

## **PHASE- 4**

### **Project Title: Public Health Awareness**

#### **Development Part 2**

- Continue building the analysis by creating visualisations using IBM Cognos and integrating code for data analysis.
- Design dashboards and reports in IBM Cognos to visualise campaign reach, awareness levels, and impact metrics.
- Use code (e.g., Python) to perform advanced data analysis, such as calculating engagement rates, conducting demographic analysis, or running statistical tests.
- I can provide you with a general guideline on how to create visualisations using IBM Cognos and integrate Python code for advanced data analysis. Please note that the specifics will depend on your data, but this should give you a good starting point.

#### **Step 1: Data Preparation**

Before creating dashboards and reports in IBM Cognos, you need to prepare your data. Ensure your data is clean, structured, and relevant to the analysis you want to perform. You might need to merge data from different sources and perform data cleaning tasks if necessary.

#### **Step 2: IBM Cognos Dashboard and Report Design**

IBM Cognos provides a user-friendly interface for designing dashboards and reports. Here's a high-level overview of how to design your dashboards and reports:

1. **Data Source Connection:** Connect Cognos to your data source.
2. **Data Modeling:** Create data models, define relationships, and prepare data for reporting. This might involve creating data packages, queries, and calculations.
3. **Report Creation:** Build individual reports to represent your campaign metrics. You can use various chart types, tables, and visualisations to display the data.
4. **Dashboard Creation:** Combine individual reports into a dashboard. This allows you to present multiple visualisations on a single page.
5. **Filters and Parameters:** Implement filters and parameters to allow users to interact with the dashboard and reports. For example, you can add date filters to select a specific time frame for the analysis.
6. **Layout and Formatting:** Customise the layout, fonts, and colours to make the dashboard visually appealing and easy to understand.
7. **Scheduling and Distribution:** Set up automated report scheduling and distribution to relevant stakeholders.

## Step 3: Code Integration for Advanced Data Analysis

If you need to perform advanced data analysis that cannot be accomplished within IBM Cognos, you can integrate Python (or other programming languages) using various methods. Here's a simplified example using Python for calculating engagement rates

1. **Install Required Libraries:** Make sure you have Python installed with the necessary libraries (e.g., pandas, numpy) for data analysis.

2. **Export Data:** Export the relevant data from IBM Cognos into a format that Python can work with, such as a CSV file.
3. **Python Scripting:** Write Python code to perform your analysis. For calculating engagement rates, you might calculate the ratio of interactions (e.g., likes, comments) to the number of impressions or reach.

