

# Package ‘TreatmentPatterns’

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**Type** Package

**Title** Analyzes Real-World Treatment Patterns of a Study Population of Interest

**Version** 3.1.0

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**Description** Computes treatment patterns within a given cohort using the Observational Medical Outcomes Partnership (OMOP) common data model (CDM). As described in Markus, Verhamme, Kors, and Rijnbeek (2022) <doi:10.1016/j.cmpb.2022.107081>.

**URL** <https://github.com/darwin-eu/TreatmentPatterns>,  
<https://darwin-eu-dev.github.io/TreatmentPatterns/>

**BugReports** <https://github.com/darwin-eu/TreatmentPatterns/issues>

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**Suggests** knitr, rmarkdown, tibble, testthat (>= 3.0.0), usethis,  
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'TreatmentPatternsResults.R' 'attrition.R' 'computePathways.R'  
'constructPathways.R' 'createSankeyDiagram.R'  
'createSunburstPlot.R' 'executeTreatmentPatterns.R' 'export.R'  
'exportPatientLevel.R' 'getResultsDataModelSpecification.R'  
'ggSunburst.R' 'plotEventDuration.R'

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|                 |                        |
|-----------------|------------------------|
| computePathways | <i>computePathways</i> |
|-----------------|------------------------|

---

Description

Compute treatment patterns according to the specified parameters within specified cohorts.

Usage

```
computePathways(  
  cohorts,  
  cohortTableName,  
  cdm = NULL,  
  connectionDetails = NULL,  
  cdmSchema = NULL,  
  resultSchema = NULL,  
  analysisId = 1,  
  description = "",  
  tempEmulationSchema = NULL,  
  startAnchor = "startDate",  
  windowStart = 0,  
  endAnchor = "endDate",  
  windowEnd = 0,  
  minEraDuration = 0,
```

```

splitEventCohorts = NULL,
splitTime = NULL,
eraCollapseSize = 30,
combinationWindow = 30,
minPostCombinationDuration = 30,
filterTreatments = "First",
maxPathLength = 5,
overlapMethod = "truncate",
concatTargets = TRUE
)

