Package ‘AdhereRViz’

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Type Package

Title Interactive Visualisation of Medication Adherence Patterns

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Description Interactive graphical user interface (GUI) for the package ‘AdhereR’, allowing the user to access different data sources, to explore the patterns of medication use therein, and the computation of various measures of adherence. It is implemented using Shiny and HTML/CSS/JavaScript.

URL https://github.com/ddediu/AdhereR

License GPL (>= 2)

LazyData TRUE

RoxygenNote 7.1.0

Imports AdhereR (>= 0.6), lubridate (>= 1.5), parallel (>= 3.0),
        data.table (>= 1.9), manipulate (>= 1.0), shiny (>= 1.0),
        shinyWidgets (>= 0.4.4), shinyjs (>= 1.0), V8 (>= 1.5),
        colourpicker (>= 1.0), viridisLite (>= 0.3), highlight (>= 0.4),
        clipr (>= 0.4), knitr (>= 1.20), readODS (>= 1.6), readxl (>= 1.2),
        haven (>= 2.0), DBI (>= 1.0), RMariaDB (>= 1.0.5),
        RSQLite (>= 2.1), scales (>= 1.0), rsvg (>= 1.3)

Depends R (>= 3.0)

Suggests rmarkdown (>= 1.1), R.rsp (>= 0.40)

VignetteBuilder knitr, R.rsp

Encoding UTF-8

NeedsCompilation no

Repository CRAN

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plot_interactive_cma

Interactive exploration and CMA computation.

Description

Interactively plots the data for one or more patients, allowing the real-time exploration of the various CMAs and their parameters. It can use Rstudio’s manipulate library (deprecated) or Shiny (recommended).

Usage

plot_interactive_cma(
  data = NULL,
  ID = NULL,
  cma.class = c("simple", "per episode", "sliding window")[1],
  print.full.params = FALSE,
  ID.colname = NA,
  event.date.colname = NA,
  event.duration.colname = NA,
  event.daily.dose.colname = NA,
  medication.class.colname = NA,
  date.format = "%m/%d/%Y",
  followup.window.start.max = 5 * 365,
  followup.window.duration.max = 5 * 365,
  observation.window.start.max = followup.window.start.max,
  observation.window.duration.max = followup.window.duration.max,
  align.all.patients = FALSE,
  align.first.event.at.zero = TRUE,
  maximum.permissible.gap.max = 2 * 365,
  sliding.window.start.max = followup.window.start.max,
  sliding.window.duration.max = 2 * 365,
  sliding.window.step.duration.max = 2 * 365,
  backend = c("shiny", "rstudio")[1],
  use.system.browser = FALSE,
  get.colnames.fnc = function(d) names(d),
  get.patients.fnc = function(d, idcol) unique(d[[idcol]]),
  get.data.for.patients.fnc = function(patientid, d, idcol, cols = NA, maxrows = NA)
    d[d[[idcol]] %in% patientid, ],
  ...
)
Arguments

**data**

Usually a data.frame containing the events (prescribing or dispensing) used to compute the CMA. Must contain, at a minimum, the patient unique ID, the event date and duration, and might also contain the daily dosage and medication type (the actual column names are defined in the following four parameters). Alternatively, this can be any other data source (for example, a connection to a database), in which case the user must redefine the arguments `get.colnames.fnc`, `get.patients.fnc` and `get.data.for.patients.fnc` appropriately. Currently, this works only when using Shiny for interactive rendering. For a working example, please see the vignette describing the interfacing with databases.

**ID**

The ID (as given in the ID.colname column) of the patient whose data to interactively plot (if absent, pick the first one); please note that this an be interactively selected during plotting.

**cma.class**

The type of CMAs to plot; can be "simple" (CMA0 to CMA9), "per episode", or "sliding window".

**print.full.params**

A logical specifying if the values of all the parameters used to generate the current plot should be printed in the console (if TRUE, it can generate extremely verbose output!).

**ID.colname**

A string, the name of the column in data containing the unique patient ID, or NA if not defined.

**event.date.colname**

A string, the name of the column in data containing the start date of the event (in the format given in the date.format parameter), or NA if not defined.

**event.duration.colname**

A string, the name of the column in data containing the event duration (in days), or NA if not defined.

**event.daily.dose.colname**

A string, the name of the column in data containing the prescribed daily dose, or NA if not defined.

**medication.class.colname**

A string, the name of the column in data containing the classes/types/groups of medication, or NA if not defined.

**date.format**

A string giving the format of the dates used in the data and the other parameters; see the format parameters of the `as.Date` function for details (NB, this concerns only the dates given as strings and not as Date objects).

**followup.window.start.max**

The maximum number of days when the follow-up window can start.

**followup.window.duration.max**

The maximum duration of the follow-up window in days.

**observation.window.start.max**

The maximum number of days when the observation window can start.

**observation.window.duration.max**

The maximum duration of the observation window in days.
align.all.patients
    Should the patients be aligned?
align.first.event.at.zero
    Should the first event be put at zero?
maximum.permissible.gap.max
    The maximum permissible gap in days.
sliding.window.start.max
    The maximum number of days when the sliding windows can start.
sliding.window.duration.max
    The maximum duration of the sliding windows in days.
sliding.window.step.duration.max
    The maximum sliding window step in days.
backend
    The plotting backend to use; "shiny" (the default) tries to use the Shiny framework, while "rstudio" uses the manipulate RStudio capability.
use.system.browser
    For shiny, use the system browser?
get.colnames.fnc
    A function taking as parameter the data source and returning the column names. Must be overridden when the data source is not derived from a data.frame.
get.patients.fnc
    A function taking as parameter the data source and the patient ID column name, and returns the list of all patient IDs. Must be overridden when the data source is not derived from a data.frame.
get.data.for.patients.fnc
    A function taking as parameter a (set of) patient ID(s), the data source, and the patient ID column name, and returns the list of all patient IDs. Must be overridden when the data source is not derived from a data.frame.
...
    Extra arguments.

Details

The manipulate is kept for backward compatibility only, as it is much more limited than Shiny and will receive no new development in the future. Shiny currently allows the use of any other data source besides a default (and usual) data.frame (or derived), such a connection to an SQL database. In this case, the user must redefine the three argument functions get.colnames.fnc, get.patients.fnc and get.data.for.patients.fnc which collectively define an interface for listing the column names, all the patient IDs, and for retrieving the actual data for a (set of) patient ID(s). A fully worked example is described in the vignette detailing the access to standard databases storing the patient information. For more info please see the vignette.

Value

Nothing

See Also

The vignette *AdhereR: Interactive plotting (and more) with Shiny*. 
Examples

```r
if(interactive()) {
    library(AdhereR);
    plot_interactive_cma(med.events,
        ID.colname="PATIENT_ID",
        event.date.colname="DATE",
        event.duration.colname="DURATION",
        event.daily.dose.colname="PERDAY",
        medication.class.colname="CATEGORY";
    }
```
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