

Package ‘eq5d’

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Type Package

Title Methods for Analysing 'EQ-5D' Data and Calculating 'EQ-5D' Index Scores

Version 0.17.0

Description EQ-5D is a widely used health-related quality-of-life instrument developed by the EuroQol Group and used in the clinical and economic evaluation of health care. Health is described using five dimensions (mobility, self-care, usual activities, pain/discomfort, and anxiety/depression) rated on either a three-level (EQ-5D-3L and EQ-5D-Y-3L) or five-level (EQ-5D-5L) scale. Responses can be reported as EQ-5D health states or converted to utility index scores using country-specific value sets. The package provides methods for the valuation, reporting and analysis of EQ-5D data. Utility index scores can be calculated for EQ-5D-3L, EQ-5D-5L and EQ-5D-Y-3L data using a wide range of value sets and mapping approaches. Functionality is also provided for descriptive-system reporting, severity and distributional summaries, informativity measures, health-state distribution analysis, longitudinal change analysis, probability of superiority analysis and Health Profile Grid visualisation. Methods described in Devlin et al. (2020) <[doi:10.1007/978-3-030-47622-9](https://doi.org/10.1007/978-3-030-47622-9)> are implemented where appropriate. A companion 'Shiny' application is included for interactive analysis and visualisation of EQ-5D datasets.

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URL <https://github.com/fragla/eq5d>

BugReports <https://github.com/fragla/eq5d/issues>

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CW	<i>EQ-5D-5L Crosswalk data</i>
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Description

Crosswalk index value calculation table to calculate EQ-5D-3L indices from EQ-5D-5L data for Denmark, France, Germany, Japan, Netherlands, Russia, Spain, Thailand, UK, USA and Zimbabwe.

Usage

CW

Format

An object of class `data.frame` with 3125 rows and 13 columns.

Source

van Hout B, Janssen MF, et al. Interim scoring for the EQ-5D-5L: Mapping the EQ-5D-5L to EQ-5D-3L value sets. *Value in Health* 2012 Jul-Aug;15(5):708-15. doi:10.1016/j.jval.2012.02.008. PMID: 22867780.

Bailey H, Roudijk B, Brathwaite R. The EQ-5D-3L valuation study for Bermuda: using an on-line EQ-VT protocol. *Eur J Health Econ.* 2024 Jul 9. doi:10.1007/s10198024017012. Epub ahead of print. PMID: 38982011.

Al Rabayah A, Roudijk B, Purba FD, Rencz F, Jaddoua S, Siebert U. Valuation of the EQ-5D-3L in Jordan. *Eur J Health Econ.* 2024 Sep 3. doi:10.1007/s1019802401712z. Epub ahead of print. PMID: 39225720.

Omelyanovskiy V, Musina N, Ratushnyak S, Bezdenezhnykh T, Fediaeva V, Roudijk B, Purba FD. Valuation of the EQ-5D-3L in Russia. *Qual Life Res.* 2021 Mar 13. doi:10.1007/s1113602102804-6. Epub ahead of print. PMID: 33713323.

EQ-5D-5L Crosswalk Index Value Sets

descriptive_data	<i>Generate descriptive system data for EQ-5D</i>
------------------	---

Description

Creates a tidy data.frame representing the EQ-5D descriptive system, suitable for plotting and tabular presentation. The output contains explicit columns for dimension, level, metric (count or percent), and optional grouping variables.

Usage

```
descriptive_data(
  data,
  version,
  metric = c("percent", "count"),
  group = NULL,
  dimensions = c("MO", "SC", "UA", "PD", "AD"),
  ignore.invalid = TRUE
)
```

Arguments

data	A data.frame containing EQ-5D responses.
version	EQ-5D version ("3L", "5L", or "Y3L").
metric	Character string, one of "percent" (default) or "count".
group	Optional character scalar giving the name of a grouping variable.
dimensions	Character vector of EQ-5D dimension names.
ignore.invalid	Logical; whether to ignore invalid responses.

Details

This function is designed as a canonical internal representation and may be used by plotting and table-generation functions. It does not return Stata-style summary tables; for those see [eq5dds](#).

Value

A tidy data.frame with columns:

- Dimension EQ-5D dimension (MO, SC, UA, PD, AD)
- Level Response level (1, 2, ..., L)
- Value Count or percentage
- Metric Either "count" or "percent"
- Group Group label (if grouping applied)

References

Ramos-Goñi JM, Ramallo-Fariña Y (2016). eq5dds: A command to analyze the descriptive system of the EQ-5D quality-of-life instrument. *The Stata Journal*, 16(3), 691–701. doi:[10.1177/1536867X1601600309](https://doi.org/10.1177/1536867X1601600309)

See Also

[eq5dds](#), [plot_descriptive](#)

Examples

```
## Load example EQ-5D-3L data included with the package
dat <- read.csv(
  system.file("extdata", "eq5d3l_example.csv", package = "eq5d")
)

## Descriptive system for the full sample
dd <- descriptive_data(
  data = dat,
  version = "3L"
)

dd

## Descriptive system stratified by group
dd_group <- descriptive_data(
  data = dat,
  version = "3L",
  group = "Group"
)

dd_group
```

DSU3L

DSU mapping from EQ-5D-3L to EQ-5D-5L

Description

Data for age and sex based mapping from EQ-5D-3L dimensions or utility index score to EQ-5D-5L for China, Germany, Japan, Netherlands, South Korea, Spain and UK.

Usage

```
DSU3L
```

Format

An object of class `data.frame` with 2430 rows and 60 columns.

Source

Hernández Alava M, Pudney S, Wailoo A. Estimating the Relationship Between EQ-5D-5L and EQ-5D-3L: Results from a UK Population Study. *Pharmacoeconomics*. 2023 Feb;41(2):199-207. doi:10.1007/s40273022012187. Epub 2022 Nov 30. PMID: 36449173.

Hernández-Alava M, Pudney S. Econometric modelling of multiple self-reports of health states: The switch from EQ-5D-3L to EQ-5D-5L in evaluating drug therapies for rheumatoid arthritis. *J Health Econ*. 2017 Sep;55:139-152. doi:10.1016/j.jhealeco.2017.06.013. Epub 2017 Jul 4. PMID: 28778350.

NICE DSU mapping website.

DSU5L

DSU mapping from EQ-5D-5L to EQ-5D-3L

Description

Data for age and sex based mapping from EQ-5D-5L dimensions or utility index score to EQ-5D-3L for China, Germany, Japan, Netherlands, South Korea, Spain and UK.

Usage

DSU5L

Format

An object of class `data.frame` with 31250 rows and 60 columns.

Source

Hernández Alava M, Pudney S, Wailoo A. Estimating the Relationship Between EQ-5D-5L and EQ-5D-3L: Results from a UK Population Study. *Pharmacoeconomics*. 2023 Feb;41(2):199-207. doi:10.1007/s40273022012187. Epub 2022 Nov 30. PMID: 36449173.

Hernández-Alava M, Pudney S. Econometric modelling of multiple self-reports of health states: The switch from EQ-5D-3L to EQ-5D-5L in evaluating drug therapies for rheumatoid arthritis. *J Health Econ*. 2017 Sep;55:139-152. doi:10.1016/j.jhealeco.2017.06.013. Epub 2017 Jul 4. PMID: 28778350.

NICE DSU mapping website.

eq5d	<i>Calculate EQ-5D index scores</i>
------	-------------------------------------

Description

Wrapper for eq5d3l, eq5d5l and eq5dy3l. Calculate EQ-5D index scores for EQ-5D-3L, EQ-5D-5L and EQ-5D-Y-3L. Available value sets can be viewed using the function `valuesets`.

Usage

```
eq5d(scores, version, type, country, ignore.invalid, ...)
```

Arguments

<code>scores</code>	numeric or data.frame with names/colnames MO, SC, UA, PD and AD representing Mobility, Self-care, Usual activities, Pain/discomfort and Anxiety/depression. Alternatively EQ-5D scores can be provided in five digit format e.g. 12321. If five digit scores are used in a data.frame the default column name look for by the function is "State".
<code>version</code>	string of value "3L", "5L" or "Y3L" to indicate instrument version.
<code>type</code>	string specifying method type used in deriving value set scores. Options are TTO or VAS for EQ-5D-3L, VT for EQ-5D-5L, CW for EQ-5D-5L crosswalk conversion valuesets, RCW for EQ-5D-3L reverse crosswalk conversion valuesets and DSU for the NICE Decision Support Unit's EEPRU age-sex based EQ-5D-3L to EQ-5D-5L and EQ-5D-5L to EQ-5D-3L mappings. Not required for EQ-5D-Y-3L.
<code>country</code>	string of value set country name used.
<code>ignore.invalid</code>	logical to indicate whether to ignore dimension data with invalid, incomplete or missing data.
<code>...</code>	character vectors for column names when using a data.frame. Use "dimensions" (default <code>c("MO", "SC", "UA", "PD" and "AD")</code>), "five.digit" (default "State") or "utility", "age", "sex" and "bwidth" (defaults "Utility", "Age", "Sex" and "bwidth") for NICE DSU mapping. bwidth can also be a number which is applied to the whole dataset. When a single NICE DSU score is being calculated "age", "sex" and "bwidth" are also used. See eq5dmap for valid options. "digits" can also be used to return scores with more precision.

Value

a numeric vector of utility index scores.