```

### Arguments

|                     |                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cohorts             | (data.frame())<br>Data frame containing the following columns and data types:<br><b>cohortId</b> numeric(1) Cohort ID's of the cohorts to be used in the cohort table.<br><b>cohortName</b> character(1) Cohort names of the cohorts to be used in the cohort table.<br><b>type</b> character(1) ["target", "event", "exit" ] Cohort type, describing if the cohort is a target, event, or exit cohort |
| cohortTableName     | (character(1))<br>Cohort table name.                                                                                                                                                                                                                                                                                                                                                                   |
| cdm                 | (CDMConnector::cdm_from_con(): NULL)<br>Optional; Ignores connectionDetails, cdmSchema, and resultSchema.                                                                                                                                                                                                                                                                                              |
| connectionDetails   | (DatabaseConnector::createConnectionDetails(): NULL)<br>Optional; In congruence with cdmSchema and resultSchema. Ignores cdm.                                                                                                                                                                                                                                                                          |
| cdmSchema           | (character(1): NULL)<br>Optional; In congruence with connectionDetails and resultSchema. Ignores cdm.                                                                                                                                                                                                                                                                                                  |
| resultSchema        | (character(1): NULL)<br>Optional; In congruence with connectionDetails and cdmSchema. Ignores cdm.                                                                                                                                                                                                                                                                                                     |
| analysisId          | (character(1)) Identifier for the TreatmentPatterns analysis.                                                                                                                                                                                                                                                                                                                                          |
| description         | (character(1)) Description of the analysis.                                                                                                                                                                                                                                                                                                                                                            |
| tempEmulationSchema | Schema used to emulate temp tables                                                                                                                                                                                                                                                                                                                                                                     |
| startAnchor         | (character(1): "startDate") Start date anchor. One of: "startDate", "endDate"                                                                                                                                                                                                                                                                                                                          |
| windowStart         | (numeric(1): 0) Offset for startAnchor in days.                                                                                                                                                                                                                                                                                                                                                        |
| endAnchor           | (character(1): "endDate") End date anchor. One of: "startDate", "endDate"                                                                                                                                                                                                                                                                                                                              |
| windowEnd           | (numeric(1): 0) Offset for endAnchor in days.                                                                                                                                                                                                                                                                                                                                                          |
| minEraDuration      | (integer(1): 0)<br>Minimum time an event era should last to be included in analysis                                                                                                                                                                                                                                                                                                                    |

```

splitEventCohorts
  (character(n): "")
  Specify event cohort to split in acute (< X days) and therapy (>= X days)
splitTime
  (integer(1): 30)
  Specify number of days (X) at which each of the split event cohorts should be
  split in acute and therapy
eraCollapseSize
  (integer(1): 30)
  Window of time between which two eras of the same event cohort are collapsed
  into one era
combinationWindow
  (integer(1): 30)
  Window of time two event cohorts need to overlap to be considered a combina-
  tion treatment
minPostCombinationDuration
  (integer(1): 30)
  Minimum time an event era before or after a generated combination treatment
  should last to be included in analysis
filterTreatments
  (character(1): "First" ["first", "Changes", "all"])
  Select first occurrence of ('First'); changes between ('Changes'); or all event
  cohorts ('All').
maxPathLength
  (integer(1): 5)
  Maximum number of steps included in treatment pathway
overlapMethod
  (character(1): "truncate") Method to decide how to deal with overlap that
  is not significant enough for combination. "keep" will keep the dates as is.
  "truncate" truncates the first occurring event to the start date of the next event.
concatTargets
  (logical(1): TRUE) Should multiple target cohorts for the same person be con-
  catenated or not?

```

### Value

(Andromeda::andromeda()) [andromeda](#) object containing non-sharable patient level data outcomes.

### Examples

```

ableToRun <- all(
  require("CirceR", character.only = TRUE, quietly = TRUE),
  require("CDMConnector", character.only = TRUE, quietly = TRUE),
  require("TreatmentPatterns", character.only = TRUE, quietly = TRUE),
  require("dplyr", character.only = TRUE, quietly = TRUE)
)

if (ableToRun) {
  library(TreatmentPatterns)
  library(CDMConnector)
  library(dplyr)

  withr::local_envvar(

```

```

    R_USER_CACHE_DIR = tempfile(),
    EUNOMIA_DATA_FOLDER = Sys.getenv("EUNOMIA_DATA_FOLDER", unset = tempfile())
  )

  tryCatch(
    {
      if (Sys.getenv("skip_eunomia_download_test") != "TRUE") {
        CDMConnector::downloadEunomiaData(overwrite = TRUE)
      }
    },
    error = function(e) NA
  )

  con <- DBI::dbConnect(duckdb::duckdb(), dbdir = eunomiaDir())
  cdm <- cdmFromCon(con, cdmSchema = "main", writeSchema = "main")

  cohortSet <- readCohortSet(
    path = system.file(package = "TreatmentPatterns", "exampleCohorts")
  )

  cdm <- generateCohortSet(
    cdm = cdm,
    cohortSet = cohortSet,
    name = "cohort_table"
  )

  cohorts <- cohortSet %>%
    # Remove 'cohort' and 'json' columns
    select(-"cohort", -"json") %>%
    mutate(type = c("event", "event", "event", "event", "exit", "event", "event", "target")) %>%
    rename(
      cohortId = "cohort_definition_id",
      cohortName = "cohort_name",
    ) %>%
    select("cohortId", "cohortName", "type")

  outputEnv <- computePathways(
    cohorts = cohorts,
    cohortTableName = "cohort_table",
    cdm = cdm
  )

  Andromeda::close(outputEnv)
  DBI::dbDisconnect(con, shutdown = TRUE)
}

```

**Description**

Create sankey diagram.