## CODE in PYTHON:

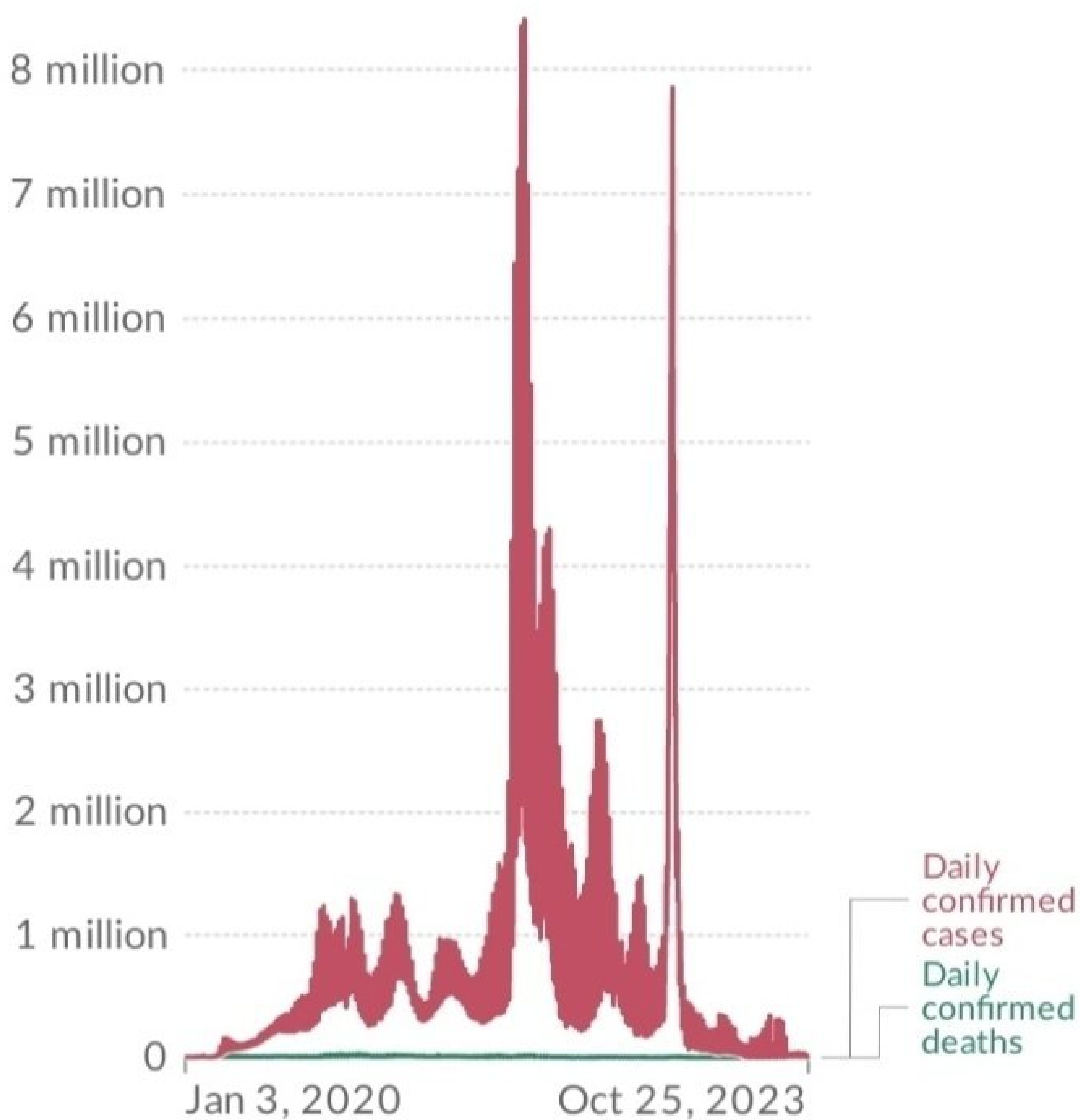
```
import pandas as pd
# Load the data
data = pd.read_csv('survey.csv')

# Calculate engagement rate
data['engagement_rate'] = (data['interactions'] /
data['reach']) * 100
```