Examples

```
#EQ-5D-5L single utility score by dimension
eq5d(scores=c(MO=1,SC=2,UA=3,PD=4,AD=5), type="VT",
      country="Indonesia", version="5L")
```

```

#EQ-5D-3L single utility score by dimension
eq5d(scores=c(M0=3,SC=2,UA=3,PD=2,AD=3),
      type="TT0", version="3L", country="Germany")

#Mapping an EQ-5D-5L utility score to EQ-5D-3L using NICE DSU method
eq5d(0.922, country="UK", version="5L", type="DSU",
     age=18, sex="male")

#Calculation of multiple EQ-5D-5L utility scores from a data.frame of dimensions
scores.df <- data.frame(
  M0=c(1,2,3,4,5), SC=c(1,5,4,3,2),
  UA=c(1,5,2,3,1), PD=c(1,3,4,3,4), AD=c(1,2,NA,2,1)
)

eq5d(scores.df, country="Canada", version="5L", type="VT", ignore.invalid=TRUE)

#Calculation of a utility score using five digit state
eq5d(scores=12321, type="TT0", version="3L", country="UK")

scores.df2 <- data.frame(
  state=c(11111,12121,23232,33333)
)

#Calculation of utility scores using a data.frame with five digit states
eq5d(scores=scores.df2, type="TT0", version="3L", country="UK", five.digit="state")

#Calculation of utility scores from a vector of five digit states
eq5d(scores=scores.df2$state, type="TT0", version="3L", country="UK")

#Mapping multiple utility scores from EQ-5D-5L to EQ-5D-3L using NICE DSU method
scores.df3 <- data.frame(
  Utility=c(0.715,0.435,0.95),
  Age=c(50,30,70),
  Sex=c("m","f","m"),
  bwidth=c(0.2,0.2,0.1)
)

#using bwidth column values (one per observation)
eq5d(scores.df3, type="DSU", version="5L", country="UK")

#using single bwidth value for whole dataset
eq5d(scores.df3, type="DSU", version="5L", country="UK", bwidth=0.1)

```

Description

Calculate indices for EQ-5D-3L value sets. Available value sets can be viewed using the function `valuesets`.

Usage

```
eq5d3l(scores, type = "TTO", country = "UK", digits = 3)
```

Arguments

<code>scores</code>	numeric with names MO, SC, UA, PD and AD representing Mobility, Self-care, Usual activities, Pain/discomfort and Anxiety/depression.
<code>type</code>	3L values set type. Either TTO or VAS.
<code>country</code>	value set country.
<code>digits</code>	number of decimal places to return.

Value

calculated utility index score.

Examples

```
eq5d3l(scores=c(MO=1,SC=2,UA=3,PD=1,AD=3), type="VAS", country="UK")
eq5d3l(scores=c(MO=3,SC=2,UA=3,PD=2,AD=3), type="TTO", country="Germany")
```

eq5d5l	<i>Calculate EQ-5D-5L index scores</i>
--------	--

Description

Calculate indices for EQ-5D-5L value sets. Available value sets can be viewed using the function `valuesets`.

Usage

```
eq5d5l(scores, country = "England", digits = 3)
```

Arguments

<code>scores</code>	numeric with names MO, SC, UA, PD and AD representing Mobility, Self-care, Usual activities, Pain/discomfort and Anxiety/depression.
<code>country</code>	value set country.
<code>digits</code>	number of decimal places to return.

Value

calculated utility index score.

Examples

```
eq5d5l(scores=c(M0=1,SC=2,UA=3,PD=4,AD=5), country="England")
eq5d5l(scores=c(M0=3,SC=2,UA=5,PD=2,AD=3), country="Netherlands")
```

eq5dcf	<i>Calculate the cumulative frequency distribution of EQ-5D health states</i>
--------	---

Description

Computes the frequency, proportion, and cumulative distribution of EQ-5D health states in a dataset. The function accepts EQ-5D data supplied either as dimension-level columns (MO, SC, UA, PD, AD) or as a single column of five-digit EQ-5D health states.

Usage

```
eq5dcf(scores, version, ignore.invalid = TRUE, digits = 1, ...)
```

Arguments

scores	EQ-5D health states supplied as: • a vector of 5-digit EQ-5D health states (character or numeric), or • a data.frame containing either dimension columns (MO, SC, UA, PD, AD) or a single health-state column named "state" (case-insensitive).
version	Character string identifying the EQ-5D version: one of "3L", "5L", or "Y3L".
ignore.invalid	Logical. If TRUE, invalid health states are replaced with NA. If FALSE, invalid values trigger an error.
digits	Integer specifying the number of decimal places used when rounding percentages. Defaults to 1.
...	Additional arguments reserved for future use.

Details

The output is a tidy data.frame containing frequencies and cumulative proportions, suitable for computing informativity indices (e.g. HSDI) or for plotting Health State Density Curves (HSDC).

Value

A data.frame with one row per observed health state and columns:

- State: EQ-5D health state (five-digit code),
- Frequency: number of observations of the state,
- Proportion: relative frequency of the state,
- CumulativeProp: cumulative proportion of states,
- CumulativeState: cumulative share of distinct states,
- Percentage: percentage frequency,
- CumulativePerc: cumulative percentage.

Examples

```
dat <- read.csv(system.file("extdata", "eq5d3l_example.csv", package="eq5d"))
eq5dcf(dat, "3L")
```

eq5dcw

Calculate EQ-5D-5L crosswalk index scores

Description

Calculate indices for EQ-5D-5L indices by mapping them onto EQ-5D-3L value sets. Available value sets can be viewed using the function `valuesets`.

Usage

```
eq5dcw(scores, country = "UK")
```

Arguments

scores	numeric with names MO, SC, UA, PD and AD representing Mobility, Self-care, Usual activities, Pain/discomfort and Anxiety/depression.
country	value set country.

Value

calculated utility index score.

Examples

```
eq5dcw(scores=c(MO=1,SC=2,UA=5,PD=1,AD=3), country="UK")
eq5dcw(scores=c(MO=3,SC=5,UA=5,PD=2,AD=3), country="Germany")
```

eq5dds

*Analyse the descriptive system of an EQ-5D dataset***Description**

Analyses the descriptive components of an EQ-5D dataset producing summary information either as counts or as percentages.

Usage

```
eq5dds(
  data,
  version,
  counts = FALSE,
  by = NULL,
  ignore.invalid = TRUE,
  digits = 1,
  ...
)
```

Arguments

<code>data</code>	numeric or data.frame with names/colnames MO, SC, UA, PD and AD representing Mobility, Self-care, Usual activities, Pain/discomfort and Anxiety/depression. Alternatively an EQ-5D score can be provided in five digit format e.g. 12321.
<code>version</code>	string of value "3L" or "5L" to indicate instrument version.
<code>counts</code>	logical show absolute counts in the summary table. Default is FALSE, which shows percentages for each EQ-5D dimension.
<code>by</code>	character specifying the column in the data.frame by which to group the results.
<code>ignore.invalid</code>	boolean whether to ignore invalid scores. TRUE returns NA, FALSE throws an error.
<code>digits</code>	Integer specifying the number of decimal places used when reporting percentages. Set to NULL to suppress rounding.
<code>...</code>	character vector, specifying "dimensions" column names. Defaults are "MO", "SC", "UA", "PD" and "AD".

Value

a data.frame or list of data.frames of counts/percentages. Columns contain dimensions names and rows the EQ-5D score.

Examples

```
dat <- data.frame(
  matrix(
    sample(1:3,5*12, replace=TRUE),12,5,
    dimnames=list(1:12,c("MO","SC","UA","PD","AD"))
  ),
  Sex=rep(c("Male", "Female"))
)

eq5dds(dat, version="3L")
eq5dds(dat, version="3L", counts=TRUE)

eq5dds(dat, version="3L", by="Sex")
```

eq5dmap	<i>Calculate utility index scores by mapping between EQ-5D-3L and EQ-5D-5L</i>
---------	--

Description

Conditional prediction of the utility values of 5L scores onto 3L value sets and 3L scores onto 5L value sets from observed or specified values conditional on age and gender using the NICE Decision Support Unit's EEPRU funded models (see [NICE DSU](#)'s website for more information).

Usage

```
eq5dmap(scores, country, version, age, sex, bwidth = 0, digits = 3)
```

Arguments

scores	numeric with names MO, SC, UA, PD and AD representing Mobility, Self-care, Usual activities, Pain/discomfort and Anxiety/depression. or a utility index score
country	value set country. The original DSU mapping used the England EQ-5D-5L value set, available as "England_2018". The newer UK EQ-5D-5L value set is available as "UK_2026". "UK" is retained as an alias for "England_2018". For backwards compatibility, "UK" is treated as an alias for "England_2018".
version	string of value "3L" or "5L" to indicate starting instrument version.
age	age in years (18-100), or age category (1: 18-34, 2: 35-44, 3: 45-54, 4: 55-64, 5: 65-100)
sex	Male or Female
bwidth	bandwidth score for approximate scores (< 0.8: 0.2, 0.8-0.951: 0.1, 0.951-1: small, but large enough to include 1)
digits	number of decimal places to return

Details

Available value sets can be viewed using the function `valuesets`.

Mapping may be performed from either EQ-5D dimension scores or an existing utility index score. When a utility score is supplied, exact lookup is used when `bwidth = 0` (default); otherwise an Epanechnikov kernel smoother is applied. Utility values in the package lookup tables are stored rounded to 3 decimal places, consistent with standard reporting of EQ-5D index scores. Exact lookup is therefore generally intended for utility values reported to 3 decimal places.

Value

calculated utility index score.

