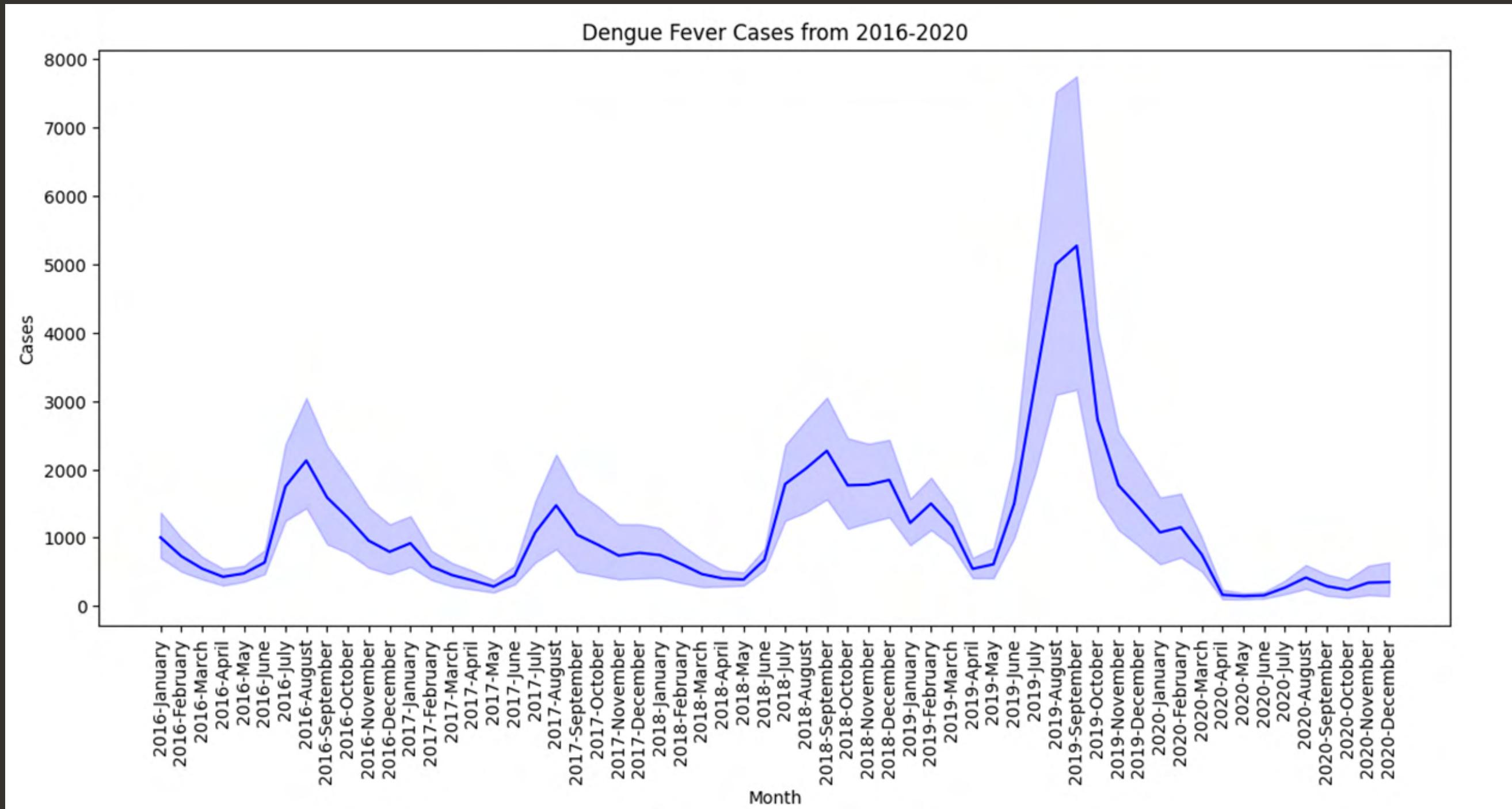


**REDUCE THE CASES**



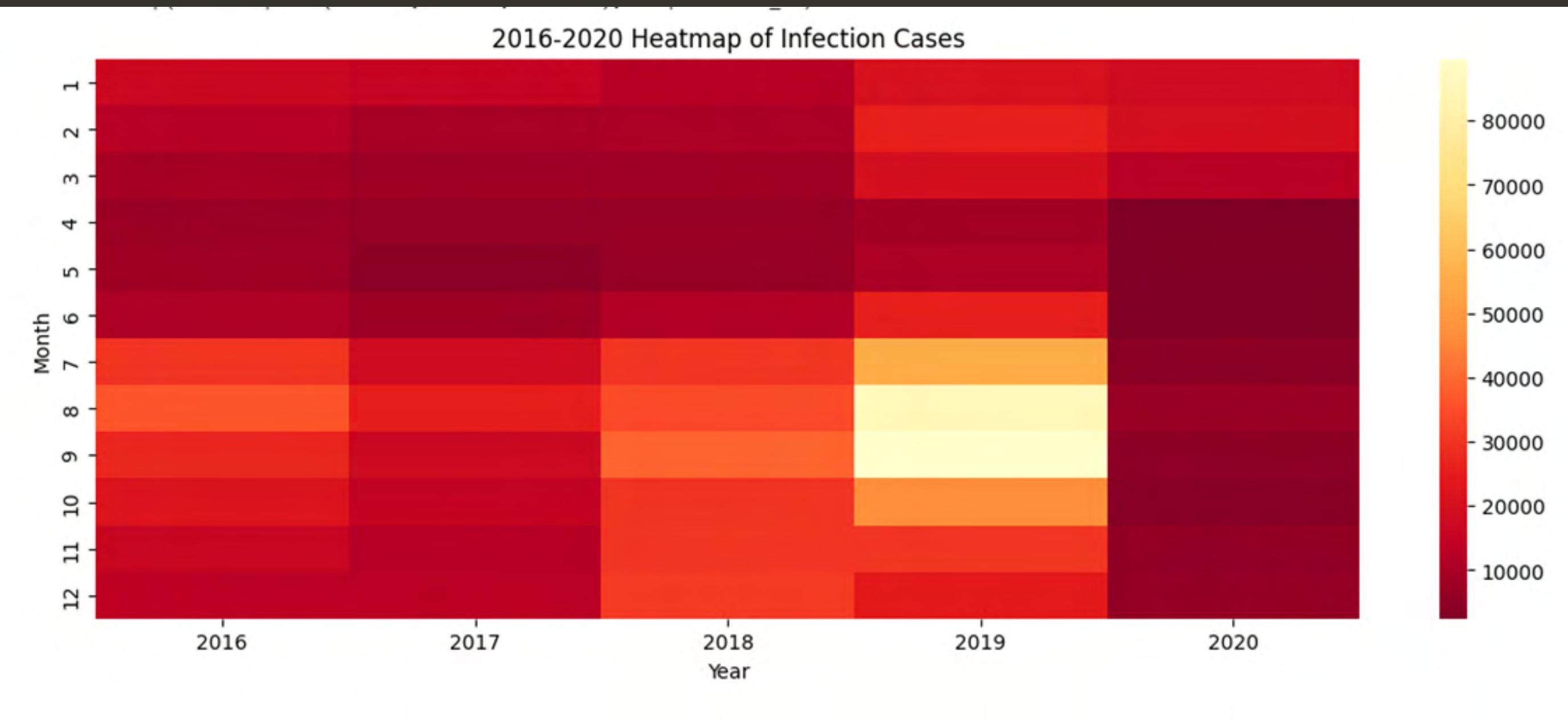
# CHARTS

## Dengue Fever Cases from 2016-2020



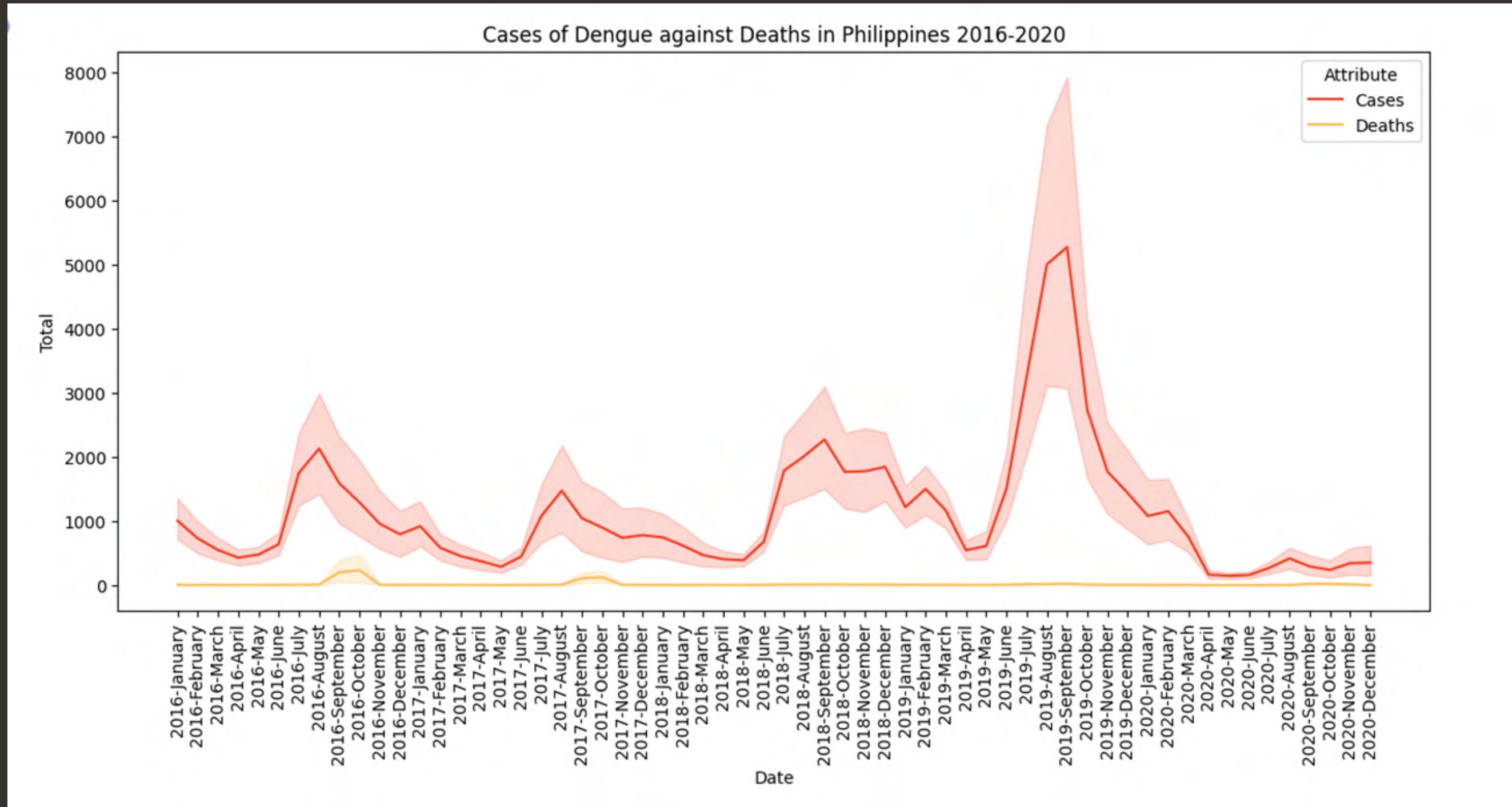
# CHARTS

## 2016-2020 Heatmap of Infection Cases



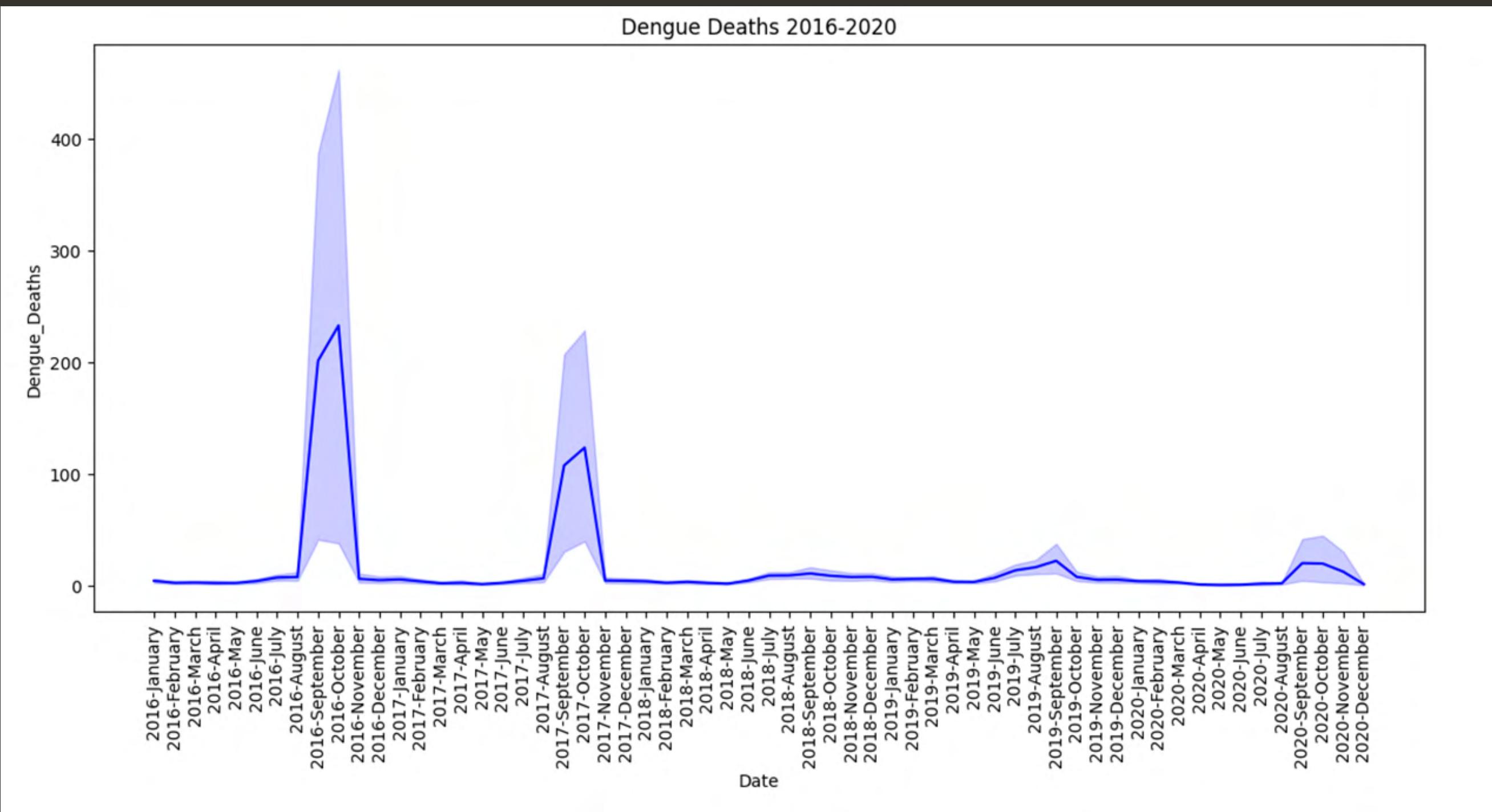
