# DISEASE OUTBREAKS/

Pandemics and Epidemics Around the World

# What are pandemics?

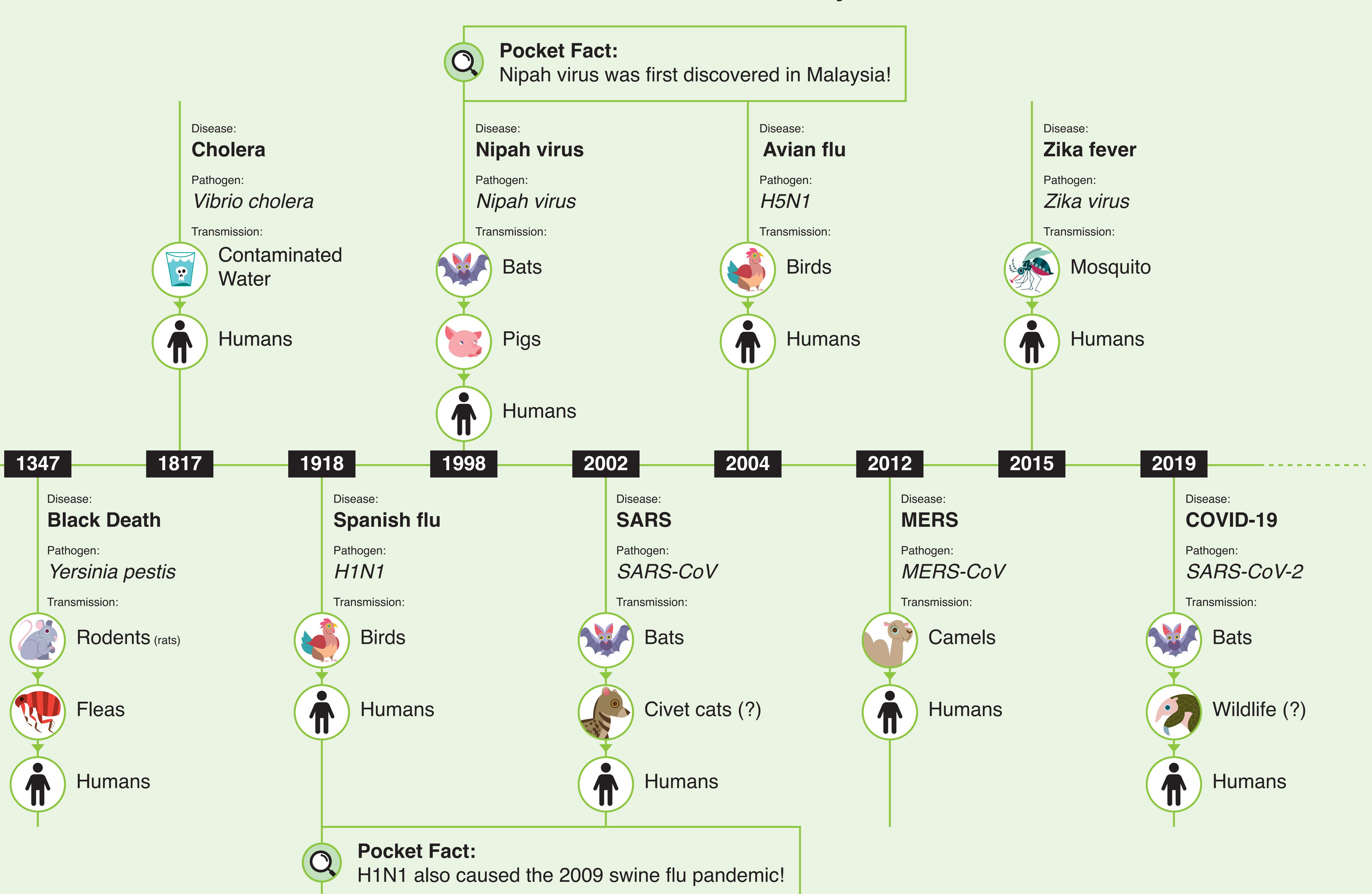
Pandemics are sudden disease outbreaks that spread to a large number of people across multiple countries.