Examples

```
eq5dmap(c(MO=1,SC=2,UA=3,PD=4,AD=5), "UK_2026", "5L", 30, "female")
eq5dmap(0.848, "UK_2026", "3L", 70, "male")
eq5dmap(0.715, "England_2018", "5L", 50, "male", bwidth = 0.0001)
eq5dmap(0.715, "England_2018", "5L", 50, "male", bwidth = 0.0001, digits = 8)
```

eq5drcw

Calculate EQ-5D-3L reverse crosswalk index scores

Description

Calculate indices for EQ-5D-3L indices by mapping them onto EQ-5D-5L value sets. Available value sets can be viewed using the function `valuesets`.

Usage

```
eq5drcw(scores, country = "UK", method = "VH", digits = 3)
```

Arguments

<code>scores</code>	numeric with names MO, SC, UA, PD and AD representing Mobility, Self-care, Usual activities, Pain/discomfort and Anxiety/depression.
<code>country</code>	value set country.
<code>method</code>	crosswalk values to use. Either "VH" (Van Hout, 2021) or "EQ" (EuroQol 2019 values). The van Hout method is recommended.
<code>digits</code>	number of decimal places to return.

Value

calculated utility index score.

Examples

```
eq5drcw(scores=c(M0=1,SC=2,UA=3,PD=2,AD=1), country="Netherlands")
eq5drcw(scores=c(M0=3,SC=3,UA=3,PD=3,AD=3), country="Germany")
```

eq5dy	<i>Calculate EQ-5D-Y index scores</i>
-------	---------------------------------------

Description

‘r lifecycle::badge("deprecated")

‘eq5dy‘ was renamed to ‘eq5dy3l‘ to be consistent with the new EuroQol naming convention.

Usage

```
eq5dy(scores, country = NULL)
```

Arguments

scores	numeric with names MO, SC, UA, PD and AD representing Mobility, Self-care, Usual activities, Pain/discomfort and Anxiety/depression.
country	value set country.

Value

calculated utility index score.

eq5dy3l	<i>Calculate EQ-5D-Y-3L index scores</i>
---------	--

Description

Calculate indices for EQ-5D-Y-3L value sets. Available value sets can be viewed using the function `valuesets`.

Usage

```
eq5dy3l(scores, country = NULL, digits = 3)
```

Arguments

scores	numeric with names MO, SC, UA, PD and AD representing Mobility, Self-care, Usual activities, Pain/discomfort and Anxiety/depression.
country	value set country.
digits	number of decimal places to return.

Value

calculated utility index score.

Examples

```
eq5dy3l(scores=c(M0=3,SC=3,UA=3,PD=3,AD=3), country="Slovenia")
```

eq5d_theme	<i>eq5d plotting theme</i>
------------	----------------------------

Description

Default ggplot2 theme matching the academic style used in Methods for Analysing and Reporting EQ-5D Data (Devlin et al., 2020).

Usage

```
eq5d_theme(base_size = 11, base_family = "")
```

Arguments

- base_size Base font size, in points.
- base_family Base font family.

Value

A ggplot2 theme.

get_all_health_states	<i>Get all five digit health state scores</i>
-----------------------	---

Description

Get all five digit health state scores for either EQ-5D-3L, EQ-5D-5L or EQ-5D-Y3L

Usage

```
get_all_health_states(version)
```

Arguments

- version the EQ-5D version. Either 3L or 5L.

Value

A character vector of five digit health states.

Examples

```
get_all_health_states("3L")
get_all_health_states("5L")
get_all_health_states("Y3L")
```

```
get_dimensions_from_health_states
```

Get individual dimension scores from their five digit health states

Description

Get a data.frame of individual dimension scores from their five digit health states.

Usage

```
get_dimensions_from_health_states(  
  scores,  
  version = "5L",  
  ignore.invalid = TRUE  
)
```

Arguments

`scores` a vector of five digit scores

`version` 3L, 5L or Y. Used for validating scores when `ignore.invalid` is FALSE.

`ignore.invalid` whether to ignore invalid scores. TRUE returns NA, FALSE throws an error.

Value

A data.frame of individual dimension scores.

Examples

```
get_dimensions_from_health_states(c("12345", "54321"), version="5L")
```

```
get_health_states_from_dimensions
```

Get five digit health states from dimension scores

Description

Merge MO, SC, UA, PD and AD dimension scores to get five digit health states.

Usage

```
get_health_states_from_dimensions(
  scores,
  version = "5L",
  ignore.invalid = TRUE,
  dimensions = .get_dimension_names()
)
```

Arguments

scores	a data.frame containing each dimension in a column
version	3L, 5L or Y. Used for validating scores when ignore.invalid is FALSE.
ignore.invalid	whether to ignore invalid scores. TRUE returns NA, FALSE throws an error.
dimensions	character vector specifying "dimensions" column names. Defaults are "MO", "SC", "UA", "PD" and "AD".

Value

A character vector of individual dimension scores.

Examples

```
scores <- data.frame(MO=c(1,1,1,1,1),SC=c(1,2,1,2,1),
                     UA=c(1,2,3,2,1),PD=c(3,2,1,2,3),AD=c(3,3,3,3,3))
get_health_states_from_dimensions(scores, version="5L")
```

Description

Computes the Health Profile Grid (HPG) for two sets of EQ-5D health states. The HPG displays pre- and post-intervention utility ranks and the associated PCHC category for each subject.

Two input interfaces are supported:

1. Wide-form input (default method) `hpg(pre, post)` where `pre` and `post` are EQ-5D health states represented either as:

- 5-digit EQ-5D profiles (character or numeric), or
- data.frames with dimension columns M0, SC, UA, PD, AD

2. Long-form input (formula method) `hpg(formula, data)` where the formula has left-hand side forms:

- a single 5-digit EQ-5D profile column
- dimension columns, e.g. `M0 + SC + UA + PD + AD`
- `cbind(M0, SC, UA, PD, AD)`

and right-hand side of the form `time | id`, where:

- `time` is the visit variable
- `id` is the subject identifier

For formula methods the time variable must contain exactly two observable levels unless the user specifies `pre.level` and `post.level`. When not supplied, the ordering of pre- and post-measurements is determined automatically as follows:

- factor time variables use the factor level order
- character or numeric time variables use the order of appearance

Usage

```
hpg(
  pre,
  post = NULL,
  country = NULL,
  version = NULL,
  type = NULL,
  ignore.invalid = TRUE,
  dimensions = NULL,
  pre.level = NULL,
  post.level = NULL,
  no.problems = TRUE,
  data = NULL
)
```

Default S3 method:

```
hpg(
  pre,
```

```

    post,
    country = NULL,
    version = NULL,
    type = NULL,
    ignore.invalid = TRUE,
    dimensions = NULL,
    pre.level = NULL,
    post.level = NULL,
    no.problems = TRUE,
    data = NULL
  )

## S3 method for class 'formula'
hpg(
  formula,
  post = NULL,
  country = NULL,
  version = NULL,
  type = NULL,
  ignore.invalid = TRUE,
  dimensions = NULL,
  pre.level = NULL,
  post.level = NULL,
  no.problems = TRUE,
  data = NULL
)

```

Arguments

<code>pre</code>	For the wide-form interface, pre-intervention EQ-5D values (5-digit profiles or dimension data.frame). For the formula interface, a formula describing EQ-5D variables on the left-hand side and a time variable (and optionally an ID variable) on the right-hand side, e.g. <code>profile ~ visit id</code> .
<code>post</code>	For the wide-form interface, post-intervention EQ-5D values. Ignored for the formula interface.
<code>country</code>	Country name passed to <code>eq5d()</code> .
<code>version</code>	EQ-5D version: "3L", "5L", or "Y3L".
<code>type</code>	EQ-5D valuation method supplied to <code>eq5d()</code> .
<code>ignore.invalid</code>	Logical; if TRUE, invalid EQ-5D values are replaced with NA. If FALSE, invalid values trigger an error.
<code>dimensions</code>	Optional named character vector mapping canonical dimension names (MO, SC, UA, PD, AD) to alternative column names. Only used in formula methods with multiple dimension columns.
<code>pre.level</code>	Optional value of the time variable representing the pre-intervention visit.
<code>post.level</code>	Optional value of the time variable representing the post-intervention visit.
<code>no.problems</code>	Logical; passed to <code>pchc()</code> to classify 11111 -> 11111 transitions as "No problems".

data	Long-form dataset used with the formula interface. Ignored for the wide-form interface.
formula	A formula describing EQ-5D variables on the left-hand side and a time variable (and optionally an ID variable) on the right-hand side, separated by . Used only with the formula interface.

Value

A data.frame with columns:

- **Pre** - severity rank of the pre-intervention utility score
- **Post** - severity rank of the post-intervention utility score
- **PCHC** - individual-level PCHC category

Examples

```
## Not run:
## Load example EQ-5D-3L data included with the package
dat <- read.csv(
  system.file("extdata", "eq5d3l_example.csv", package = "eq5d")
)

## Wide-form usage (illustrative row-wise pairing)
pre <- dat[dat$Group == "Group1", ][1:50, ]
post <- dat[dat$Group == "Group2", ][1:50, ]

res <- hpg(pre, post,
  country = "UK",
  version = "3L",
  type = "TTO")

head(res)

## Long-form usage via formula interface
## (requires data in long format with subject identifiers)

## Using a 5-digit EQ-5D profile column
hpg(profile ~ visit | id, data = df,
  country = "UK", version = "3L", type = "TTO")

## Using EQ-5D dimension columns
hpg(MO + SC + UA + PD + AD ~ visit | id, data = df,
  country = "UK", version = "3L", type = "TTO")

## Explicit time ordering
hpg(profile ~ time | id, data = df, version = "3L",
  pre.level = "baseline",
  post.level = "followup")

## End(Not run)
```

hsdi

*Calculate the Health State Density Index***Description**

Calculate the Health State Density Index (HSDI) for an EQ-5D dataset.

