Package 'forestly'

July 19, 2023

Title Interactive Forest Plot

Version 0.1.0

Description Interactive forest plot for clinical trial safety analysis using 'metalite', 'reactable', 'plotly', and Analysis Data Model (ADaM) datasets. Includes functionality for adverse event filtering, incidence-based group filtering, hover-over reveals, and search and sort operations. The workflow allows for metadata construction, data preparation, output formatting, and interactive plot generation.

License GPL (>= 3)

Encoding UTF-8

LazyData true

Depends R (>= 4.1)

Imports brew, crosstalk, glue, htmltools, metalite, metalite.ae, reactable, reactR, rlang

Suggests covr, dplyr, knitr, r2rtf, rmarkdown, testthat (>= 3.0.0)

VignetteBuilder knitr

Config/testthat/edition 3

RoxygenNote 7.2.3

NeedsCompilation no

Author Yilong Zhang [aut],
Benjamin Wang [aut, cre],
Yujie Zhao [aut],
Nan Xiao [ctb],
Xuan Deng [ctb],
Merck Sharp & Dohme Corp [cph]

Maintainer Benjamin Wang <benjamin.wang@merck.com>

Repository CRAN

Date/Publication 2023-07-19 11:10:08 UTC

R topics documented:

ae_forestly 2
forestly_adae 3
forestly_adae_3grp 3
forestly_adsl 4
forestly_adsl_3grp 4
format_ae_forestly 5
meta_forestly 6
prepare_ae_forestly 7

Index **9**

`ae_forestly` *Display interactive forest plot*

Description

Display interactive forest plot

Usage

```
ae_forestly(outdata, filter = c("prop", "n"), width = 1400)
```

Arguments

`outdata`	An `outdata` object created by `format_ae_forestly()`.
`filter`	A character value of the filter variable.
`width`	A numeric value of width of the table in pixels.

Value

An AE forest plot saved as a `shiny.tag.list` object.

Examples

```
adsl <- forestly_adsl[1:100, ]
adae <- forestly_adae[1:100, ]
if (interactive()) {
  meta_forestly(
    dataset_adsl = adsl,
    dataset_adae = adae,
    population_term = "apat",
    observation_term = "wk12"
  ) |>
    prepare_ae_forestly(parameter = "any;rel") |>
    format_ae_forestly() |>
    ae_forestly()
}
```

forestly_adae *An adverse event dataset*

Description

A dataset containing the adverse event information of a clinical trial following the CDISC ADaM standard.

Usage

```
forestly_adae
```

Format

A data frame with 736 rows and 56 variables.

Details

Definition of each variable can be found at https://github.com/phuse-org/phuse-scripts/tree/master/data/adam/cdisc.

Source

https://github.com/phuse-org/phuse-scripts/tree/master/data/adam/cdisc

forestly_adae_3grp *An adverse event dataset*

Description

A dataset containing the adverse event information of a clinical trial following the CDISC ADaM standard.

Usage

```
forestly_adae_3grp
```

Format

A data frame with 1191 rows and 56 variables.

Details

Definition of each variable can be found at https://github.com/phuse-org/phuse-scripts/tree/master/data/adam/cdisc.

Source

https://github.com/phuse-org/phuse-scripts/tree/master/data/adam/cdisc

---

forestly_adsl *A subject level demographic dataset*

Description

A dataset containing the demographic information of a clinical trial following the CDISC ADaM standard.

Usage

```
forestly_adsl
```

Format

A data frame with 170 rows and 49 variables.

Details

Definition of each variable can be found at https://github.com/phuse-org/phuse-scripts/tree/master/data/adam/cdisc.

Source

https://github.com/phuse-org/phuse-scripts/tree/master/data/adam/cdisc

---

forestly_adsl_3grp *A subject level demographic dataset*

Description

A dataset containing the demographic information of a clinical trial following the CDISC ADaM standard.

Usage

```
forestly_adsl_3grp
```

Format

A data frame with 254 rows and 49 variables.

Details

Definition of each variable can be found at https://github.com/phuse-org/phuse-scripts/tree/master/data/adam/cdisc.

