

Package ‘NHSRdatasets’

September 27, 2019

Type Package

Title NHS and Healthcare Related Data for Education and Training

Version 0.1.2

Maintainer Chris Mainey <chris.mainey@uhb.nhs.uk>

Description Free United Kingdom National Health Service (NHS) and other healthcare, or population health-related data for education and training purposes. This package currently contains a single simulated hospital dataset for teaching regression methods, with the addition of more datasets planned for future releases. This package exists to support skills development in the NHS-R community: <<https://nhsrcommunity.com/>>.

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Encoding UTF-8

LazyData true

RoxygenNote 6.1.1

Depends R (>= 3.5.0)

BugReports <https://github.com/nhs-r-community/NHSRdatasets/issues>

Suggests dplyr, ggplot2, lme4, MASS, ModelMetrics, lmttest, rmarkdown, scales, ggrepel, lubridate, tidyr, forcats, knitr

VignetteBuilder knitr

NeedsCompilation no

Author Chris Mainey [aut, cre] (<<https://orcid.org/0000-0002-3018-6171>>),
Tom Jemmett [aut] (<<https://orcid.org/0000-0002-6943-2990>>),
NHS-R community [cph]

Repository CRAN

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ae_attendances

NHS England Accident & Emergency Attendances and Admissions

Description

Reported attendances, 4 hour breaches and admissions for all A&E departments in England for the years 2016/17 through 2018/19 (Apr-Mar). The data has been tidied to be easily usable within the tidyverse of packages.

Usage

```
data(ae_attendances)
```

Format

Tibble with six columns

period The month that this data relates to

org_code The **ODS** code for this provider

type The **department type**. either 1, 2 or other

attendances the number of patients who attended this department in this month

breaches the number of patients who breaches the 4 hour target in this month

admissions the number of patients admitted from A&E to the hospital in this month

Details

Data sourced from [NHS England Statistical Work Areas](#) which is available under the [Open Government Licence v3.0](#)

Source

[NHS England Statistical Work Areas](#)

Examples

```
data(ae_attendances)
library(dplyr)
library(ggplot2)
library(scales)

# Create a plot of the performance for England over time
ae_attendances %>%
  group_by(period) %>%
  summarise_at(vars(attendances, breaches), sum) %>%
  mutate(performance = 1 - breaches / attendances) %>%
  ggplot(aes(period, performance)) +
  geom_hline(yintercept = 0.95, linetype = "dashed") +
```

```

geom_line() +
geom_point() +
scale_y_continuous(labels = percent) +
labs(title = "4 Hour performance over time")

# Now produce a plot showing the performance of each trust
ae_attendances %>%
  group_by(org_code) %>%
  # select organisations that have a type 1 department
  filter(any(type == "1")) %>%
  summarise_at(vars(attendances, breaches), sum) %>%
  arrange(desc(attendances)) %>%
  mutate(performance = 1 - breaches / attendances,
         overall_performance = 1 - sum(breaches) / sum(attendances),
         rank = rank(-performance, ties.method = "first") / n()) %>%
  ggplot(aes(rank, performance)) +
  geom_vline(xintercept = c(0.25, 0.5, 0.75), linetype = "dotted") +
  geom_hline(yintercept = 0.95, colour = "red") +
  geom_hline(aes(yintercept = overall_performance), linetype = "dotted") +
  geom_point() +
  scale_y_continuous(labels = percent) +
  theme_minimal() +
  theme(panel.grid = element_blank(),
        axis.text.x = element_blank()) +
  labs(title = "4 Hour performance by trust",
       subtitle = "Apr-16 through Mar-19",
       x = "", y = "")

```

LOS_model

Hospital Length of Stay (LOS) Data

Description

Artificially generated hospital data. Fictional patients at 10 fictional hospitals, with LOS, Age and Date status data Data were generate to learn Generalized Linear Models (GLM) concepts, modelling either Death or LOS.

Usage

```
data(LOS_model)
```

Format

Data frame with five columns

ID A fictional patient ID number

Organisation A factor representing one of ten fictional hospital trusts, e.g. Trust1

Age Age in years of each fictional patient

LOS In-hospital length of stay in days. The difference between admission and discharge date in dates

Death Binary for death status: 0 = survived, 1= died in hospital

Source

Generated by Chris Mainey <chris.mainey@uhb.nhs.uk>, Feb-2019

Examples

```
data(LOS_model)

model1 <- glm(Death ~ Age + LOS, data=LOS_model, family="binomial")
summary(model1)

# Now with an Age, LOS, and Age*LOS interaction.
model2<- glm(Death ~ Age * LOS, data=LOS_model, family="binomial")
summary(model2)
```

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