Usage

```
hsdi(scores, version = NULL, ignore.invalid = TRUE, digits = 2, ...)
```

Arguments

scores	scores data.frame, numeric or character. For data.frame default column names should be MO, SC, UA, PD and AD representing Mobility, Self-care, Usual activities, Pain/discomfort and Anxiety/depression. Vector using five digit format can also be used.
version	string of value "3L" or "5L" to indicate instrument version.
ignore.invalid	boolean whether to ignore invalid scores. TRUE returns NA, FALSE throws an error.
digits	numeric specifying the number of decimal places for percentages. Defaults to 1, use NULL to skip rounding.
...	character vector, specifying "dimensions" column names. Defaults are "MO", "SC", "UA", "PD" and "AD".

Value

numeric containing the HSDI value.

Examples

```
## Load example EQ-5D-3L data included with the package
dat <- read.csv(
  system.file("extdata", "eq5d3l_example.csv", package = "eq5d")
)

## Health State Density Index (HSDI)
hsdi(dat, version = "3L")
```

lfs

*Calculate the Level Frequency Score for an EQ-5D profile***Description**

Calculate the Levels Frequency Score for one or more EQ-5D profiles

Usage

```
lfs(scores, version, ignore.invalid, ...)
```

Arguments

scores	EQ-5D health states supplied as: • a named numeric vector of dimension levels (MO, SC, UA, PD, AD), • a 5-digit EQ-5D health state (character or numeric), • a vector of 5-digit health states, • or a data.frame containing either dimension columns or a single health state column.
version	string of value "3L", "5L" or "Y3L" to indicate instrument version.
ignore.invalid	whether to ignore invalid scores. TRUE returns NA, FALSE throws an error.
...	Optional arguments.

dimensions Character vector giving names of EQ-5D dimension columns.

five.digit Name of the column containing 5-digit EQ-5D health states when 'scores' is a data.frame (default: "State"). Matching is case-insensitive.

Value

a character vector of Level Frequency Scores.

Examples

```
lfs(c(MO=1,SC=2,UA=3,PD=2,AD=1), version="3L")
lfs(55555, version="5L")
lfs(c(11111, 12345, 55555), version="5L")
lfs(data.frame(state = c("11111", "12345")), version = "5L")
```

lss

Calculate the Level Sum Score for an EQ-5D profile

Description

Calculate the Levels Sum Score for one or more EQ-5D profiles

Usage

```
lss(scores, version, ignore.invalid, ...)
```

Arguments

scores	EQ-5D health states supplied as: • a named numeric vector of dimension levels (MO, SC, UA, PD, AD), • a 5-digit EQ-5D health state (character or numeric), • a vector of 5-digit health states, • or a data.frame containing either dimension columns or a single health state column.
version	string of value "3L", "5L" or "Y3L" to indicate instrument version.
ignore.invalid	whether to ignore invalid scores. TRUE returns NA, FALSE throws an error.
...	Optional arguments. dimensions Character vector giving names of EQ-5D dimension columns. five.digit Name of the column containing 5-digit EQ-5D health states when 'scores' is a data.frame (default: "State"). Matching is case-insensitive. are "MO", "SC", "UA", "PD" and "AD".

Value

an integer vector of Level Sum Scores.

Examples

```
lss(c(MO=1,SC=2,UA=3,PD=2,AD=1), version="3L")
lss(55555, version="5L")
lss(c(11111, 12345, 55555), version="5L")
```

make_hsdc_by_group	<i>Generate Health State Density Curve (HSDC) data by group</i>
--------------------	---

Description

Computes health-state cumulative frequency distributions separately for each level of a grouping variable and returns a combined data frame suitable for Health State Density Curve (HSDC) plotting.

This function is a lightweight orchestration helper: it performs explicit data splitting and applies [eq5dcf](#) to each subgroup, but does not alter the definition or interpretation of the underlying distributional summaries.

Usage

```
make_hsdc_by_group(data, group, version)
```

Arguments

data	A data.frame containing EQ-5D descriptive-system data.
group	Character scalar specifying the name of the grouping variable in data.
version	EQ-5D instrument version. One of "3L", "5L", or "Y3L".

Value

A data.frame containing cumulative frequency distributions for each group. The returned data are suitable for direct use with [plot_hsdc](#).

See Also

[eq5dcf](#), [hsdi](#), [plot_hsdc](#), [make_hsdi_by_group](#)

Examples

```
dat <- read.csv(
  system.file("extdata", "eq5d3l_example.csv", package = "eq5d")
)

## Grouped HSDC data by treatment group
hsdc_by_group <- make_hsdc_by_group(
  dat,
  group = "Group",
  version = "3L"
)

plot_hsdc(hsdc_by_group)
```

make_hsd_i_by_group	<i>Compute Health State Density Index (HSDI) by group</i>
---------------------	---

Description

Computes the Health State Density Index (HSDI) separately for each level of a grouping variable. This function is a lightweight orchestration helper that performs explicit data splitting prior to computation and does not alter the definition or interpretation of HSDI.

Usage

```
make_hsd_i_by_group(data, group, version)
```

Arguments

data	A data.frame containing EQ-5D descriptive-system data.
group	Character scalar giving the name of the grouping variable in data.
version	EQ-5D instrument version. One of "3L", "5L", or "Y3L".

Value

A named numeric vector of HSDI values, with one entry per group.

See Also

[eq5dcf](#), [hsdi](#), [make_hsd_c_by_group](#)

Examples

```
dat <- read.csv(
  system.file("extdata", "eq5d3l_example.csv", package = "eq5d")
)

## HSDI by group
hsdi_by_group <- make_hsd_i_by_group(
  dat,
  group = "Group",
  version = "3L"
)
```

pchc

*Paretian Classification of Health Change (PCHC)***Description**

Computes the Paretian Classification of Health Change (PCHC) for EQ-5D data. PCHC classifies change between two EQ-5D health states into:

- **Improve**
- **Worsen**
- **No change**
- **Mixed change**
- **No problems** (optional)

The method applied depends on the class of the first argument:

- `pchc.default()` for wide-form data with explicit pre/post states
- `pchc.formula()` for long-form data using a formula interface

Computes the Paretian Classification of Health Change from wide-form EQ-5D data where pre- and post-intervention states are supplied as separate objects.

Computes the Paretian Classification of Health Change from long-form EQ-5D data using a formula interface.

Usage

```
pchc(
  pre,
  post = NULL,
  version = NULL,
  id = NULL,
  pre.level = NULL,
  post.level = NULL,
  duplicates = c("error", "first", "last"),
  no.problems = TRUE,
  totals = TRUE,
  by.dimension = FALSE,
  ignore.invalid = TRUE,
  dimensions = NULL,
  summary = TRUE,
  data = NULL
)
```

Default S3 method:

```
pchc(
  pre,
```

```

    post,
    version = NULL,
    id = NULL,
    pre.level = NULL,
    post.level = NULL,
    duplicates = c("error", "first", "last"),
    no.problems = TRUE,
    totals = TRUE,
    by.dimension = FALSE,
    ignore.invalid = TRUE,
    dimensions = NULL,
    summary = TRUE,
    data = NULL
  )

## S3 method for class 'formula'
pchc(
  formula,
  post = NULL,
  version = NULL,
  id = NULL,
  pre.level = NULL,
  post.level = NULL,
  duplicates = c("error", "first", "last"),
  no.problems = TRUE,
  totals = TRUE,
  by.dimension = FALSE,
  ignore.invalid = TRUE,
  dimensions = NULL,
  summary = TRUE,
  data = NULL
)

```

Arguments

<code>pre</code>	A data.frame of EQ-5D dimensions or a vector of 5-digit EQ-5D profiles.
<code>post</code>	Same format as <code>pre</code> , representing post-intervention states.
<code>version</code>	EQ-5D instrument version: "3L", "5L", or "Y3L".
<code>id</code>	Optional character string naming the subject identifier column when it is not supplied in the formula.
<code>pre.level</code>	Optional value of the time variable identifying the pre-intervention visit. Required when the time variable has more than two levels or when automatic inference would be incorrect.
<code>post.level</code>	Optional value of the time variable identifying the post-intervention visit.
<code>duplicates</code>	How to handle duplicate observations per subject and time point in long-form data. One of "error", "first", or "last".
<code>no.problems</code>	Logical; classify 11111 to 11111 as "No problems".

<code>totals</code>	Logical; include total rows in the summary table.
<code>by.dimension</code>	Logical; compute PCHC separately for each EQ-5D dimension.
<code>ignore.invalid</code>	Logical; if TRUE, invalid or missing values yield NA rows; if FALSE, an error is thrown.
<code>dimensions</code>	Character vector naming EQ-5D dimension columns.
<code>summary</code>	Logical; return summary table or individual classifications.
<code>data</code>	A long-form data.frame used with the formula interface.
<code>formula</code>	A formula specifying EQ-5D variables on the left-hand side and a time variable (and optionally an ID variable) on the right-hand side. This argument is used only in the formula interface.

Details

When `summary = FALSE`, the function returns individual-level PCHC classifications, one per subject. When `summary = TRUE`, it returns a tabular summary reporting counts and percentages by PCHC category, suitable for reporting.

The `totals` argument applies only when `summary = TRUE`; it is ignored otherwise. Missing or invalid EQ-5D values are handled consistently across all methods via the `ignore.invalid` argument.

For formula methods the time variable must contain exactly two observable levels unless the user specifies `pre.level` and `post.level`. When not supplied, the ordering of pre- and post-measurements is determined automatically as follows:

- factor time variables use the factor level order
- character or numeric time variables use the order of appearance

Value

When `summary = FALSE` and `by.dimension = FALSE`, a character vector of individual-level PCHC classifications.

