# Health Expenditure and Suicide Rates

## Team:

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## Description / Outline

This project will use world bank and world health organisation data to investigate health expenditure per capita and suicide rates (per 100,000) across a selection of countries.

Along with descriptive of each dataset, we will run a linear regression (Pearson’s r) to determine the strength of any relationship between health expenditure per capita (IV) and suicide rates (DV). In addition, we will display a heat map showing health expenditure by country and suicide rate.

The data will be matched by country and measurement years, for approximately 10 measurements of years and across 25 to 50 countries. This will be up to and including the most recently reported year that matches both datasets.

## What do we think we will find?

We think that there will be a correlation between how much a country spends on health per capita and its suicide rate. We think that suicide rate is influenced by equity of access to appropriate health services, in particular mental health services, and that health expenditure is an indicator of the likelihood that a country has in place appropriate and accessible health services to meet the needs of its population.

## Dataset sources:

World Bank: <https://www.who.int/data/gho/data/indicators/indicator-details/GHO/suicide-mortality-rate-(per-100-000-population)>

World Health Organisation: <https://www.who.int/data/gho/data/indicators/indicator-details/GHO/suicide-mortality-rate-(per-100-000-population)>

## API source:

Google maps : <https://developers.google.com/maps/documentation>

## Task plan

| **No.** | **What** | **Who** | **When by** | **Dependencies** | **Status** |
| --- | --- | --- | --- | --- | --- |
| 1 | Brainstorm ideas for project and identify data sets | All | Tues 29th Sept | None | Complete |
| 2 | Create repo in GitHub and add team as contributors | Justin | Tues 29th Sept | None | Complete |
| 3 | Write up project proposal draft for review of team and once complete submission to Oscar | Shona  All to review | Thurs 1st Oct | step 1 | On track |
| 4 | Extract world bank health expenditure data |  | Thurs 1st Oct | step 1 |  |
| 5 | Extract world health organisation data |  | Thurs 1st Oct | step 1 |  |
| 6 | Check google maps API documentation for country level mapping endpoint |  | Thurs 1st Oct | None |  |
| 7 | Determine dependencies for coding in jupyter notebook |  | Thurs 1st Oct | step 3 |  |
| 8 | Compare data sets to determine years of alignment |  | Thurs 1st Oct | steps 4 and 5 |  |
| 9 | Merge datasets by year and country name |  | Thurs 1st Oct | step 8 |  |
| 10 | Clean data - remove countries without full range of year data in both variables |  | Thurs 1st Oct | step 9 |  |
| 11 | Run descriptive analysis and check for outliers, plot descriptives |  | Sat 3rd Oct | step 10 |  |
| 12 | Run linear regression and scatter plot |  | Tues 6th Oct | step 10 |  |
| 13 | Get google maps country co-ordinates from API |  | Tues 6th Oct | step 10 |  |
| 14 | Plot google-map heat map with descriptive median Health Expenditure for heat map and median suicide rate to display in country token |  | Tues 6th Oct | steps 6 and 11 |  |
| 15 | Write analysis of findings |  | Thurs 8th Oct | all steps above |  |
| 16 | Present to class |  | Sat 10th Oct | all steps above |  |