# CHARTS

## Cases of Dengue against Deaths in Philippines 2016-2020



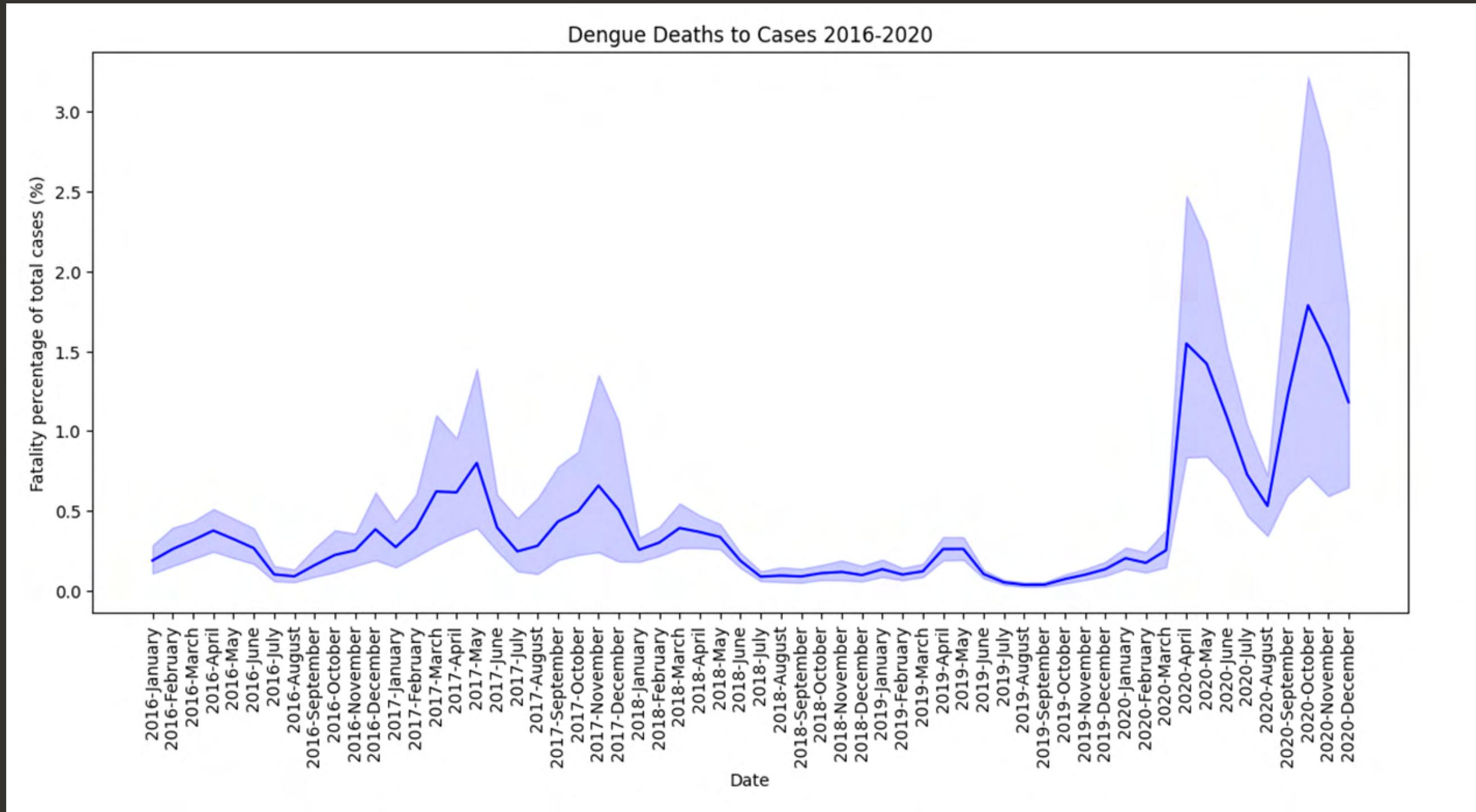
# CHARTS

## Dengue Deaths 2016-2020



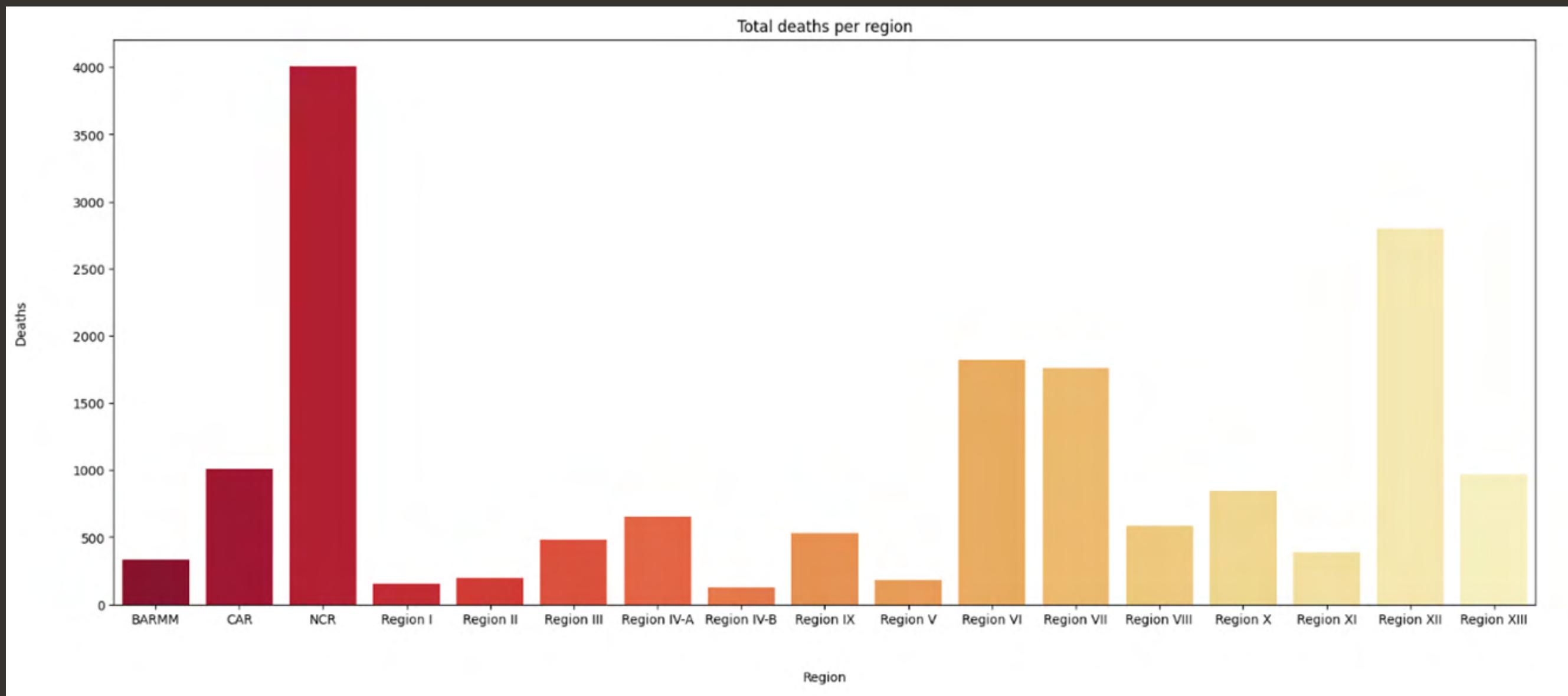
# CHARTS

## Dengue Deaths to Cases 2016-2020



# CHARTS

## Total Deaths per Region due to Dengue



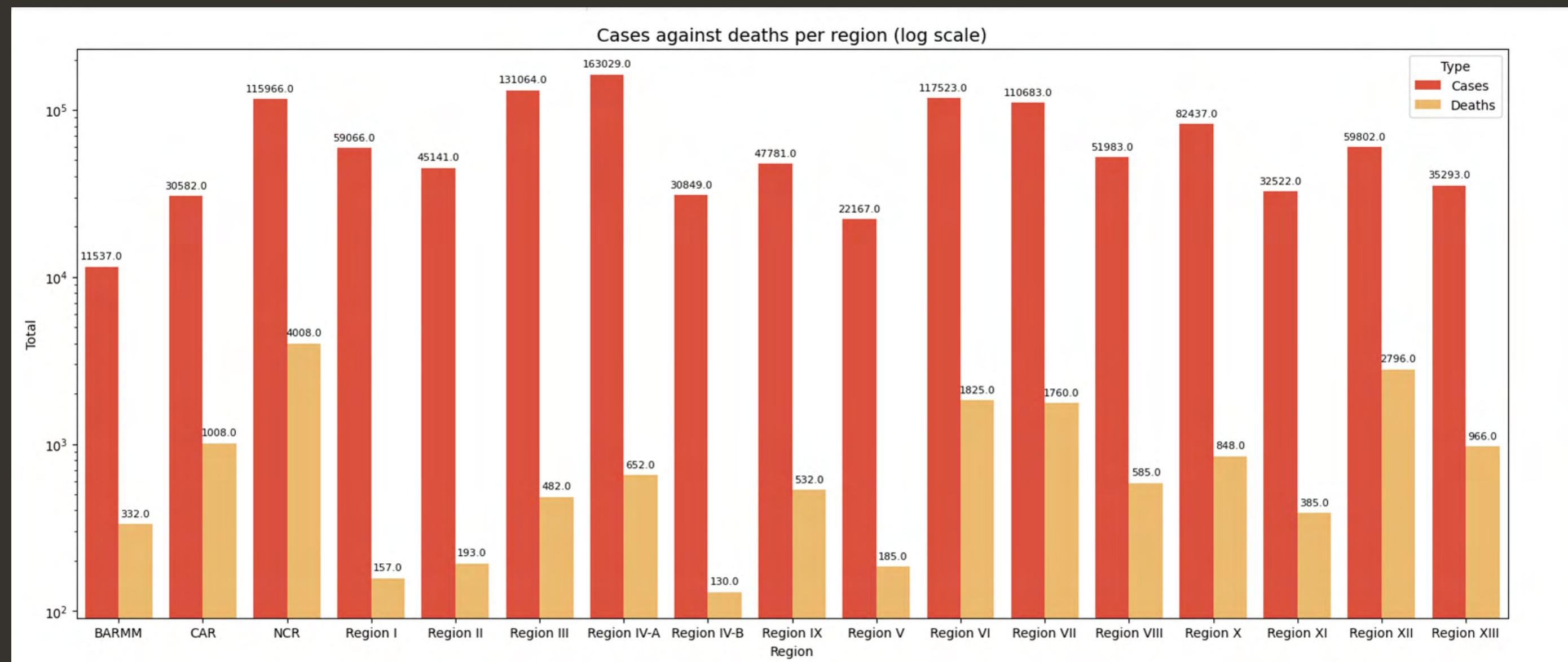