When `summary = TRUE` and `by.dimension = FALSE`, a data.frame summarising PCHC categories with counts and percentages.

When `by.dimension = TRUE`, a named list is returned with one element per EQ-5D dimension. Each element is a character vector (when `summary = FALSE`) or a data.frame (when `summary = TRUE`).

Examples

```
## Load example EQ-5D-3L data included with the package
dat <- read.csv(
  system.file("extdata", "eq5d3l_example.csv", package = "eq5d")
)

## Wide form (explicit pre/post data)
pre <- dat[dat$Group == "Group1", ][1:50, ]
post <- dat[dat$Group == "Group2", ][1:50, ]

pchc(pre, post, version = "3L", no.problems = FALSE, totals = FALSE)
```

```
## Long form (formula interface)
## Not run:
pchc(profile ~ visit | id, data = eq_long)
pchc(M0 + SC + UA + PD + AD ~ visit | id, data = eq_long)

## End(Not run)
```

plot_descriptive	<i>Plot EQ-5D Descriptive System</i>
------------------	--------------------------------------

Description

Creates bar charts summarising the EQ-5D descriptive system by dimension and level using pre-computed descriptive data. Bars representing EQ-5D response levels are displayed side-by-side within each dimension. When grouped data are supplied, separate panels are created using faceting.

Usage

```
plot_descriptive(
  descriptive_data,
  alpha = 1,
  theme = eq5d_theme(),
  xlab = "Dimension",
  ylab = NULL,
  dimension_labels = NULL
)
```

Arguments

descriptive_data	A data.frame produced by descriptive_data .
alpha	Numeric transparency for bars.
theme	A ggplot2 theme, defaults to the internal eq5d_theme().
xlab	Character string for the x-axis label.
ylab	Character string for the y-axis label. If NULL, it is inferred from the Metric column ("Percentage" or "Count").
dimension_labels	Optional named character vector mapping EQ-5D dimension codes (MO, SC, UA, PD, AD) to display labels.

Details

This function performs no analytical computation. It visualises the output of [descriptive_data](#), which serves as the canonical representation of the EQ-5D descriptive system.

The descriptive system summarises the distribution of response levels within each EQ-5D dimension. Bars are shown side-by-side to facilitate comparison across response levels. When grouped

data are supplied, the plot uses faceting to aid comparison across groups while avoiding overplotting and excessive use of colour.

Value

A ggplot object.

References

Ramos-Goñi JM, Ramallo-Fariña Y (2016). eq5dds: A command to analyze the descriptive system of the EQ-5D quality-of-life instrument. *The Stata Journal*, 16(3), 691–701. doi:[10.1177/1536867X1601600309](https://doi.org/10.1177/1536867X1601600309)

See Also

[descriptive_data](#)

Examples

```
## Load example EQ-5D-3L data included with the package
dat <- read.csv(
  system.file("extdata", "eq5d3l_example.csv", package = "eq5d")
)

## Create canonical descriptive data (percentages)
dd <- descriptive_data(dat, version = "3L")

## Basic descriptive system plot
plot_descriptive(dd)

## Grouped descriptive system plot
dd_grp <- descriptive_data(dat, version = "3L", group = "Group")
plot_descriptive(dd_grp)

## Descriptive system using counts
dd_count <- descriptive_data(dat, version = "3L", metric = "count")
plot_descriptive(dd_count)

## Descriptive system with full dimension labels
plot_descriptive(
  dd,
  dimension_labels = c(
    MO = "Mobility",
    SC = "Self care",
    UA = "Usual activities",
    PD = "Pain & Discomfort",
    AD = "Anxiety & Depression"
  )
)
```

plot_hpg

*Plot Health Profile Grid (HPG)***Description**

Visualises paired changes in EQ-5D health states using a Health Profile Grid (HPG). Each point represents an individual pre–post transition in EQ-5D index space, with a diagonal reference line indicating no change.

Usage

```
plot_hpg(
  hpg_data,
  version,
  include_no_problems = TRUE,
  xlab = "Post",
  ylab = "Pre",
  colours = NULL,
  shapes = NULL,
  theme = eq5d_theme()
)
```

Arguments

hpg_data	A data.frame returned by hpg , containing at least the columns Pre, Post, and PCHC.
version	EQ-5D version ("3L", "5L", or "Y3L").
include_no_problems	Logical; if FALSE, transitions corresponding to full health to full health (11111 to 11111) are excluded from the plot. This affects only the visualisation and does not modify the underlying hpg() results.
xlab	Character string giving the x-axis label. Defaults to "Post".
ylab	Character string giving the y-axis label. Defaults to "Pre".
colours	Optional named character vector overriding the default colours for transition classes present in the data.
shapes	Optional named numeric vector overriding the default shapes for transition classes present in the data.
theme	A ggplot2 theme applied to the plot. Defaults to the internal eq5d_theme().

Details

This function is a pure visualisation layer and expects the output of [hpg](#). No analytical computation is performed.

The input to `plot_hpg()` is the result of `hpg()`, which may be generated using paired pre- and post-measurement data (for example as vectors or data frames), or via an alternative formula interface supported by `hpg()`.

Transition classes follow the terminology and ordering used in the reference book: Improve, Mixed change, No change, Worsen, and No problems. Only transition classes present in the plotted data are shown in the legend.

The Health Profile Grid is intended for paired data and illustrates how individuals move between health states over time. Points on the diagonal indicate no change, while points above the diagonal represent improvement and points below the diagonal represent deterioration.

Value

A ggplot object.

References

Devlin N, Parkin D, Janssen B (2020). *Methods for Analysing and Reporting EQ-5D Data*. Springer Open. doi:[10.1007/9783030476229](https://doi.org/10.1007/9783030476229)

See Also

[hpg](#)

Examples

```
## Not run:
res <- hpg(pre, post, country = "UK", version = "3L", type = "TT0")

## Default labels
plot_hpg(res, version = "3L")

## Custom axis labels
plot_hpg(
  res,
  version = "3L",
  xlab = "Post-treatment",
  ylab = "Pre-treatment"
)

## End(Not run)
```

Description

Visualises the distribution of EQ-5D health profiles using the Health State Density Curve (HSDC) as described by Zamora et al (2018) and Devlin et al. (2020) The HSDC plots the cumulative proportion of observed health states against the cumulative proportion of observations, analogous to a Lorenz curve.

Usage

```
plot_hsdc(
  data,
  group = NULL,
  hsd_i = NULL,
  diagonal = TRUE,
  colours = NULL,
  linewidth = 1,
  alpha = 1,
  theme = eq5d_theme(),
  xlab = "Cumulative percentage of observations",
  ylab = "Cumulative percentage of health states"
)
```

Arguments

data	A data.frame containing cumulative distribution data with at least the columns CumulativeProp and CumulativeState, as returned by eq5dcf .
group	Optional character scalar giving the name of a grouping column for plotting multiple HSDCs on the same axes.
hsd_i	Optional numeric value, or named numeric vector for grouped data, giving Health State Density Index (HSDI) values to annotate on the plot.
diagonal	Logical; if TRUE, draw the 45-degree reference line.
colours	Optional named character vector specifying colours for grouped curves.
linewidth	Numeric line width for plotted curves.
alpha	Numeric transparency level for plotted curves.
theme	A ggplot2 theme. Defaults to the internal eq5d_theme().
xlab	Character string for the x-axis label.
ylab	Character string for the y-axis label.

Details

The input data must be a pre-computed cumulative distribution, typically returned by [eq5dcf](#) or [make_hsdc_by_group](#). This function performs no analytical computation; it only visualises the supplied data.

Axes are displayed as cumulative percentages (0–100%). A 45-degree reference line indicates a perfectly even distribution of health states.

Curves that lie close to the diagonal indicate an even distribution of health profiles. Curves that lie further below the diagonal indicate increasing concentration of observations on a small number of health states.

Value

A ggplot object.

References

Zamora B, Parkin D, Feng Y, Bateman A, Herdman M, Devlin N (2018). New methods for analysing the distribution of EQ-5D observations. OHE Research Paper.

Devlin N, Parkin D, Janssen B (2020). *Methods for Analysing and Reporting EQ-5D Data*. Springer Open. doi:[10.1007/9783030476229](https://doi.org/10.1007/9783030476229)

See Also

[eq5dcf](#), [hsdi](#), [make_hsdc_by_group](#)

Examples

```
dat <- read.csv(system.file("extdata", "eq5d3l_example.csv", package = "eq5d"))

cf <- eq5dcf(dat, version = "3L")
plot_hsdc(cf)

## Grouped Health State Density Curves
## Generate cumulative distributions by group
hsdc_grp <- make_hsdc_by_group(dat, group = "Group", version = "3L")

## Compute HSDI by group
hsdi_grp <- make_hsdi_by_group(dat, group = "Group", version = "3L")

## Plot grouped HSDCs with HSDI annotation
plot_hsdc(
  data = hsdc_grp,
  group = "Group",
  hsdi = hsdi_grp
)
```

plot_severity_summary *Plot EQ-5D Severity Summary*

Description

Summarises EQ-5D index values by severity category using the Level Frequency Score (LFS) or Level Sum Score (LSS). For each severity category, the lowest, median, and highest EQ-5D index values are shown using a range marker and horizontal ticks.

Usage

```
plot_severity_summary(  
  data,  
  country,  
  version,  
  type,  
  severity = c("LFS", "LSS"),  
  tick_width = 0.12,  
  theme = eq5d_theme()  
)
```

Arguments

data	A data.frame containing EQ-5D responses.
country	Country value set used for EQ-5D index calculation.
version	EQ-5D version ("3L", "5L", or "Y3L").
type	EQ-5D valuation type.
severity	Severity metric to use; either "LFS" or "LSS".
tick_width	Width of horizontal ticks in severity category units.
theme	A ggplot2 theme applied to the plot. Defaults to the internal eq5d_theme().

