

DATA608: Module 3

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```
library(tidyverse)
library(plotly)
library(shiny)
library(rsconnect)
```

Module 3

I have provided you with data about mortality from all 50 states and the District of Columbia. Please access it at https://github.com/charleyferrari/CUNY_DATA608/tree/master/module3/data. You are invited to gather more data from our provider, the CDC WONDER system, at <https://wonder.cdc.gov/ucd-icd10.html>.

Load Data

Load data from the course github.

```
data <- read.csv("https://raw.githubusercontent.com/charleyferrari/CUNY_DATA_608/master/module3/data/cl")
```

```
summary(data)
```

```
## ICD.Chapter      State      Year      Deaths
## Length:9961      Length:9961      Min.   :1999      Min.    :  10
## Class :character  Class :character  1st Qu.:2002      1st Qu.: 177
## Mode  :character  Mode  :character  Median :2005      Median : 667
##                                     Mean  :2005      Mean  : 2929
##                                     3rd Qu.:2008      3rd Qu.: 2474
##                                     Max.   :2010      Max.   :96511
##
## Population      Crude.Rate
## Min.   : 491780      Min.    : 0.00
## 1st Qu.: 1728292      1st Qu.: 4.60
## Median : 4219239      Median : 24.00
## Mean   : 5937896      Mean   : 52.15
## 3rd Qu.: 6562231      3rd Qu.: 50.50
## Max.   :37253956      Max.    :478.40
```

```
data %>% count(ICD.Chapter)
```

```
##
## 1          Certain conditions originating in the perinatal period
```

```

## 2          Certain infectious and parasitic diseases
## 3          Codes for special purposes
## 4          Congenital malformations, deformations and chromosomal abnormalities
## 5 Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism
## 6          Diseases of the circulatory system
## 7          Diseases of the digestive system
## 8          Diseases of the ear and mastoid process
## 9          Diseases of the genitourinary system
## 10         Diseases of the musculoskeletal system and connective tissue
## 11         Diseases of the nervous system
## 12         Diseases of the respiratory system
## 13         Diseases of the skin and subcutaneous tissue
## 14         Endocrine, nutritional and metabolic diseases
## 15         External causes of morbidity and mortality
## 16         Mental and behavioural disorders
## 17         Neoplasms
## 18         Pregnancy, childbirth and the puerperium
## 19 Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified
##      n
## 1  612
## 2  612
## 3   10
## 4  612
## 5  606
## 6  612
## 7  612
## 8    8
## 9  612
## 10 612
## 11 612
## 12 612
## 13 552
## 14 612
## 15 612
## 16 612
## 17 612
## 18 217
## 19 612

```

Question 1

As a researcher, you frequently compare mortality rates from particular causes across different States. You need a visualization that will let you see (for 2010 only) the crude mortality rate, across all States, from one cause (for example, Neoplasms, which are effectively cancers). Create a visualization that allows you to rank States by crude mortality for each cause of death.

Question 2

Often you are asked whether particular States are improving their mortality rates (per cause) faster than, or slower than, the national average. Create a visualization that lets your clients see this for themselves for one cause of death at the time. Keep in mind that the national average should be weighted by the national population.