### **Pocket Fact:**

Epidemics are sudden disease outbreaks that spread to a large number of people in a population, usually within a country.

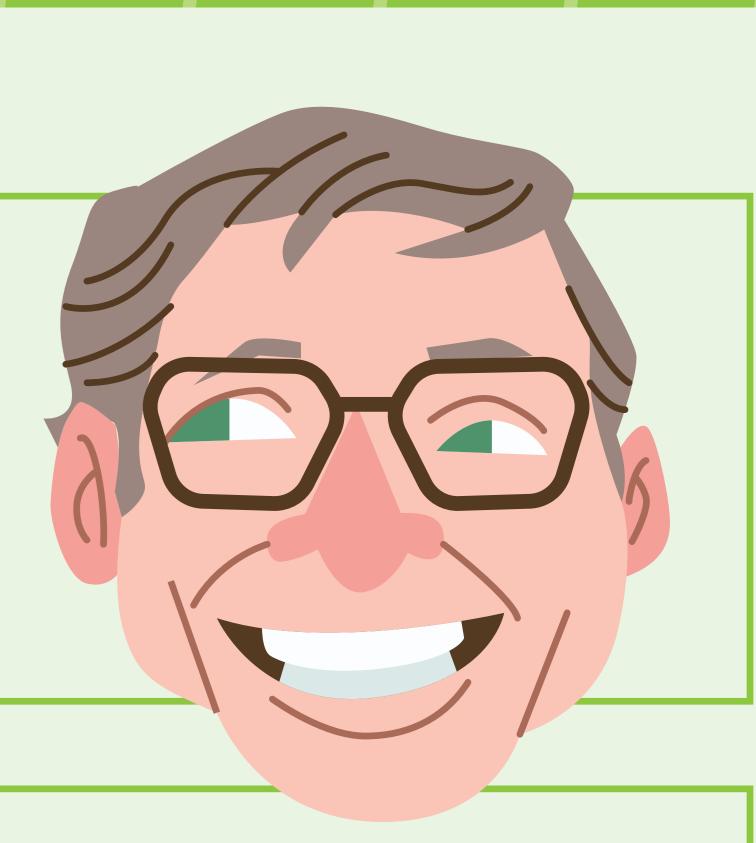
# Disease Outbreaks in History





# Virus Hunter Icon:

Bill Gates heads a global plan to eradicate Malaria using engineered mosquitoes, a method previously used to control mosquito populations carrying Zika virus.





### **Pocket Fact:**

Zoonotic diseases (also known as zoonoses) are diseases transmitted from animals to humans either directly or indirectly through water, food or environment.