Details

This plot corresponds to severity summary figures in the Devlin book, where EQ-5D index values are examined across severity strata rather than plotting severity measures themselves. LFS and LSS are treated as alternative severity definitions and are not plotted together.

Value

A ggplot object.

References

Devlin N, Parkin D, Janssen B (2020). *Methods for Analysing and Reporting EQ-5D Data*. Springer Open. doi:[10.1007/9783030476229](https://doi.org/10.1007/9783030476229)

See Also

[lfs](#), [lss](#), [eq5d](#)

ps

*Probability of Superiority (PS) for EQ-5D***Description**

Computes the Probability of Superiority (PS) for each EQ-5D dimension based on the Paretian Classification of Health Change (PCHC).

PS quantifies whether post-intervention EQ-5D states tend to be superior to pre-intervention states:

$$PS = \frac{\text{Improve} + 0.5 \times \text{No change}}{\text{Total}}$$

Interpretation:

- **PS < 0.5:** deterioration dominates
- **PS = 0.5:** improvement and deterioration balanced
- **PS > 0.5:** improvement dominates

Two interfaces are supported:

1. Wide-form input (default) `ps(pre, post)` where `pre` and `post` are EQ-5D states in 5-digit form or data frames containing EQ-5D dimension columns.

2. Long-form + formula interface `ps(formula, data)` mirroring the interface of `pchc()`.

For formula methods, the time variable must contain exactly two observable levels unless the user specifies `pre.level` and `post.level`. When not supplied, the ordering of pre- and post-measurements is determined automatically as follows:

- factor time variables use the factor level order
- character or numeric time variables use the order of appearance

Computes the Probability of Superiority from wide-form EQ-5D data where pre- and post-intervention states are supplied as separate objects.

Computes the Probability of Superiority from long-form EQ-5D data using a formula interface.

Usage

```
ps(
  pre,
  post = NULL,
  version = NULL,
  ignore.invalid = TRUE,
  dimensions = NULL,
  digits = 2,
  pre.level = NULL,
  post.level = NULL,
  data = NULL
)
```

```
## Default S3 method:
ps(
  pre,
  post,
  version = NULL,
  ignore.invalid = TRUE,
  dimensions = NULL,
  digits = 2,
  pre.level = NULL,
  post.level = NULL,
  data = NULL
)

## S3 method for class 'formula'
ps(
  formula,
  post = NULL,
  version = NULL,
  ignore.invalid = TRUE,
  dimensions = NULL,
  digits = 2,
  pre.level = NULL,
  post.level = NULL,
  data = NULL
)
```

Arguments

<code>pre</code>	For the wide-form interface, pre-intervention EQ-5D states (5-digit character/numeric vector or data frame of EQ-5D dimensions). For the formula interface, a formula describing EQ-5D variables on the left-hand side and a time variable (and optionally an ID variable) on the right-hand side, e.g. <code>profile ~ visit id</code> .
<code>post</code>	For the wide-form interface, post-intervention EQ-5D states. Ignored for the formula interface.
<code>version</code>	EQ-5D instrument version. One of "3L" or "5L".
<code>ignore.invalid</code>	Logical; if TRUE, invalid scores are converted to NA; if FALSE, invalid scores trigger an error.
<code>dimensions</code>	Character vector specifying EQ-5D dimension column names. Defaults to <code>c("M0", "SC", "UA", "PD", "AD")</code> .
<code>digits</code>	Numeric specifying the number of decimal places. Defaults to 2.
<code>pre.level</code>	Optional value identifying the pre-intervention visit in the formula interface.
<code>post.level</code>	Optional value identifying the post-intervention visit in the formula interface.
<code>data</code>	A long-form data frame used with the formula interface. Ignored for the wide-form interface.

formula A formula describing EQ-5D variables on the left-hand side and a time variable (and optionally an ID variable) on the right-hand side, separated by |. Used only with the formula interface.

Value

A named numeric vector (or list) of Probability of Superiority scores by EQ-5D dimension.

Examples

```
dat <- read.csv(system.file("extdata", "eq5d3l_example.csv", package="eq5d"))

## Wide form
pre <- dat[dat$Group=="Group1",][1:50,]
post <- dat[dat$Group=="Group2",][1:50,]
ps(pre, post, version="3L")

## Long form
## Not run:
ps(profile ~ visit | id, data=eq_long)
ps(MO + SC + UA + PD + AD ~ visit | id, data=eq_long)

## End(Not run)
```

RCW

EQ-5D-3L Reverse Crosswalk data (deprecated)

Description

Reverse Crosswalk index value table to calculate EQ-5D-5L indices from EQ-5D-3L data for England, Germany, Netherlands and USA. Table uses the values published on the EuroQol analysis tools webpage based on reverse engineering of van Hout et al (2012)

Usage

```
RCW
```

Format

An object of class `data.frame` with 243 rows and 4 columns.

Source

[Reverse crosswalk datasets](#)

RCWVH

*EQ-5D-3L Reverse Crosswalk data***Description**

Reverse Crosswalk index value table to calculate EQ-5D-5L indices from EQ-5D-3L data using the van Hout et al (2021) method.

Usage

RCWVH

Format

An object of class `matrix` (inherits from `array`) with 243 rows and 50 columns.

Source

[doi:10.1016/j.jval.2021.03.009](https://doi.org/10.1016/j.jval.2021.03.009)

shannon

*Calculate Shannon's Index***Description**

Calculate Shannon's H' (diversity) index, H' max and Shannon's J' (evenness) index for an EQ-5D data set. This can be calculated both by dimension and for health states as a whole.

Usage

```
shannon(
  scores,
  version = NULL,
  by.dimension = TRUE,
  ignore.invalid = TRUE,
  dimensions = NULL,
  base = 2,
  digits = 2,
  permutations = TRUE
)
```

Arguments

scores	data.frame, numeric or character. For data.frame default column names should be MO, SC, UA, PD and AD representing Mobility, Self-care, Usual activities, Pain/discomfort and Anxiety/depression. Vector using five digit format can also be used.
version	string of value "3L" or "5L" to indicate instrument version.
by.dimension	boolean whether to calculate scores by EQ-5D dimensions or for the whole dataset. Defaults to TRUE.
ignore.invalid	boolean whether to ignore invalid scores. TRUE returns NA, FALSE throws an error.
dimensions	character vector, specifying "dimension" column names. Defaults are "MO", "SC", "UA", "PD" and "AD".
base	numeric base of logarithm to use. Defaults to base 2.
digits	numeric specifying the number of decimal places. Defaults to 2.
permutations	boolean whether to use maximum number of permutations for H' max or the number of observed unique profiles. Default is TRUE.

Value

a single list or list of dimensions containing H' H' max and J' scores.

Examples

```
dat <- read.csv(system.file("extdata", "eq5d3l_example.csv", package="eq5d"))

shannon(dat, version="3L", by.dimension=FALSE)
shannon(dat, version="3L", by.dimension=TRUE)
```

shiny_eq5d

Launch shiny EQ-5D interface

Description

shiny_eq5d launches a shiny interface for browser based EQ-5D calculations.

Usage

```
shiny_eq5d(display.mode = "normal")
```

Arguments

display.mode The display mode to be passed to [runApp](#)

Examples

```
## Not run:
shiny_eq5d()
shiny_eq5d(display.mode="normal")

## End(Not run)
```

table_descriptive	<i>Descriptive System Tables for EQ-5D</i>
-------------------	--

Description

Formats EQ-5D descriptive system summaries into publication-ready tables. This function is the reporting-layer companion to [descriptive_data](#), and mirrors the tabular presentation recommended in the EQ-5D reference literature and implemented by the Stata eq5dds command.

Tables contain either percentages or counts, depending on the metric supplied to [descriptive_data](#). No analytical computation is performed by this function.

Usage

```
table_descriptive(dd, digits = 1, include_total = TRUE, group_order = NULL)
```

Arguments

dd	A data.frame returned by descriptive_data , containing the columns Dimension, Level, Value, and Metric. Grouped descriptive data are supported via a Group column.
digits	Integer specifying the number of decimal places used when rounding percentages. Ignored for count tables.
include_total	Logical; if TRUE, include a "Total" row.
group_order	Optional character vector specifying the order in which groups should be displayed when dd contains a Group column. Must match the levels of dd\$Group. If NULL (default), groups are ordered according to the factor levels of Group as produced by descriptive_data .

Details

This function operates on the output of [descriptive_data](#), which returns tidy descriptive-system summaries with one row per Dimension–Level–Metric combination. Values are reshaped into wide tables for reporting.

Counts and percentages are generated via separate calls to [descriptive_data](#), consistent with the presentation in the EQ-5D reference literature.

When descriptive data are grouped, `table_descriptive()` returns a named list of tables, one per group, consistent with the behaviour of eq5dds when used with subgroup reporting.

Value

If descriptive data are ungrouped, a data.frame. If grouped, a named list of data.frames, one per group.

References

Devlin N, Parkin D, Janssen B (2020). *Methods for Analysing and Reporting EQ-5D Data*. Springer Open. doi:[10.1007/9783030476229](https://doi.org/10.1007/9783030476229)

Ramos-Goñi JM, Ramallo-Fariña Y (2016). eq5dds: A command to analyze the descriptive system of the EQ-5D quality-of-life instrument. *The Stata Journal*, 16(3), 691–701.

