**COS30045 data visualization**

Chronic Diseases and Risk Factors

Process Book

Mohamed Usaidh Abdul Razzaq – 105017157

# Introduction

The motivation for this project stems from the need to provide meaningful insights into the growing burden of chronic diseases and the associated risk factors globally. As chronic diseases such as asthma, diabetes, and cardiovascular conditions continue to affect populations, visualizing their prevalence helps in understanding the distribution and the factors contributing to these health issues.

The primary purpose of this visualization is to provide an interactive platform where users can explore data related to the hospital admissions due to chronic diseases across different countries. This allows policymakers, healthcare professionals, and the public to better understand global health trends and make informed decisions.

**Key Questions the Visualization Will Answer:**

* What are the hospitalization rates for chronic diseases in different countries?
* How do asthma, diabetes, heart failure, and hypertension affect populations differently?
* What geographical regions show higher burdens of chronic diseases?
* How can this data inform public health interventions?

# Data

**Data Sources**  
The data used in this visualization project is sourced from the **OECD Health Statistics Database**, which provides comprehensive statistics on hospital admissions related to chronic diseases such as asthma, diabetes, heart failure, and hypertension. Supplementary datasets are used to validate trends and enhance the comprehensiveness of the analysis.

**Data Processing**  
The datasets were filtered to include data from the year 2020. Key variables include country ISO codes, disease categories, and hospital admission rates per 100,000 inhabitants. Data transformation steps involved cleaning the datasets to remove missing values and standardizing the country codes to match those in the GeoJSON file used for the map visualization.

**Data Types and Encoding**  
The dataset includes quantitative values for hospital admissions, which are encoded using a sequential colour scale (blues), representing different ranges of admissions per 100,000 inhabitants. Each country on the map is coloured according to its corresponding hospitalization rate.

# Visualization Designs

**Design Process**  
The design started with low-fidelity sketches to outline the interactive map layout. The initial prototypes focused on creating a clear and informative interface where users could select different diseases using buttons, and the map would update dynamically to reflect the data for the chosen disease.

**Prototyping and Iteration**  
Several iterations were done to refine the colour scheme and the interactivity of the map. Early versions of the design used too many colours, leading to visual clutter. Feedback from peers suggested reducing the colour gradient to fewer, clearer categories. The design was iterated to focus on a simplified colour legend, making the visualization more intuitive.

**Design Guidelines**  
Key design principles, such as **clarity, simplicity, and accessibility**, were followed throughout the project. The visualization uses clear colour contrasts to represent different data ranges, and the interface provides tooltips for additional information on hover, making the data easy to explore.

# Website

# Reflection

# References

[https://data-explorer.oecd.org/vis?tm=Diabetes%20&pg=0&snb=21&df[ds]=dsDisseminateFinalDMZ&df[id]=DSD\_HCQO%40DF\_HCQO&df[ag]=OECD.ELS.HD&df[vs]=1.0&dq=.A.CCLUNTSR%2BCC...\_T.OBS%2BVALUEW&pd=2000%2C2020&to[TIME\_PERIOD]=false&vw=tb](https://data-explorer.oecd.org/vis?tm=Diabetes%20&pg=0&snb=21&df%5bds%5d=dsDisseminateFinalDMZ&df%5bid%5d=DSD_HCQO%40DF_HCQO&df%5bag%5d=OECD.ELS.HD&df%5bvs%5d=1.0&dq=.A.CCLUNTSR%2BCC..._T.OBS%2BVALUEW&pd=2000%2C2020&to%5bTIME_PERIOD%5d=false&vw=tb)

[https://data-explorer.oecd.org/vis?tm=Cancer%20rate&pg=0&snb=4&df[ds]=dsDisseminateFinalDMZ&df[id]=DSD\_HEALTH\_STAT%40DF\_HEALTH\_STATUS&df[ag]=OECD.ELS.HD&df[vs]=1.0&dq=.A..CS\_10P5PS.........&pd=2000%2C2020&to[TIME\_PERIOD]=false&vw=tb](https://data-explorer.oecd.org/vis?tm=Cancer%20rate&pg=0&snb=4&df%5bds%5d=dsDisseminateFinalDMZ&df%5bid%5d=DSD_HEALTH_STAT%40DF_HEALTH_STATUS&df%5bag%5d=OECD.ELS.HD&df%5bvs%5d=1.0&dq=.A..CS_10P5PS.........&pd=2000%2C2020&to%5bTIME_PERIOD%5d=false&vw=tb)

https://github.com/holtzy/D3-graph-gallery/blob/master/DATA/world.geojson