**Usage**

```
createSankeyDiagram(
  treatmentPathways,
  groupCombinations = FALSE,
  colors = NULL,
  ...
)
```

**Arguments**

|                   |                                                                                                                                           |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| treatmentPathways | (data.frame())<br>The contents of the treatmentPathways.csv-file as a data.frame().                                                       |
| groupCombinations | (logical(1): FALSE)<br><br>TRUE Group all combination treatments in category "Combination".<br>FALSE Do not group combination treatments. |
| colors            | (character(n)) Vector of hex color codes.                                                                                                 |
| ...               | Paramaters for <a href="#">sankeyNetwork</a> .                                                                                            |

**Value**

(htmlwidget)

**Examples**

```
# Dummy data, typically read from treatmentPathways.csv
treatmentPathways <- data.frame(
  pathway = c("Acetaminophen", "Acetaminophen-Amoxicillin+Clavulanate",
    "Acetaminophen-Aspirin", "Amoxicillin+Clavulanate", "Aspirin"),
  freq = c(206, 6, 14, 48, 221),
  sex = rep("all", 5),
  age = rep("all", 5),
  index_year = rep("all", 5)
)

createSankeyDiagram(treatmentPathways)
```

---

|                    |                           |
|--------------------|---------------------------|
| createSunburstPlot | <i>createSunburstPlot</i> |
|--------------------|---------------------------|

---

## Description

New sunburstPlot function

## Usage

```
createSunburstPlot(treatmentPathways, groupCombinations = FALSE, ...)
```

## Arguments

**treatmentPathways**  
(data.frame())  
The contents of the treatmentPathways.csv-file as a data.frame().

**groupCombinations**  
(logical(1): FALSE)

TRUE Group all combination treatments in category "Combination".  
FALSE Do not group combination treatments.

... Paramaters for [sunburst](#).

## Value

(htmlwidget)

## Examples

```
# Dummy data, typically read from treatmentPathways.csv
treatmentPatwhays <- data.frame(
  pathway = c("Acetaminophen", "Acetaminophen-Amoxicillin+Clavulanate",
    "Acetaminophen-Aspirin", "Amoxicillin+Clavulanate", "Aspirin"),
  freq = c(206, 6, 14, 48, 221),
  sex = rep("all", 5),
  age = rep("all", 5),
  index_year = rep("all", 5)
)

createSunburstPlot(treatmentPatwhays)
```

---

executeTreatmentPatterns

*executeTreatmentPatterns*


---

## Description

Compute treatment patterns according to the specified parameters within specified cohorts. For more customization, or investigation of patient level outcomes, you can run [computePathways](#) and [export](#) separately.

## Usage

```
executeTreatmentPatterns(
  cohorts,
  cohortTableName,
  cdm = NULL,
  connectionDetails = NULL,
  cdmSchema = NULL,
  resultSchema = NULL,
  tempEmulationSchema = NULL,
  minEraDuration = 0,
  eraCollapseSize = 30,
  combinationWindow = 30,
  minCellCount = 5
)
```

## Arguments

|                   |                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cohorts           | (data.frame())<br>Data frame containing the following columns and data types:<br><b>cohortId</b> numeric(1) Cohort ID's of the cohorts to be used in the cohort table.<br><b>cohortName</b> character(1) Cohort names of the cohorts to be used in the cohort table.<br><b>type</b> character(1) ["target", "event", "exit" ] Cohort type, describing if the cohort is a target, event, or exit cohort |
| cohortTableName   | (character(1))<br>Cohort table name.                                                                                                                                                                                                                                                                                                                                                                   |
| cdm               | (CDMConnector::cdm_from_con(): NULL)<br>Optional; Ignores connectionDetails, cdmSchema, and resultSchema.                                                                                                                                                                                                                                                                                              |
| connectionDetails | (DatabaseConnector::createConnectionDetails(): NULL)<br>Optional; In congruence with cdmSchema and resultSchema. Ignores cdm.                                                                                                                                                                                                                                                                          |
| cdmSchema         | (character(1): NULL)<br>Optional; In congruence with connectionDetails and resultSchema. Ignores cdm.                                                                                                                                                                                                                                                                                                  |

**resultSchema** (character(1): NULL)  
 Optional; In congruence with connectionDetails and cdmSchema. Ignores cdm.

**tempEmulationSchema**  
 (character(1)) Schema to emulate temp tables.

**minEraDuration** (integer(1): 0)  
 Minimum time an event era should last to be included in analysis

**eraCollapseSize**  
 (integer(1): 30)  
 Window of time between which two eras of the same event cohort are collapsed into one era

**combinationWindow**  
 (integer(1): 30)  
 Window of time two event cohorts need to overlap to be considered a combination treatment

**minCellCount** (integer(1): 5)  
 Minimum count required per pathway. Censors data below x as <x. This minimum value will carry over to the sankey diagram and sunburst plot.

## Value

TreatmentPatternsResults

## Examples

```

ableToRun <- all(
  require("CirceR", character.only = TRUE, quietly = TRUE),
  require("CDMConnector", character.only = TRUE, quietly = TRUE),
  require("TreatmentPatterns", character.only = TRUE, quietly = TRUE),
  require("dplyr", character.only = TRUE, quietly = TRUE)
)

if (require("CirceR", character.only = TRUE, quietly = TRUE)) {
  library(TreatmentPatterns)
  library(CDMConnector)
  library(dplyr)

  withr::local_envvar(
    R_USER_CACHE_DIR = tempfile(),
    EUNOMIA_DATA_FOLDER = Sys.getenv("EUNOMIA_DATA_FOLDER", unset = tempfile())
  )

  tryCatch(
    {
      if (Sys.getenv("skip_eunomia_download_test") != "TRUE") {
        CDMConnector::downloadEunomiaData(overwrite = TRUE)
      }
    },
    error = function(e) NA
  )
}

```

```

con <- DBI::dbConnect(duckdb::duckdb(), dbdir = eunomiaDir())
cdm <- cdmFromCon(con, cdmSchema = "main", writeSchema = "main")

cohortSet <- readCohortSet(
  path = system.file(package = "TreatmentPatterns", "exampleCohorts")
)

cdm <- generateCohortSet(
  cdm = cdm,
  cohortSet = cohortSet,
  name = "cohort_table"
)

cohorts <- cohortSet %>%
  # Remove 'cohort' and 'json' columns
  select(-"cohort", -"json") %>%
  mutate(type = c("event", "event", "event", "event", "exit", "event", "event", "target")) %>%
  rename(
    cohortId = "cohort_definition_id",
    cohortName = "cohort_name",
  ) %>%
  select("cohortId", "cohortName", "type")

executeTreatmentPatterns(
  cohorts = cohorts,
  cohortTableName = "cohort_table",
  cdm = cdm
)

DBI::dbDisconnect(con, shutdown = TRUE)
}

```

---

export

*export*


---

## Description

Export andromeda generated by [computePathways](#) object to sharable csv-files and/or a zip archive.