Examples

```
dat <- read.csv(
  system.file("extdata", "eq5d3l_example.csv", package = "eq5d")
)

dat1 <- subset(dat, Group == "Group1")

## Percentage table
dd_pct <- descriptive_data(dat1, version = "3L", metric = "percent")
table_descriptive(dd_pct)

## Count table
dd_cnt <- descriptive_data(dat1, version = "3L", metric = "count")
table_descriptive(dd_cnt)

## Grouped percentage tables
dd_grp <- descriptive_data(dat, version = "3L", metric = "percent", group = "Group")
table_descriptive(dd_grp)
```

table_ps

*Probability of Superiority Tables***Description**

Formats output from [ps](#) into a tabular representation suitable for reporting.

The function does not compute Probability of Superiority values; it restructures the numeric output of `ps()` into a data.frame with explicit dimension labels.

Usage

```
table_ps(ps_out, digits = 2)
```

Arguments

- ps_out Output from `ps`: a named list of numeric Probability of Superiority values by EQ-5D dimension, or a named list of such lists for grouped output.
- digits Integer specifying the number of decimal places used when rounding PS values. Defaults to 2.

Value

- If `ps_out` is ungrouped, a `data.frame` with columns `Dimension` and `PS`.
- If `ps_out` is grouped, a named list of such `data.frames`.

Examples

```
dat <- read.csv(
  system.file("extdata", "eq5d3l_example.csv", package = "eq5d")
)

pre <- dat[dat$Group == "Group1", ][1:50, ]
post <- dat[dat$Group == "Group2", ][1:50, ]

ps_res <- ps(pre, post, version = "3L")
table_ps(ps_res)
```

TTO	<i>EQ-5D-3L TTO value set data</i>
-----	------------------------------------

Description

Coefficients for the estimation of the EQ-5D-3L index values based on TTO valuation studies for Argentina, Australia, Brazil, Canada, Chile, China, Denmark, Ecuador, France, Germany, Hungary, Italy, Japan, Netherlands (2006), Netherlands (2026), Pakistan, Poland, Portugal, Russia, Singapore, SouthKorea, Spain, SriLanka, Sweden, Taiwan, Thailand, Trinidad and Tobago, Tunisia, UK, USA and Zimbabwe.

Usage

TTO

Format

An object of class `data.frame` with 63 rows and 33 columns.

Source

Szende, A., Oppe, M., & de Charro, F. (2007), Comparative review of Time Trade-Off value sets. In Szende, A., Oppe, M., & Devlin, N. (Ed.), *EQ-5D Value Sets: Inventory, Comparative Review and User Guide* (pp. 27-28). Dordrecht, The Netherlands: Springer.

Janssen, B., Szende, A., & Ramos-Goñi JM. (2014), Data and Methods. Szende, A., Janssen, B., & Cabasés, J. (Ed.), *In Self-Reported Population Health: An International Perspective based on EQ-5D* (p 13). Dordrecht, The Netherlands: Springer.

- **Argentina:** Augustovski FA, Irazola VE, Velazquez AP, Gibbons L, Craig BM. Argentine valuation of the EQ-5D health states. *Value Health*. 2009 Jun;12(4):587-96. doi:10.1111/j.15244733.2008.00468.x. Epub 2008 Nov 12. PMID: 19900257.
- **Australia:** Viney R, Norman R, King MT, Cronin P, Street DJ, Knox S, Ratcliffe J. Time trade-off derived EQ-5D weights for Australia. *Value Health*. 2011 Sep-Oct;14(6):928-36. doi:10.1016/j.jval.2011.04.009. PMID: 21914515.
- **Bermuda:** Bailey H, Roudijk B, Brathwaite R. The EQ-5D-3L valuation study for Bermuda: using an on-line EQ-VT protocol. *Eur J Health Econ*. 2024 Jul 9. doi:10.1007/s10198024-017012. Epub ahead of print. PMID: 38982011.
- **Brazil:** Viegas Andrade M, Noronha K, Kind P, Maia AC, Miranda de Menezes R, De Barros Reis C, Nepomuceno Souza M, Martins D, Gomes L, Nichele D, Calazans J, Mascarenhas T, Carvalho L, Lins C. Societal Preferences for EQ-5D Health States from a Brazilian Population Survey. *Value Health Reg Issues*. 2013 Dec;2(3):405-412. doi: 10.1016/j.vhri.2013.01.009. Epub 2013 Mar 13. Erratum in: *Value Health Reg Issues*. 2016 Dec;11:85-87. doi:10.1016/j.vhri.2016.12.001. PMID: 29702778.
- **Canada:** Bansback N, Tsuchiya A, Brazier J, Anis A. Canadian valuation of EQ-5D health states: preliminary value set and considerations for future valuation studies. *PLoS One*. 2012;7(2):e31115. doi:10.1371/journal.pone.0031115. Epub 2012 Feb 6. PMID: 22328929.
- **Chile:** Zarate V, Kind P, Valenzuela P, Vignau A, Olivares-Tirado P, Munoz A. Social valuation of EQ-5D health states: the Chilean case. *Value Health*. 2011 Dec;14(8):1135-41. doi:10.1016/j.jval.2011.09.002. Epub 2011 Nov 6. PMID: 22152184.
- **China:** Liu GG, Wu H, Li M, Gao C, Luo N. Chinese time trade-off values for EQ-5D health states. *Value Health*. 2014 Jul;17(5):597-604. doi:10.1016/j.jval.2014.05.007. Epub 2014 Jul 23. PMID: 25128053.
- **Denmark:** Wittrup-Jensen KU, Lauridsen J, Gudex C, Pedersen KM. Generation of a Danish TTO value set for EQ-5D health states. *Scand J Public Health*. 2009 Jul;37(5):459-66. doi:10.1177/1403494809105287. Epub 2009 May 1. PMID: 19411320.
- **Ecuador:** Lucio R, Flores V, Granja M, Mata G. Resultados de la encuesta de valoración social de los estados de salud de la Años de vida ajustados por calidad (QALY'S). 2019. [Link](#)
- **France:** Chevalier J, de Pouvourville G. Valuing EQ-5D using time trade-off in France. *Eur J Health Econ*. 2013 Feb;14(1):57-66. doi:10.1007/s101980110351x. Epub 2011 Sep 21. PMID: 21935715.
- **Germany:** Greiner W, Claes C, Busschbach JJ, von der Schulenburg JM. Validating the EQ-5D with time trade off for the German population. *Eur J Health Econ*. 2005 Jun;6(2):124-30. doi:10.1007/s101980040264z. PMID: 19787848.
- **Hungary:** Rencz F, Brodszky V, Gulácsi L, Golicki D, Ruzsa G, Pickard AS, Law EH, Péntek M. Parallel Valuation of the EQ-5D-3L and EQ-5D-5L by Time Trade-Off in Hungary.

Value Health. 2020 Sep;23(9):1235-1245. doi:10.1016/j.jval.2020.03.019. Epub 2020 Aug 12. PMID: 32940242.

- **Italy:** Scalone L, Cortesi PA, Ciampichini R, Belisari A, D'Angiolella LS, Cesana G, Mantovani LG. Italian population-based values of EQ-5D health states. Value Health. 2013 Jul-Aug;16(5):814-22. doi:10.1016/j.jval.2013.04.008. Epub 2013 Jun 19. PMID: 23947975.
- **Japan:** Tsuchiya A, Ikeda S, Ikegami N, Nishimura S, Sakai I, Fukuda T, Hamashima C, Hisashige A, Tamura M. Estimating an EQ-5D population value set: the case of Japan. Health Econ. 2002 Jun;11(4):341-53. doi:10.1002/hec.673. PMID: 12007165.
- **Jordan:** Al Rabayah A, Roudijk B, Purba FD, Rencz F, Jaddoua S, Siebert U. Valuation of the EQ-5D-3L in Jordan. Eur J Health Econ. 2024 Sep 3. doi:10.1007/s1019802401712z. Epub ahead of print. PMID: 39225720.
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- **Netherlands (2026):** Roudijk B, Jonker MF. Revisiting health state preferences after 20 years: A new EQ-5D-3L value set for the Netherlands. Eur J Health Econ. 2026 Jan 12. doi:10.1007/s10198025018922. PMID: 41525009.
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- **Poland:** Golicki D, Jakubczyk M, Niewada M, Wrona W, Busschbach JJ. Valuation of EQ-5D health states in Poland: first TTO-based social value set in Central and Eastern Europe. Value Health. 2010 Mar-Apr;13(2):289-97. doi:10.1111/j.15244733.2009.00596.x. Epub 2009 Sep 10. PMID: 19744296.
- **Portugal:** Ferreira LN, Ferreira PL, Pereira LN, Oppe M. The valuation of the EQ-5D in Portugal. Qual Life Res. 2014 Mar;23(2):413-23. doi:10.1007/s111360130448z. Epub 2013 Jun 8. PMID: 23748906.
- **Russia:** Omelyanovskiy V, Musina N, Ratushnyak S, Bezdenezhnykh T, Fediaeva V, Roudijk B, Purba FD. Valuation of the EQ-5D-3L in Russia. Qual Life Res. 2021 Mar 13. doi:10.1007/s11136021028046. Epub ahead of print. PMID: 33713323.
- **Singapore:** Luo N, Wang P, Thumboo J, Lim YW, Vrijhoef HJ. Valuation of EQ-5D-3L health states in Singapore: modeling of time trade-off values for 80 empirically observed health states. Pharmacoeconomics. 2014 May;32(5):495-507. doi:10.1007/s4027301401421. PMID: 24519603.
- **Spain:** Badia X, Roset M, Herdman M, Kind P. A comparison of United Kingdom and Spanish general population time trade-off values for EQ-5D health states. Med Decis Making. 2001 Jan-Feb;21(1):7-16. doi:10.1177/0272989X0102100102. PMID: 11206949.
- **South Korea:** Lee YK, Nam HS, Chuang LH, Kim KY, Yang HK, Kwon IS, Kind P, Kweon SS, Kim YT. South Korean time trade-off values for EQ-5D health states: modeling with observed values for 101 health states. Value Health. 2009 Nov-Dec;12(8):1187-93. doi:10.1111/j.15244733.2009.00579.x. Epub 2009 Jul 29. PMID: 19659703.
- **Sri Lanka:** Kularatna S, Whitty JA, Johnson NW, Jayasinghe R, Scuffham PA. Valuing EQ-5D health states for Sri Lanka. Qual Life Res. 2015 Jul;24(7):1785-93. doi:10.1007/s11136-01409062. Epub 2014 Dec 28. PubMed PMID: PMID: 25543271.