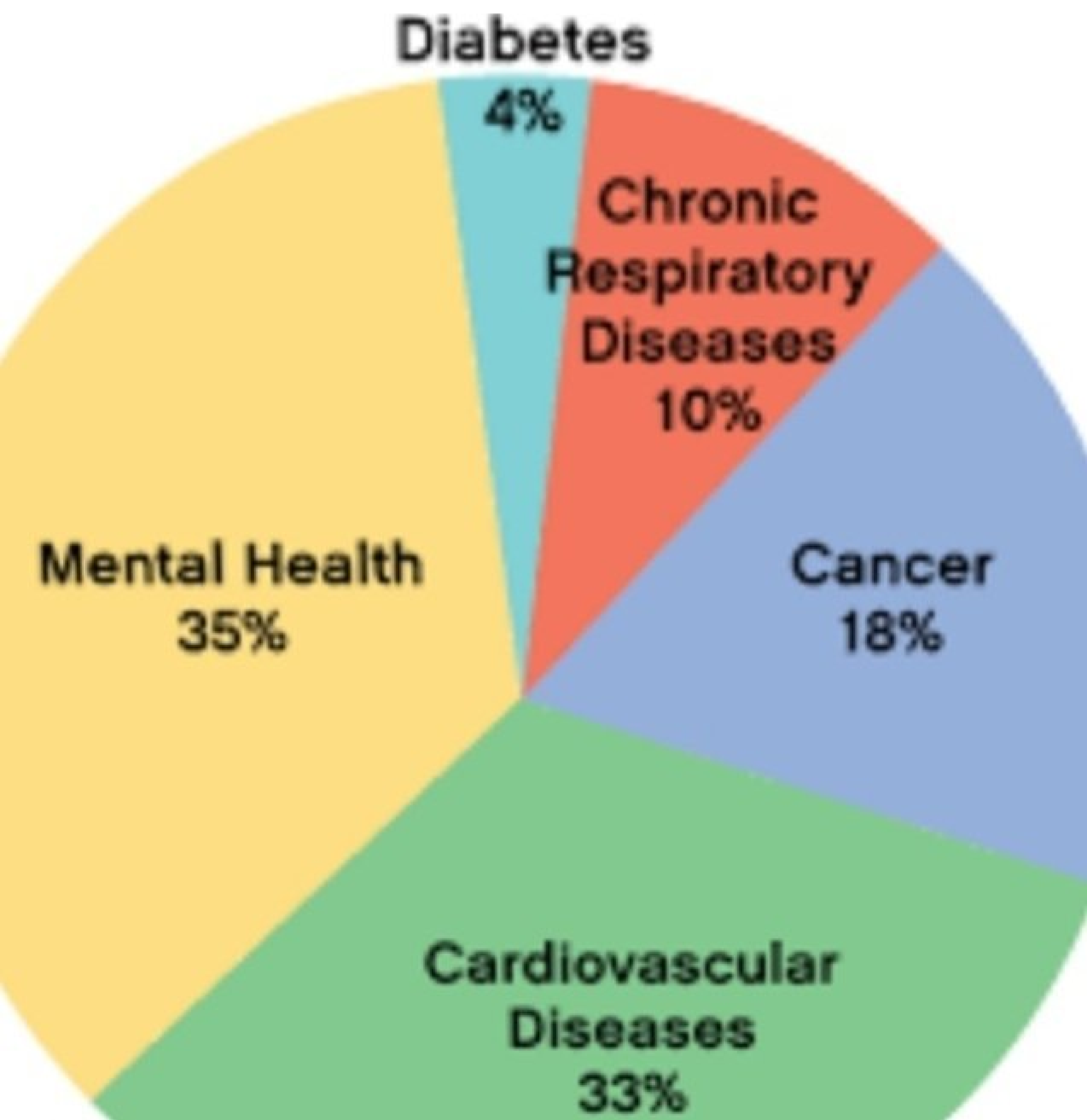
1. **Visualisation:** You can create additional visualisations using Python libraries like Matplotlib or Seaborn. For example, you can create a bar chart to display engagement rates over time.
2. **Integration:** Embed the Python-generated visualisations and analysis results within your IBM Cognos dashboard or reports. This can be done by exporting Python plots as images and inserting them into your Cognos content.
3. **Automation:** If your analysis needs to be updated regularly, consider automating the Python analysis and data integration process.