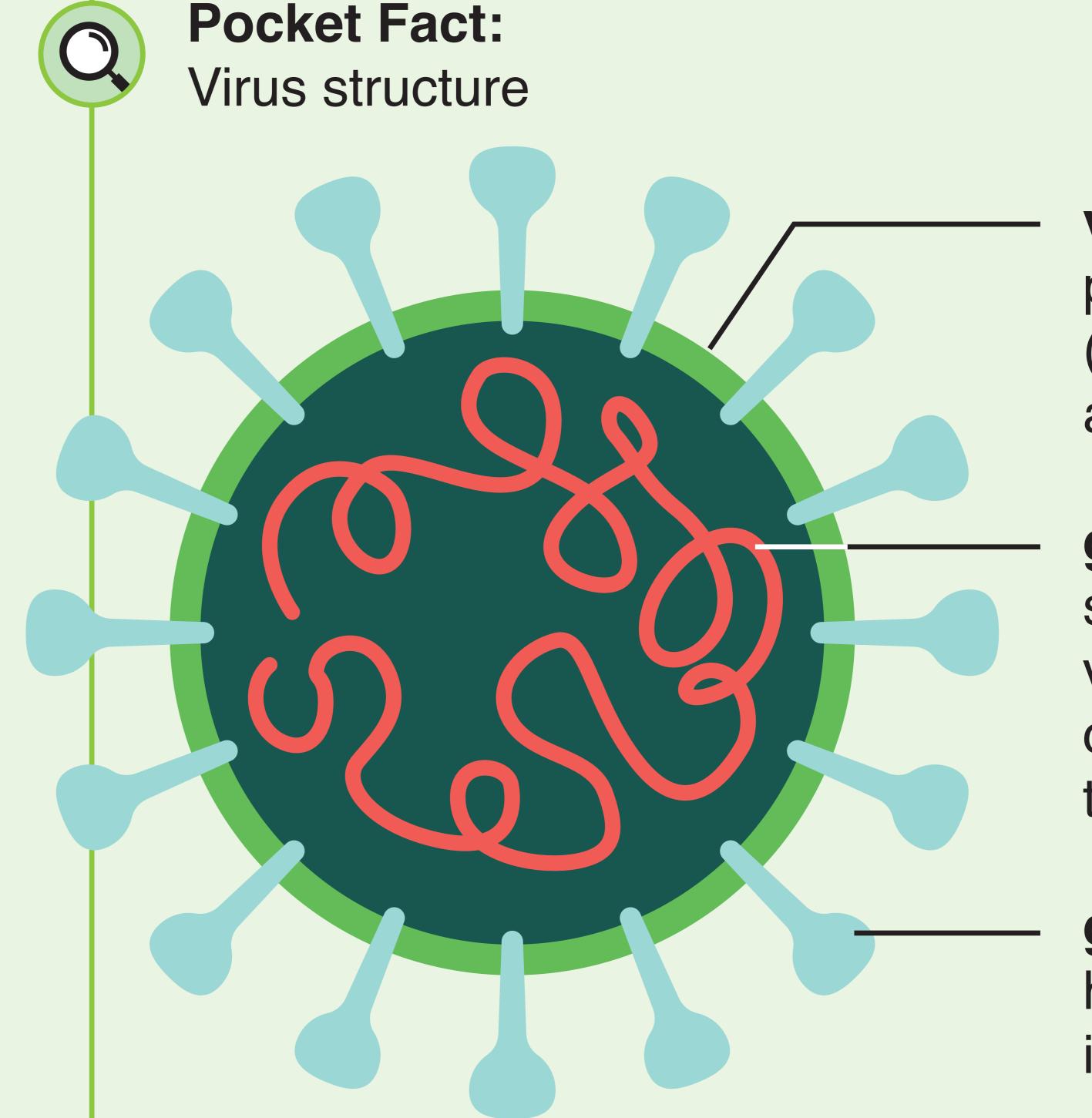
# Try this:

Can you spot the zoonotic diseases in the timeline?



#### **Pocket Fact:**

PREDICT is an early warning pandemic system funded by USAID.



# viral envelope:

protects genetic material (sometimes not present in a virus)

# genetic material:

stores information for the virus to function and construct itself (may be in the form of DNA or RNA!)

# glycoprotein:

helps the virus attach & infect cells



#### What's Next?

Do you notice that zoonoses is more prevalent in recent times? In order to prepare for future outbreaks, we must understand their origin and transmission better!

Let's continue virus hunting!

# OUTBREAKS

# Ebola virus

- First appeared in Nzara and Yambuku in 1976
- Latest outbreak in Democratic Republic of the Congo in 2018 to 2019

# Coronavirus (SARS-CoV-2)

- First appeared in Hunan seafood market in China
- Caused the global pandemic at the end of 2019

#### Host

Bats



Bats are believed to be the key reservoir of the virus

#### **Transmission**



Contact with body fluids of infected individuals; including urine, saliva, sweat, vomit and feces



Contact with objects contaminated with body fluids of infected individuals



Contact with infected animals and individuals



Unprotected sex with infected individuals



Close contact with infected individuals



Through respiratory droplets of infected individuals; including while talking, coughing or sneezing