Source

https://github.com/phuse-org/phuse-scripts/tree/master/data/adam/cdisc

---

`format_ae_forestly` *Format outdata for interactive forest plot*

Description

Format outdata for interactive forest plot

Usage

```
format_ae_forestly(
  outdata,
  display = c("n", "prop", "fig_prop", "fig_diff"),
  digits = 1,
  width_term = 200,
  width_fig = 320,
  width_n = 40,
  width_prop = 60,
  width_diff = 80,
  footer_space = 90,
  color = NULL,
  diff_label = "Treatment <- Favor -> Placebo",
  show_ae_parameter = FALSE
)
```

Arguments

`outdata`	An `outdata` object created by `prepare_ae_forestly()`.
`display`	A character vector of measurement to be displayed. • `n`: Number of subjects with AE. • `prop`: Proportion of subjects with AE. • `total`: Total columns. • `diff`: Risk difference.
`digits`	A value of digits to be displayed for proportion and risk difference.
`width_term`	Width in px for AE term column.
`width_fig`	Width in px for proportion and risk difference figure.
`width_n`	Width in px for "N" columns.

width_prop	Width in px for "(%)" columns.
width_diff	Width in px for risk difference columns.
footer_space	Space in px for footer to display legend.
color	A vector of colors for analysis groups. Default value supports up to 4 groups.
diff_label	x-axis label for risk difference.
show_ae_parameter	A boolean value to display AE parameter column.

Value

An outdata object.

Examples

```
adsl <- forestly_adsl[1:100,]
adae <- forestly_adae[1:100,]
meta_forestly(
  dataset_adsl = adsl,
  dataset_adae = adae,
  population_term = "apat",
  observation_term = "wk12"
) |>
  prepare_ae_forestly(parameter = "any;rel")|>
  format_ae_forestly()
```

---

meta_forestly *Create metadata for interactive forest plot*

Description

Create metadata for interactive forest plot

Usage

```
meta_forestly(
  dataset_adsl,
  dataset_adae,
  population_term,
  population_subset = SAFFL == "Y",
  observation_term,
  observation_subset = SAFFL == "Y",
  parameter_term = "any;rel;ser"
)
```

Arguments

dataset_adsl	ADSL source dataset.
dataset_adae	ADAE source dataset.
population_term	A character value of population term name.
population_subset	An unquoted condition for selecting the populations from ADSL dataset.
observation_term	A character value of observation term name.
observation_subset	An unquoted condition for selecting the observations from ADAE dataset.
parameter_term	A character value of parameter term name.

Value

A metalite object.

Examples

```
meta_forestly(
  forestly_adsl,
  forestly_adae,
  population_term = "apat",
  observation_term = "wk12"
)
```

---

prepare_ae_forestly *Prepare datasets for interactive forest plot*

Description

Prepare datasets for interactive forest plot

Usage

```
prepare_ae_forestly(
  meta,
  population = NULL,
  observation = NULL,
  parameter,
  reference_group = NULL,
 ae_listing_display = c("SEX", "RACE", "AGE", "ASTDY", "AESEV", "AESER", "AEREL",
    "AEACN", "AEOUT", "SITEID", "ADURN", "ADURU")
)
```

Arguments

meta	A metadata object created by metalite.
population	A character value of population term name. The term name is used as key to link information.
observation	A character value of observation term name. The term name is used as key to link information.
parameter	A character value of parameter term name. The term name is used as key to link information.
reference_group	An integer to indicate reference group. Default is 2 if there are 2 groups, otherwise, the default is 1.
ae_listing_display	A vector of name of variables used to display on AE listing table.

Value

An outdata object.

Examples

```
adsl <- forestly_adsl[1:100,]
adae <- forestly_adae[1:100,]
meta_forestly(
  dataset_adsl = adsl,
  dataset_adae = adae,
  population_term = "apat",
  observation_term = "wk12"
) |>
  prepare_ae_forestly(parameter = "any;rel")
```

Index

∗ **datasets**
forestly_adae, 3
forestly_adae_3grp, 3
forestly_adsl, 4
forestly_adsl_3grp, 4

ae_forestly, 2

forestly_adae, 3
forestly_adae_3grp, 3
forestly_adsl, 4
forestly_adsl_3grp, 4
format_ae_forestly, 5
format_ae_forestly(), *2*

meta_forestly, 6

prepare_ae_forestly, 7
prepare_ae_forestly(), *5*