Package 'CohortPrevalence'

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Title Standardized Prevalence Calculator for OMOP/OHDSI Ecosystem

Version 0.0.4

Description This package calculates prevalence of a condition in a population.

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Roxygen list(markdown = TRUE)

RoxygenNote 7.3.2

Imports cli,
crayon,
fs,
purrr,
SqlRender,
snakecase,
DatabaseConnector,
dplyr,
glue,
readr,
tibble,
tidyr,
here,
methods

Additional_repositories https://OHDSI.github.io/drat

Suggests knitr,
rmarkdown

VignetteBuilder knitr

R topics documented:

`createCohortPrevalenceAnalysis` *Create a* `CohortPrevalenceAnalysis` *object*

Description

Constructs an `CohortPrevalenceAnalysis` object with the specified settings.

Usage

```
createCohortPrevalenceAnalysis(
  analysisId,
  prevalentCohort,
  periodOfInterest,
  lookBackOptions,
  numeratorType,
  denominatorType,
  minimumObservationLength = 0L,
  useOnlyFirstObservationPeriod = FALSE,
  multiplier = 100000L,
  strata = NULL,
  demographicConstraints = createDemographicConstraints(),
  populationCohort = NULL
)
```

Arguments

`analysisId`	Unique integer analysisId to identify the analysis (required).
`prevalentCohort`	A `PrevalenceCohort` object specifying the cohort of interest (required).
`periodOfInterest`	A `PeriodOfInterest` object (required).
`numeratorType`	Character string specifying numerator type. Must be one of: • `"pn1"`: Patients who have been observed to have the condition of interest on the first day of the period of interest or within the lookback time • `"pn2"`: patients who have been observed to have the condition of interest at any time in the period of interest or within the lookback time
`denominatorType`	A `DenominatorType` object (required).

useOnlyFirstObservationPeriod
: Logical: TRUE to restrict analysis to the first observation period (optional).

multiplier
: Integer specifying prevalence multiplier (optional).

strata
: Character string. Must be one, or some of: "age", "gender", "race" (optional).

demographicConstraints
: a DemoConstraint object specifying the constraints of the population.

populationCohort
: A CohortPopulation object specifying the population of interest on which to compute prevalence.

lookbackOptions
: A LookBackOption object (required).

minimumObservationLength:
: Integer specifying minimum observation length (optional).

Value

A CohortPrevalenceAnalysis R6 object.

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createDemographicConstraints *Create a* DemoConstraint *object*

Description

Constructs an DemoConstraint object for prevalence analyses.

Usage

```
createDemographicConstraints(
  ageMin = 0,
  ageMax = 150,
  genderIds = c(8507, 8532)
)
```

Arguments

ageMin
: The minimum age allowed for the population. Default is 0

ageMax
: the maximum age allowed for the population. Default is 150

genderIds
: the genderIds allowed. Default is 8507 - M, and 8532 - F

Value

A DemoConstraint R6 object.

createDenominatorType *Create a* DenominatorType *object*

Description

Constructs an DenominatorType object for denominator choice.

Usage

```
createDenominatorType(denomType, sufficientDays = NULL)
```

Arguments

denomType	Character string specifying denominator type. Must be one of: • "pd1": Patients who have been observed on the first day of the period of interest • "pd2": Patients who contribute all observable person-days in the period of interest. • "pd3": Patients who contribute at least 1 day in the period of interest. • "pd4": Patients who contribute sufficient time in the period of interest based on at least n observable person-days in the period of interest.
sufficientDays	Integer: For denominator choice "pd4", the number of minimum observable days patients must be observed.

Value

A DenominatorType R6 object.

createLookBackOptions *Create a* LookBackOptions *object*

Description

Constructs an LookBackOptions object with the specified settings.

Usage

```
createLookBackOptions(lookBackDays = 99999L, useObservedTimeOnly = FALSE)
```

Arguments

lookBackDays	An integer number of days for the lookback period.
useObservedTimeOnly	Logical: TRUE restricts the lookback period to only using observed periods.

Value

A LookBackOptions R6 object.

createPopulationCohort *Create a population cohort* CohortInfo *object*

Description

Constructs an CohortInfo object for population of interest.

Usage

```
createPopulationCohort(cohortId, cohortName)
```

Arguments

cohortId	Integer: the cohort ID within the database results schema of interest.
cohortName	Character string specifying a name for the cohort.

Value

A CohortInfo R6 object.

createPrevalenceCohort *Create a prevalence cohort* CohortInfo *object*

Description

Constructs an CohortInfo object for target cohort of interest

Usage

```
createPrevalenceCohort(cohortId, cohortName)
```

Arguments

cohortId	Integer: the cohort ID within the database results schema of interest.
cohortName	Character string specifying a name for the cohort.

Value

A CohortInfo R6 object.

createRassenIncidenceAnalysis
Create a IncidenceAnalysis *object for Rassen Incidence*

Description

Constructs an IncidenceAnalysis object with the specified settings.