Contact with objects contaminated with respiratory droplets



Infected individuals with no symptoms can also spread the virus

# Common symptom



Fever



Nausea & vomiting



Headache Haemorrhaging & bleeding



Fever



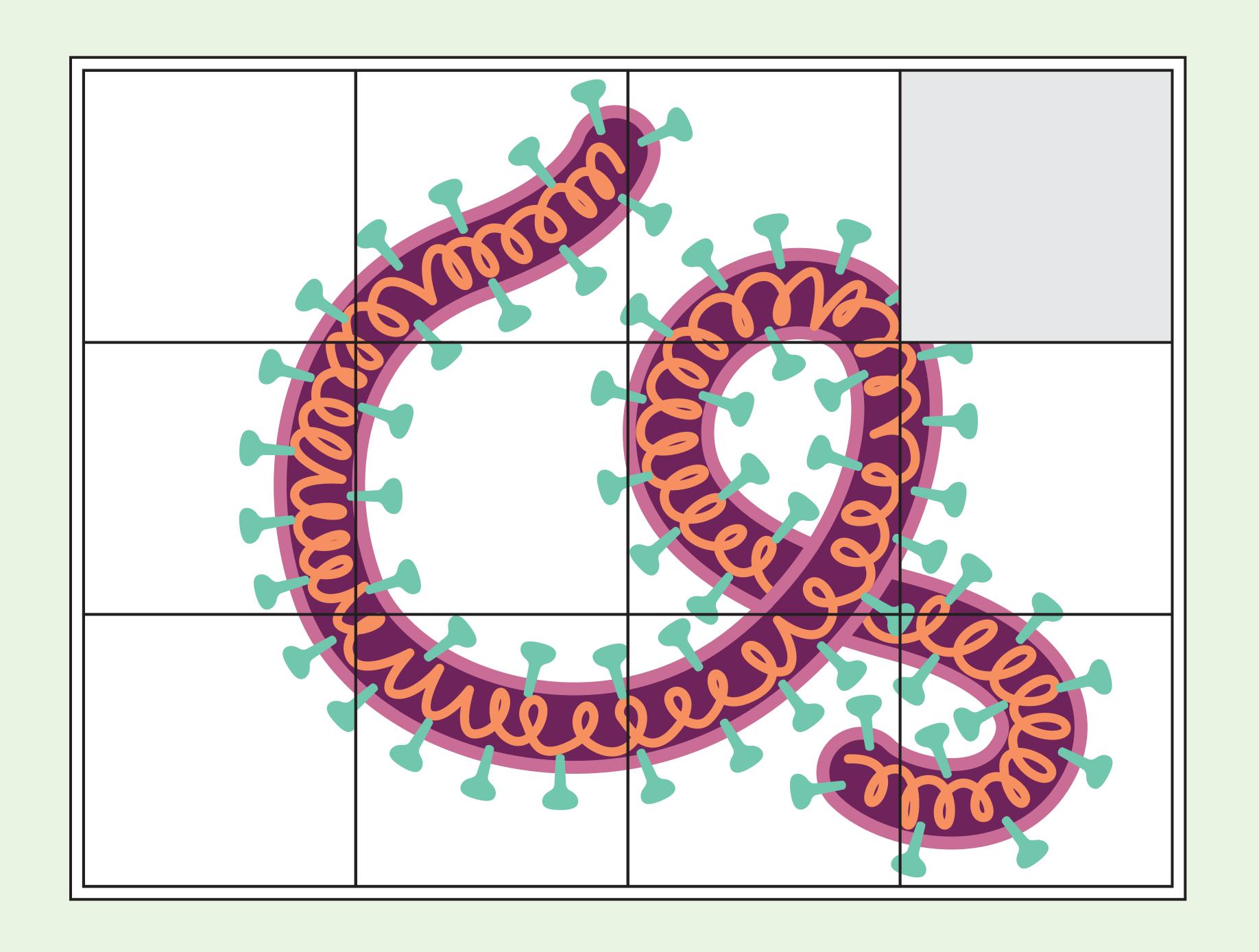
Nausea & vomiting

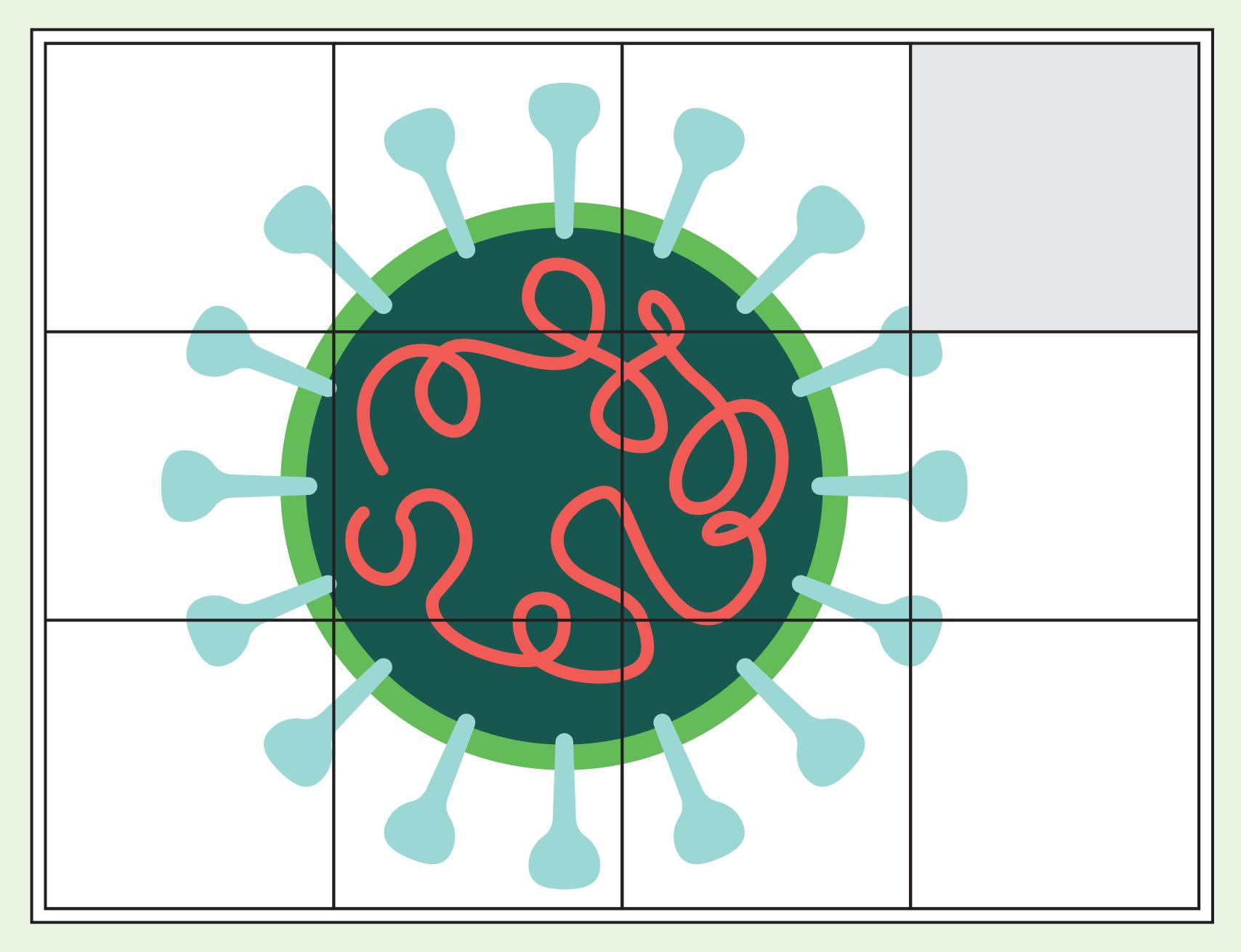


Headache



Breathing difficulties





Ebola virus

Coronavirus