## Usage

```

export(
  andromeda,
  outputPath = NULL,
  ageWindow = 10,
  minCellCount = 5,
  censorType = "minCellCount",
  archiveName = NULL,

```

```

    nonePaths = FALSE,
    stratify = FALSE
  )

```

### Arguments

|              |                                                                                                                                                                                                                                                         |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| andromeda    | (Andromeda::andromeda()) Andromeda object.                                                                                                                                                                                                              |
| outputPath   | (character: NULL) Output path where to write output files to. When set to NULL no files will be written, and only the results object is returned.                                                                                                       |
| ageWindow    | (integer(n): 10)<br>Number of years to bin age groups into. It may also be a vector of integers. I.e. <code>c(0, 18, 150)</code> which will results in age group 0-18 which includes subjects < 19. And age group 18-150 which includes subjects > 18.  |
| minCellCount | (integer(1): 5)<br>Minimum count required per pathway. Censors data below <code>x</code> as <code>&lt;x</code> . This minimum value will carry over to the sankey diagram and sunburst plot.                                                            |
| censorType   | (character(1))<br><br>"minCellCount" Censors pathways <minCellCount to minCellCount.<br>"remove" Censors pathways <minCellCount by removing them completely.<br>"mean" Censors pathways <minCellCount to the mean of all frequencies below minCellCount |
| archiveName  | (character(1): NULL)<br>If not NULL adds the exported files to a ZIP-file with the specified archive name.                                                                                                                                              |
| nonePaths    | (logical(1)) Should None paths be included? This will fetch all persons included in the target cohort and assign them a "None" pathway. Significantly impacts performance.                                                                              |
| stratify     | (logical(1)) Should pathways be stratified? This will perform pairwise stratification between age, sex, and index year. Significantly impacts performance.                                                                                              |

### Value

TreatmentPatternsResults object

### Examples

```

ableToRun <- all(
  require("CirceR", character.only = TRUE, quietly = TRUE),
  require("CDMConnector", character.only = TRUE, quietly = TRUE),
  require("TreatmentPatterns", character.only = TRUE, quietly = TRUE),
  require("dplyr", character.only = TRUE, quietly = TRUE)
)

if (ableToRun) {
  library(TreatmentPatterns)
  library(CDMConnector)
  library(dplyr)
}

```

```

withr::local_envvar(
  R_USER_CACHE_DIR = tempfile(),
  EUNOMIA_DATA_FOLDER = Sys.getenv("EUNOMIA_DATA_FOLDER", unset = tempfile())
)

tryCatch({
  if (Sys.getenv("skip_eunomia_download_test") != "TRUE") {
    CDMConnector::downloadEunomiaData(overwrite = TRUE)
  }
}, error = function(e) NA)

con <- DBI::dbConnect(duckdb::duckdb(), dbdir = eunomiaDir())
cdm <- cdmFromCon(con, cdmSchema = "main", writeSchema = "main")

cohortSet <- readCohortSet(
  path = system.file(package = "TreatmentPatterns", "exampleCohorts")
)

cdm <- generateCohortSet(
  cdm = cdm,
  cohortSet = cohortSet,
  name = "cohort_table"
)

cohorts <- cohortSet %>%
  # Remove 'cohort' and 'json' columns
  select(-"cohort", -"json") %>%
  mutate(type = c("event", "event", "event", "event", "exit", "event", "event", "target")) %>%
  rename(
    cohortId = "cohort_definition_id",
    cohortName = "cohort_name",
  ) %>%
  select("cohortId", "cohortName", "type")

outputEnv <- computePathways(
  cohorts = cohorts,
  cohortTableName = "cohort_table",
  cdm = cdm
)

results <- export(
  andromeda = outputEnv
)

Andromeda::close(outputEnv)
DBI::dbDisconnect(con, shutdown = TRUE)
}

```

**Description**

Exports patient-level files for custom data analysis.

**Usage**

```
exportPatientLevel(andromeda, outputPath)
```

**Arguments**

andromeda (Andromeda) Andromeda object from computePathways().  
 outputPath (character(1)) Directory where to write output files to.