# CHARTS

Correlation  
of Dengue  
Cases and  
Dengue  
Deaths

	Dengue_Cases	Dengue_Deaths
Dengue_Cases	1.000000	0.038322
Dengue_Deaths	0.038322	1.000000

# CHARTS

## Cases against Deaths per Region (log scale)





# REFERENCES

- <https://www.cdc.gov/dengue/about/index.html>
- [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9249805/?fbclid=IwAR1Jq5-PfehUoWZmvDiKih2bHsqDknTovroP4HZfk6j\\_OTVg9dv30qFJRz4#bib0001](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9249805/?fbclid=IwAR1Jq5-PfehUoWZmvDiKih2bHsqDknTovroP4HZfk6j_OTVg9dv30qFJRz4#bib0001)
- <https://www.ncbi.nlm.nih.gov/books/NBK430732/>
- [https://www.who.int/docs/default-source/wpro---documents/emergency/surveillance/dengue/dengue\\_20230413.pdf?sfvrsn=b4a28654\\_61](https://www.who.int/docs/default-source/wpro---documents/emergency/surveillance/dengue/dengue_20230413.pdf?sfvrsn=b4a28654_61)
- <https://manilanews.ph/philippines-dengue-fever-2021-nearly-80k-cases-lower-than-2020/>
- [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9249805/?fbclid=IwAR1Jq5-PfehUoWZmvDiKih2bHsqDknTovroP4HZfk6j\\_OTVg9dv30qFJRz4#bib0001](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9249805/?fbclid=IwAR1Jq5-PfehUoWZmvDiKih2bHsqDknTovroP4HZfk6j_OTVg9dv30qFJRz4#bib0001)
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5392638/>
- <https://www.cdc.gov/mosquitoes/about/where-mosquitoes-live.html>
- <https://www.bartleby.com/essay/Problem-Statement-For-Dengue-Fever-PJ4282WPCU>
- <https://www.kaggle.com/datasets/vincentgupo/dengue-cases-in-the-philippines?resource=download>

# **THANK YOU!**