# D10 Group Dashboard Project

# Public Health Priorities for Scotland

### D10 group members

Derek Hoodless, John Paul Docherty, Jonathan Parker, Paddy Hudson, Prathiba Ratnasabesan.

### Roles & responsibilities of each member

***Derek*** *worked on Data Cleaning, Data Wrangling, Shiny App*

***John Paul*** *worked on Data Cleaning, Documentation*

***Jonathan*** *worked on Project Managing, Wireframing*

***Paddy*** *worked on Wireframing, Mapping, Shiny App*

***Prathiba*** *worked on Requirements, Data Cleaning & Wrangling, Shiny App*

***Everyone*** *worked on Planning, Data Selection*

### Brief description of dashboard topic

Our dashboard contains an overview of Scottish public health over the past 5-10 years through the lens of life expectancy., long term conditions, self-reported health, or quality of life).

We then took a closer look at the subjects of Drug Use among young people, & Smoking across all age groups. We looked at these topics from 3 perspectives:

* + **Temporal**: How has this issue changed over time? Is it getting better or worse?
  + **Geographic**: Does this issue differ between areas? Where should efforts be focused?
  + **Demographic**: Who is most affected by this issue? Who should be targeted with efforts?

### Stages of the project

* Project Planning
* Data Selection & cleaning
* Design & Dashboard wireframing
* Git branching & version control
* Data Analysis
* Dashboard Build
* Integration of Analysis & Dashboard
* Testing
* Delivery / Presentation

### Which tools were used in the project?

* Zoom (daily stand-ups and occasional mob programming)
* Trello (planning & task allocation)
* Git/GitHub (collaboration & version control)
* Slack for informal communication
* MS Office packages

### How did you gather and synthesise requirements for the project?

We reviewed the project brief, and individually explored the available data sets and finalised on the topics of interests. We split the tasks into MVP to work on the features that were critical to the brief, and Extension to have an extra nice feature if there was available time.

A brief overview on the wireframe proposal and a sample prototype of the dashboard is reviewed at the initial stage to ensure that the team were on the right track.

### Motivations for using the data you have chosen

We used the dataset on Life Expectancy as it gives the ultimate overview on Public Health. Beneath that we looked at Drug Use in Young People and Smoking as these have a direct impact on Life Expectancy and not only the duration of life, but the quality of those lives.

### Data quality and potential bias, including a summary of data cleaning and transformations

According to the Trend tab for the Life Expectancy data in the dashboard, the data quality is set to a 95% confidence interval, which account for the varying designs of constituent surveys. Confidence intervals provide a measure of the accuracy of point estimates.

The dataset may not be biased because it comes from an innovative project drawing together multiple household surveys to provide a large sample for subnational analysis.

To clean the datasets, we used Data Zone Lookup Code to map the corresponding geographical locations and zones. For Life expectancy, the age is restricted from birth and the overlapping year ranges were removed.

### How is the data on statistics.gov.scot stored and structured?

The data on statistics.gov.scot is in the form of Linked Data.

This means that the structure of the database is contained within the data.

Benefits of storing the data like this are there is no need for complex database schema.

### Ethical and legal considerations of the data

There are no ethical considerations because the data is depersonalised, publicly available data from the Scottish Government

The datasets are covered by the Open Government License v3.0, which means we can use the Information that is available under this licence freely & flexibly, with only a few conditions. Further details can be found at [Open Government Licence (nationalarchives.gov.uk)](http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/)

Addendum

Indicators, Data Sources and Methods

Life Expectancy

<https://statistics.gov.scot/resource?uri=http%3A%2F%2Fstatistics.gov.scot%2Fdata%2FLife-Expectancy>

Life expectancy refers to the number of years that a person could expect to survive if the current mortality rates for each age group, sex and geographic area remain constant throughout their life. This is referred to as ‘period life expectancy’ and does not usually reflect the actual number of years that a person will survive. This is because it does not take into account changes in health care and other social factors that may occur through someone’s lifetime. However, life expectancy is a useful statistic as it provides a snapshot of the health of a population and allows the identification of inequalities between populations.

The data published by the Scottish Government contains information on life expectancy, at birth and for age groups.

• **Age** - From birth and in age groups of 4 years until 90 years.

**• Measure Type** - Percent, 95% lower confidence limit percent, 95% upper confidence limit percent.

**• Reference Period** - 1991-1993 to 2017-2019.

**• Sex** - Female and male.

• **SIMD Quantiles** - All, 1 (most deprived) to 5 (least deprived)

• **Urban Rural Classification** - All, accessible rural, accessible small towns, large urban areas, other urban areas, remote rural and remote small towns.

• **Reference Areas** - Country, council areas, Scottish parliamentary constituencies and health board areas.

Scottish Drugs Misuse Database

<https://www.opendata.nhs.scot/dataset/scottish-drug-misuse-database>

Harm from the use of alcohol and drugs is a major public health problem in Scotland. Such harm, from both ill health and early death, is disproportionately experienced by the most vulnerable in our communities. Access to timely, compassionate, person centred services saves lives.

The data published by Public Health Scotland contains information on the number of individuals presenting for assessment at specialist drug treatment services in Scotland at health board level, broken down by age and sex.

• **FinancialYear** - Data is for financial years (1st April to 31st March).

• **CA** - 9-digit code for the council area of residence, based on the boundaries as at the time of the event.

• **CAQF** - Qualifier for CA.

• **AgeGroup** - The age group of the patient in 5-year age brackets. Also includes people of unknown age.

• **AgeGroupQF** - Qualifier for AgeGroup.

• **Sex** - The sex of the patient.

• **SexQF** - Qualifier for sex.

• **NumberAssessed** - The number of individuals being assessed for treatment.

• **NumberAssessedQF** - Qualifier for NumberAssessed.

• **PercentAssessed** - The percentage of people in age and sex categories. The denominator is the number of individuals assessed for treatment with location.

• **PercentAssessedQF** - Qualifier for PercentAssessed.

Smoking - Scottish Survey Core Questions

<https://statistics.gov.scot/resource?uri=http%3A%2F%2Fstatistics.gov.scot%2Fdata%2Fsmoking-sscq>

Two of the Scottish Government's National Performance Framework (NPF) National Indicators are relevant to smoking. There is a specific indicator on reducing the proportion of adults who are current smokers, as well as a more general indicator on reducing premature mortality (deaths from all causes in those aged under 75), for which smoking is a significant contributory factor.

The data published by the Scottish Government contains information on current smokers by current smokers by tenure, household type, age, sex and disability.

• **Age** - All, 16-34 years, 35-64 years, 16-64 years and 65 years and over.

• **Currently Smokes Cigarettes** - Yes or No.

• **Gender** - All, female and male.

• **Household Type** - All, adults, pensioners and with children.

• **Limiting Long Term Physical or Mental Health Condition** - All, limiting condition and no limiting condition.

• **Measure Type** - Percent, 95% lower confidence limit percent, 95% upper confidence limit percent.

• **Reference Period** - 2012-2013 to 2019.

• **Type of Tenure** - All, owned mortgage/loan, owned outright and rented.

• **Reference Area** - Country, council areas, Scottish parliamentary constituencies, health board areas, electoral wards and Westminster parliamentary constituencies.