**Value**

NULL

**Examples**

```
if (interactive()) {
  library(CDMConnector)
  library(DBI)
  library(TreatmentPatterns)

  con <- DBI::dbConnect(duckdb::duckdb(), dbdir = CDMConnector::eunomiaDir())
  cdm <- cdmFromCon(con, cdmSchema = "main", writeSchema = "main")

  cohortSet <- readCohortSet(
    path = system.file(package = "TreatmentPatterns", "exampleCohorts")
  )

  cdm <- generateCohortSet(
    cdm = cdm,
    cohortSet = cohortSet,
    name = "cohort_table"
  )

  cohorts <- cohortSet %>%
    # Remove 'cohort' and 'json' columns
    select("-cohort", "-json") %>%
    mutate(type = c("event", "event", "event", "event", "exit", "event", "event", "target")) %>%
    rename(
      cohortId = "cohort_definition_id",
      cohortName = "cohort_name",
    ) %>%
    select("cohortId", "cohortName", "type")

  outputEnv <- computePathways(
    cohorts = cohorts,
    cohortTableName = "cohort_table",
    cdm = cdm
  )
}
```

|                                                                                  |                   |
|----------------------------------------------------------------------------------|-------------------|
| <pre>exportPatientLevel(outputEnv, tempdir()) }</pre>                            |                   |
| <hr/>                                                                            |                   |
| <pre>getResultsDataModelSpecifications   getResultsDataModelSpecifications</pre> |                   |
| <hr/>                                                                            |                   |
| <b>Description</b>                                                               |                   |
| Gets the results data model specifications of TreatmentPatterns.                 |                   |
| <b>Usage</b>                                                                     |                   |
| <pre>getResultsDataModelSpecifications()</pre>                                   |                   |
| <b>Value</b>                                                                     |                   |
| data.frame                                                                       |                   |
| <b>Examples</b>                                                                  |                   |
| <pre>{   getResultsDataModelSpecifications() }</pre>                             |                   |
| <hr/>                                                                            |                   |
| ggSunburst                                                                       | <i>ggSunburst</i> |
| <hr/>                                                                            |                   |

**Description**

ggSunburst

**Usage**

```
ggSunburst(treatmentPathways, groupCombinations = FALSE, unit = "percent")
```

**Arguments**

|                   |                                                                                                                                           |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| treatmentPathways | (data.frame())<br>The contents of the treatmentPathways.csv-file as a data.frame().                                                       |
| groupCombinations | (logical(1): FALSE)<br><br>TRUE Group all combination treatments in category "Combination".<br>FALSE Do not group combination treatments. |
| unit              | (character(1)) Either "count" or "percent", to scale the plot to.                                                                         |

**Value**

(gg, ggplot)

**Examples**

```
# Dummy data, typically read from treatmentPathways.csv
treatmentPatwhays <- data.frame(
  pathway = c("Acetaminophen", "Acetaminophen-Amoxicillin+Clavulanate",
             "Acetaminophen-Aspirin", "Amoxicillin+Clavulanate", "Aspirin"),
  freq = c(206, 6, 14, 48, 221),
  sex = rep("all", 5),
  age = rep("all", 5),
  index_year = rep("all", 5)
)

ggSunburst(treatmentPatwhays)
```

---

|                   |                          |
|-------------------|--------------------------|
| plotEventDuration | <i>plotEventDuration</i> |
|-------------------|--------------------------|

---

**Description**

plotEventDuration

**Usage**

```
plotEventDuration(
  eventDurations,
  minCellCount = 0,
  treatmentGroups = "both",
  eventLines = NULL,
  includeOverall = TRUE
)
```

**Arguments**

|                 |                                                                                                                                                                                                          |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| eventDurations  | (data.frame) Contents of summaryEventDuration.csv file.                                                                                                                                                  |
| minCellCount    | (numeric(1): 0) Min Cell Count per event group.                                                                                                                                                          |
| treatmentGroups | (character(1): "both") "group": Only mono-, and combination-events. "individual": Only individual (combination) events. "both": Both mono-, and combination-events, and individual (combination) events. |
| eventLines      | (numeric(n): NULL) Event lines to include, i.e. c(1, 2, 3) includes first (1), second (2), and third (3) lines of events. NULL will include all eventLines.                                              |
| includeOverall  | (logical(1): TRUE) TRUE: Include an overall column with the eventLines. FALSE: Exclude the overall column.                                                                                               |