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- **Taiwan:** Lee HY, Hung MC, Hu FC, Chang YY, Hsieh CL, Wang JD. Estimating quality weights for EQ-5D (EuroQol-5 dimensions) health states with the time trade-off method in Taiwan. *J Formos Med Assoc.* 2013 Nov;112(11):699-706. doi:10.1016/j.jfma.2012.12.015. Epub 2013 Feb 12. PMID: 24183199.
- **Thailand:** Tongsiri S, Cairns J. Estimating population-based values for EQ-5D health states in Thailand. *Value Health.* 2011 Dec;14(8):1142-5. doi:10.1016/j.jval.2011.06.005. PMID: 22152185.
- **Trinidad and Tobago:** Bailey H, Stolk E, Kind P. Toward Explicit Prioritization for the Caribbean: An EQ-5D Value Set for Trinidad and Tobago. *Value Health Reg Issues.* 2016 Dec;11:60-67. doi:10.1016/j.vhri.2016.07.010. PMID: 27986200.
- **Tunisia:** Chemli J, Drira C, Felfel H, Roudijk B, Al Sayah F, Kouki M, Kooli A, Razgallah Khrouf M. Valuing health-related quality of life using a hybrid approach: Tunisian value set for the EQ-5D-3L. *Qual Life Res.* 2021 Jan 14. doi:10.1007/s1113602002730z. Epub ahead of print. PMID: 33447958.
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- **USA:** Shaw JW, Johnson JA, Coons SJ. US valuation of the EQ-5D health states: development and testing of the D1 valuation model. *Med Care.* 2005 Mar;43(3):203-20. doi:10.1097/0000565020050300000003. PMID: 15725977.
- **Zimbabwe:** Jelsma J, Hansen K, De Weerd W, De Cock P, Kind P. How do Zimbabweans value health states? *Popul Health Metr.* 2003 Dec 16;1(1):11. doi:10.1186/14787954111. PMID: 14678566.

valuesets

Get the available EQ-5D value sets.

Description

valuesets returns a data.frame of the available EQ-5D value sets in the eq5d package.

Usage

```
valuesets(
  type = NULL,
  version = NULL,
  country = NULL,
  references = c("PubMed", "DOI", "ISBN", "ExternalURL")
)
```

Arguments

type	string EQ-5D value set type. TTO or VAS for EQ-5D-3L, VT for EQ-5D-5L, IVP (International Valuation Protocol of Ramos-Goñi et al (2020)) for EQ-5D-Y-3L, CW for EQ-5D-5L crosswalk conversion dataset, or DSU for NICE Decision Support Unit's EQ-5D-5L to EQ-5D-3L and EQ-5D-3L to EQ-5D-5L mappings.
version	string either 3L, 5L or Y3L.
country	string one of the countries for which there is a value set.
references	character vector of reference columns. One or more of PubMed, DOI, ISBN or ExternalURL. Default is all. Reference columns can be removed by setting argument to NULL.

Value

A data.frame containing the EQ-5D version, the value set type and country, along with PubMed IDs, DOIs, ISBNs and external URLs where available.

Examples

```
valuesets()
valuesets(type="TTO")
valuesets(version="5L")
valuesets(country="UK")
valuesets(version="Y3L", references=c("DOI", "PubMed"))
```

VAS	<i>EQ-5D-3L VAS value set data</i>
-----	------------------------------------

Description

Coefficients for the estimation of the EQ-5D-3L index values based on VAS valuation studies for Belgium, Denmark, Europe, Finland, Germany, Iran, Malaysia, New Zealand, Slovenia, Spain and UK.

Usage

```
VAS
```

Format

An object of class data.frame with 21 rows and 11 columns.

Source

Oppe, M., Szende, A., & de Charro, F. (2007), Comparative review of Visual Analogue Scale value sets. In Szende, A., Oppe, M., & Devlin, N. (Ed.), *EQ-5D Value Sets: Inventory, Comparative Review and User Guide* (pp. 37-38). Dordrecht, The Netherlands: Springer.

- **Belgium:** Cleemput I. A social preference valuations set for EQ-5D health states in Flanders, Belgium. *Eur J Health Econ.* 2010 Apr;11(2):205-13. doi:10.1007/s1019800901670. Epub 2009 Jul 7. PMID: 19582490.
- **Denmark:** Wittrup-Jensen KU, Lauridsen JT, Gudex C, Brooks R, Pedersen KM. Estimating Danish EQ-5D tariffs using TTO and VAS. In: Norinder A, Pedersen K, Roos P, editors. *Proceedings of the 18th Plenary Meeting of the EuroQol Group.* 2001. Copenhagen, Denmark. IHE, The Swedish Institute for Health Economics, 2002: 257-292.
- **Europe:** Greiner W, Weijnen T, Nieuwenhuizen M, et al. A single European currency for EQ-5D health states. Results from a six country study. *Eur J Health Econ* 2003; 4(3):222-231.
- **Finland:** Ohinmaa, A., & Sintonen, H. (1998, October). Inconsistencies and modelling of the Finnish EuroQol (EQ-5D) preference values. In *EuroQol Plenary Meeting* (pp. 1-2). Health Economics and Health System Research, University of Hannover.
- **Germany:** Claes, C., Greiner, W., Uber, A., & Graf von der Schulenburg, J. M. (1999). An interview-based comparison of the TTO and VAS values given to EuroQol states of health by the general German population. In *Proceedings of the 15th Plenary Meeting of the EuroQol Group.* Hannover, Germany: Centre for Health Economics and Health Systems Research, University of Hannover (pp. 13-38).
- **Iran:** Goudarzi R, Zeraati H, Akbari Sari A, Rashidian A, Mohammad K. Population-Based Preference Weights for the EQ-5D Health States Using the Visual Analogue Scale (VAS) in Iran. *Iran Red Crescent Med J.* 2016 Feb 13;18(2):e21584. doi:10.5812/ircmj.21584. PMID: 27186384.
- **Malaysia:** Yusof FA, Goh A, Azmi S. Estimating an EQ-5D value set for Malaysia using time trade-off and visual analogue scale methods. *Value Health.* 2012 Jan-Feb;15(1 Suppl):S85-90. doi:10.1016/j.jval.2011.11.024. PMID: 22265073.
- **New Zealand:** Devlin NJ, Hansen P, Kind P, Williams A. Logical inconsistencies in survey respondents' health state valuations – a methodological challenge for estimating social tariffs. *Health Econ.* 2003 Jul;12(7):529-44. doi:10.1002/hec.741. PMID: 12825206.
- **Slovenia:** Prevolnik Rupel V, Rebolj M. The Slovenian VAS Tariff based on valuations of EQ-5D health states from the general population. In: Cabasés JM, Gaminde I, editors. *Proceedings of the 17th Plenary Meeting of the EuroQol Group.* Universidad Pública de Navarra 2001; 23-47.
- **Spain** Badia X, Roset M, Monserrat S, Herdman M. The Spanish VAS tariff based on valuation of EQ-5D health states from the general population. In: Rabin RE et al, editors. *EuroQol Plenary meeting Rotterdam 1997, 2-3 October. Discussion papers.* Centre for Health Policy & Law, Erasmus University, Rotterdam, 1998; 93-114
- **UK** MVH Group. The Measurement and Valuation of Health. Final report on the modeling of valuation tariffs. York Centre for Health Economics, 1995.

VT

*EQ-5D-5L VT value set data***Description**

EQ-5D-5L VT value set calculation data for Australia, Belgium, Canada, China, Denmark, Egypt, England, Ethiopia, France, Germany, Ghana, HongKong, Hungary, India, Indonesia, Iran, Ireland, Italy, Japan, Malaysia, Mexico, Morocco, Netherlands, NewZealand, Norway, Peru, Philippines, Poland, Portugal, Romania, SaudiArabia, Slovenia, SouthKorea, Spain, Sweden, Taiwan, Thailand, Uganda, UAE, Uruguay, USA, Vietnam and Western Preference Pattern (WePP).

Usage

VT

Format

An object of class `data.frame` with 37 rows and 50 columns.

Source

- **Australia:** Norman R, Mulhern B, Lancsar E, Lorgelly P, Ratcliffe J, Street D, Viney R. The Use of a Discrete Choice Experiment Including Both Duration and Dead for the Development of an EQ-5D-5L Value Set for Australia. *Pharmacoeconomics*. 2023 Jan 31. doi:10.1007/s40273023012430. Epub ahead of print. PMID: 36720793.
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Y3L

EQ-5D-Y-3L value set data

Description

EQ-5D-Y-3L value set calculation data for Australia, Belgium, Brazil, China, Germany, Hungary, Indonesia, Japan, Netherlands, