Package ‘AdhereRViz’
October 12, 2022

Type  Package
Title  Adherence to Medications
Version  0.2.1
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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)
Imports  AdhereR (>= 0.7.1), 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), DBI (>= 1.0),
         RMariaDB (>= 1.0.5), RSQLite (>= 2.1)
Depends  R (>= 3.0)
Suggests  rmarkdown (>= 1.1), readODS (>= 1.6), readxl (>= 1.2), haven
          (>= 2.0), R.rsp (>= 0.40)
VignetteBuilder  knitr, R.rsp
Encoding  UTF-8
RoxygenNote  7.2.0
NeedsCompilation  no
Repository  CRAN
Date/Publication  2022-06-24 08:00:07 UTC

R topics documented:

plot_interactive_cma .................................................. 2
**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**

```r
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,
  medication.groups = NULL,
  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 = FALSE,
  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 not 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.

**medication.groups**  
A named character vector defining the medication classes, the name of a column in the data the defines the groups, or NULL if none (the default).

**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 aligend?
align.first.event.at.zero
   Should the first event be put at zero?
maximum.permissble.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
## Not run:
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");
## End(Not run)
```
Index

as.Date, 3

plot_interactive_cma, 2