**Value**

ggplot

**Examples**

```

ableToRun <- all(
  require("CirceR", character.only = TRUE, quietly = TRUE),
  require("CDMConnector", character.only = TRUE, quietly = TRUE),
  require("TreatmentPatterns", character.only = TRUE, quietly = TRUE),
  require("dplyr", character.only = TRUE, quietly = TRUE)
)

if (ableToRun) {
  withr::local_envvar(
    R_USER_CACHE_DIR = tempfile(),
    EUNOMIA_DATA_FOLDER = Sys.getenv("EUNOMIA_DATA_FOLDER", unset = tempfile())
  )

  tryCatch({
    if (Sys.getenv("skip_eunomia_download_test") != "TRUE") {
      CDMConnector::downloadEunomiaData(overwrite = TRUE)
    }
  }, error = function(e) NA)

  con <- DBI::dbConnect(duckdb::duckdb(), dbdir = eunomiaDir())
  cdm <- cdmFromCon(con, cdmSchema = "main", writeSchema = "main")

  cohortSet <- readCohortSet(
    path = system.file(package = "TreatmentPatterns", "exampleCohorts")
  )

  cdm <- generateCohortSet(
    cdm = cdm,
    cohortSet = cohortSet,
    name = "cohort_table"
  )

  cohorts <- cohortSet %>%
    # Remove 'cohort' and 'json' columns
    select(-"cohort", -"json") %>%
    mutate(type = c("event", "event", "event", "event", "exit", "event", "event", "target")) %>%
    rename(
      cohortId = "cohort_definition_id",
      cohortName = "cohort_name",
    ) %>%
    select("cohortId", "cohortName", "type")

  outputEnv <- computePathways(
    cohorts = cohorts,
    cohortTableName = "cohort_table",
    cdm = cdm
  )

```

```

results <- export(outputEnv)

plotEventDuration(
  eventDurations = results$summary_event_duration,
  minCellCount = 5,
  treatmentGroups = "group",
  eventLines = 1:4,
  includeOverall = FALSE
)

Andromeda::close(outputEnv)
DBI::dbDisconnect(con, shutdown = TRUE)
}

```

---

## TreatmentPatternsResults

### *TreatmentPatternsResults Class*

---

## Description

Houses the results of a TreatmentPatterns analysis. Each field corresponds to a file. Plotting methods are provided.

## Active bindings

```

attrition (data.frame)
metadata (data.frame)
treatment_pathways (data.frame)
summary_event_duration (data.frame)
counts_age (data.frame)
counts_sex (data.frame)
counts_year (data.frame)
cdm_source_info (data.frame)
analyses (data.frame)
arguments (list)

```

## Methods

### Public methods:

- [TreatmentPatternsResults\\$new\(\)](#)
- [TreatmentPatternsResults\\$saveAsZip\(\)](#)
- [TreatmentPatternsResults\\$saveAsCsv\(\)](#)
- [TreatmentPatternsResults\\$uploadResultsToDb\(\)](#)

- [TreatmentPatternsResults\\$load\(\)](#)
- [TreatmentPatternsResults\\$plotSunburst\(\)](#)
- [TreatmentPatternsResults\\$plotSankey\(\)](#)
- [TreatmentPatternsResults\\$plotEventDuration\(\)](#)
- [TreatmentPatternsResults\\$clone\(\)](#)

**Method** `new()`: Initializer method

*Usage:*

```
TreatmentPatternsResults$new(
  attrition = NULL,
  metadata = NULL,
  treatmentPathways = NULL,
  summaryEventDuration = NULL,
  countsAge = NULL,
  countsSex = NULL,
  countsYear = NULL,
  cdmSourceInfo = NULL,
  analyses = NULL,
  arguments = NULL,
  filePath = NULL
)
```

*Arguments:*

`attrition` (data.frame) attrition result.