## CODE FOR PYTHON :

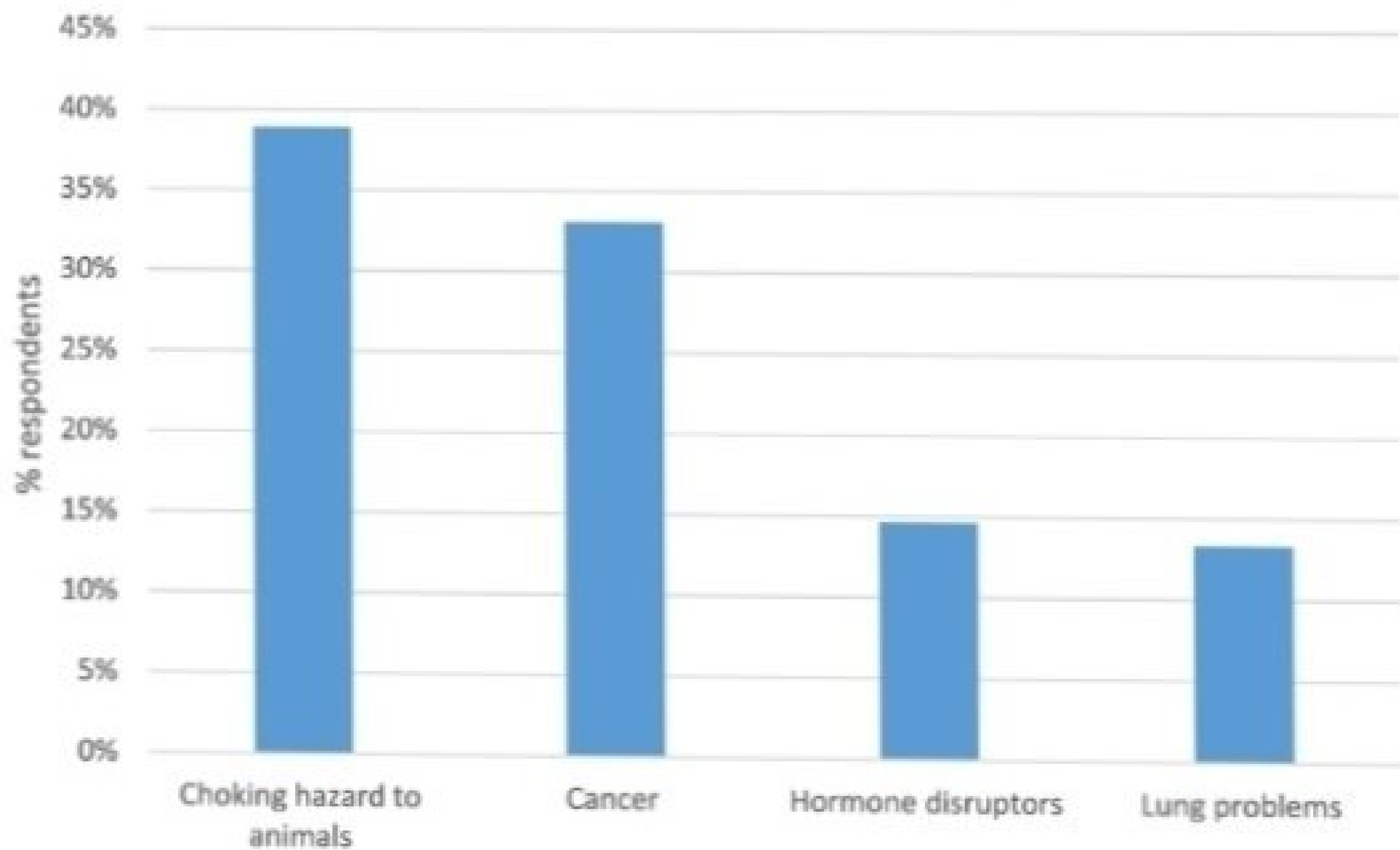
```
    Def vaccination_coverage(population, vaccinated):  
    Coverage = (vaccinated / population) * 100  
    Return coverage  
  
# Input the population and number of people vaccinated  
Population = int(input("Enter the total population: "))  
Vaccinated = int(input("Enter the number of vaccinated people: "))  
  
# Calculate vaccination coverage  
Coverage = vaccination_coverage(population, vaccinated)  
  
# Display the results  
Print(vaccination Coverage: {coverage:.2f}%)  
If coverage >= 70:  
    Print("Good vaccination coverage. Keep it up!")  
Else:  
    Print("Vaccination coverage is below the recommended level. Encourage vaccination!")  
  
# Provide information about vaccinations  
Print("Vaccinations are crucial for preventing the spread of diseases and protecting public health.")  
Print("Make sure to stay informed and get vaccinated to help keep the community safe.")
```







## Public Awareness of health effects of plastics



Remember to tailor these steps to your specific data and analysis requirements.

IBM Cognos offers flexibility in terms of data visualisation and reporting, and Python provides extensive capabilities for in-depth data analysis.