Usage

```
createRassenIncidenceAnalysis(
  analysisId,
  targetCohort,
  periodOfInterest,
  minimumObservationLength = 0L,
  useOnlyFirstObservationPeriod = FALSE,
  multiplier = 100000L,
  strata = NULL,
  demographicConstraints = createDemographicConstraints(),
  populationCohort = NULL
)
```

Arguments

analysisId	Unique integer analysisId to identify the analysis (required).
targetCohort	A TargetCohort object specifying the cohort of interest (required).
periodOfInterest	A PeriodOfInterest object (required).
useOnlyFirstObservationPeriod	Logical: TRUE to restrict analysis to the first observation period (optional).
multiplier	Integer specifying prevalence multiplier (optional).
strata	Character string. Must be one, or some of: "age", "gender", "race" (optional).
demographicConstraints	a DemoConstraint object specifying the constraints of the population.
populationCohort	A CohortPopulation object specifying the population of interest on which to compute prevalence.
minimumObservationLength:	Integer specifying minimum observation length (optional).

Value

A IncidenceAnalysis R6 object.

createSpan *Create a* PeriodOfInterest *object*

Description

Constructs an PeriodOfInterest object for span prevalence analyses.

Usage

```
createSpan(startDates, endDates)
```

Arguments

startYears	A numeric vector of start years of interest.
endYears	A numeric vector of end years of interest.

Value

A PeriodOfInterest R6 object.

createTargetCohort *Create a target cohort* CohortInfo *object*

Description

Constructs an CohortInfo object for target cohort of interest

Usage

```
createTargetCohort(cohortId, cohortName)
```

Arguments

cohortId	Integer: the cohort ID within the database results schema of interest.
cohortName	Character string specifying a name for the cohort.

Value

A CohortInfo R6 object.

createYearlyRange *Create a* PeriodOfInterest *object*

Description

Constructs an PeriodOfInterest object for yearly prevalence analyses.

Usage

```
createYearlyRange(range)
```

Arguments

range	A numeric vector of years of interest.

Value

A PeriodOfInterest R6 object.

exportPrevalenceQuery *Export Prevalence Query*

Description

Exports the full SQL query of a CohortPrevalenceAnalysis analysis.

Usage

```
exportPrevalenceQuery(
  prevalenceAnalysisClass,
  executionSettings,
  outputFolder = NULL
)
```

Arguments

prevalenceAnalysisClass	A CohortPrevalenceAnalysis R6 object with analysis settings (required).
outputFolder	Character string specifying the path to the folder where the output files will be saved. If left NULL, will default to current working directory (optional).

exportPrevalenceResults *Export Prevalence Query*

Description

Saves the results of a `CohortPrevalenceAnalysis` analysis as a .csv.

Usage

```
exportPrevalenceResults(results, outputFolder = NULL)
```

Arguments

`results`	Dataframe: Result of a `generateSinglePrevalence` analysis.
`outputFolder`	Character string specifying the path to the folder where the output files will be saved. If left `NULL`, will default to current working directory (optional).

generateMultiplePrevalence *Run Multiple Prevalence Analyses*

Description

Runs multiple prevalence analysis with a list of specified `CohortPrevalenceAnalysis` settings

Usage

```
generateMultiplePrevalence(prevalenceAnalysisList, executionSettings)
```

Arguments

`prevalenceAnalysisList`	A list `CohortPrevalenceAnalysis` R6 object with analysis settings.
`executionSettings`	An `executionSettings` R6 object with connection and schema details.

Value

A results dataframe with prevalence rates and strata per analysis id.

`generateMultipleRassenIncidence` *Run Multiple Rassen Incidence Analyses*

Description

Runs multiple incidence analysis with a list of specified `IncidenceAnalysis` settings

Usage

```
generateMultipleRassenIncidence(incidenceAnalysisList, executionSettings)
```

Arguments

`incidenceAnalysisList`	A list `IncidenceAnalysis` R6 object with analysis settings.
`executionSettings`	An `executionSettings` R6 object with connection and schema details.

Value

A results dataframe with incidence rates and strata per analysis id.

`generateSinglePrevalence` *Run Single Prevalence Analysis*

Description

Runs a single prevalence analysis with specified `CohortPrevalenceAnalysis` settings

Usage

```
generateSinglePrevalence(prevalenceAnalysisClass, executionSettings)
```

Arguments

`prevalenceAnalysisClass`	A `CohortPrevalenceAnalysis` R6 object with analysis settings.
`executionSettings`	An `executionSettings` R6 object with connection and schema details.

Value

A results dataframe with prevalence rates and strata.

`generateSingleRassenIncidence` *Run Single Incidence Analysis*

Description

Runs a single incidence analysis with specified `IncidenceAnalysis` settings

Usage

```
generateSingleRassenIncidence(incidenceAnalysisClass, executionSettings)
```

Arguments

`incidenceAnalysisClass`	A `IncidenceAnalysis` R6 object with analysis settings.
`executionSettings`	An `executionSettings` R6 object with connection and schema details.

Value

A results dataframe with incidence rates and strata.

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