`metadata` (data.frame) metadata result.

`treatmentPathways` (data.frame) treatmentPathways result.

`summaryEventDuration` (data.frame) summaryEventDuration result.

`countsAge` (data.frame) countsAge result.

`countsSex` (data.frame) countsSex result.

`countsYear` (data.frame) countsYear result.

`cdmSourceInfo` (data.frame) cdmSourceInfo result.

`analyses` (data.frame) Analyses result.

`arguments` (list) Named list of arguments used.

`filePath` (character) File path to either a directory or zip-file, containing the csv-files.

**Method** `saveAsZip()`: Save the results as a zip-file.

*Usage:*

```
TreatmentPatternsResults$saveAsZip(path, name, verbose = TRUE)
```

*Arguments:*

`path` (character(1)) Path to write to.

`name` (character(1)) File name.

`verbose` (logical: TRUE) Verbose messaging.

*Returns:* `self`

**Method** `saveAsCsv()`: Save the results as csv-files.

*Usage:*

```
TreatmentPatternsResults$saveAsCsv(path, verbose = TRUE)
```

*Arguments:*

path (character(1)) Path to write to.

verbose (logical: TRUE) Verbose messaging.

*Returns:* self

**Method** uploadResultsToDb(): Upload results to a resultsDatabase using ResultModelManager.

*Usage:*

```
TreatmentPatternsResults$uploadResultsToDb(
  connectionDetails,
  schema,
  prefix = "tp_",
  overwrite = TRUE,
  purgeSiteDataBeforeUploading = FALSE
)
```

*Arguments:*

connectionDetails (ConnectionDetails) ConnectionDetails object from DatabaseConnector.

schema (character(1)) Schema to write tables to.

prefix (character(1): "tp\_") Table prefix.

overwrite (logical(1): TRUE) Should tables be overwritten?

purgeSiteDataBeforeUploading (logical: FALSE) Should site data be purged before uploading?

*Returns:* self

**Method** load(): Load data from files.

*Usage:*

```
TreatmentPatternsResults$load(filePath)
```

*Arguments:*

filePath (character(1)) Path to a directory or zip-file containing the result csv-files.

*Returns:* self

**Method** plotSunburst(): Wrapper for TreatmentPatterns::createSunburstPlot(), but with data filtering step.

*Usage:*

```
TreatmentPatternsResults$plotSunburst(
  age = "all",
  sex = "all",
  indexYear = "all",
  nonePaths = FALSE,
  ...
)
```

*Arguments:*

age (character(1)) Age group.  
sex (character(1)) Sex group.  
indexYear (character(1)) Index year group.  
nonePaths (logical(1)) Should None paths be included?  
... Parameters for TreatmentPatterns::createSunburstPlot()  
*Returns:* htmlwidget

**Method** plotSankey(): Wrapper for TreatmentPatterns::createSankeyDiagram(), but with data filtering step.

*Usage:*

```
TreatmentPatternsResults$plotSankey(
  age = "all",
  sex = "all",
  indexYear = "all",
  nonePaths = FALSE,
  ...
)
```

*Arguments:*

age (character(1)) Age group.  
sex (character(1)) Sex group.  
indexYear (character(1)) Index year group.  
nonePaths (logical(1)) Should None paths be included?  
... Parameters for TreatmentPatterns::createSankeyDiagram()  
*Returns:* htmlwidget

**Method** plotEventDuration(): Wrapper for TreatmentPatterns::plotEventDuration().

*Usage:*

```
TreatmentPatternsResults$plotEventDuration(...)
```

*Arguments:*

... Parameters for TreatmentPatterns::plotEventDuration()  
*Returns:* ggplot

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
TreatmentPatternsResults$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

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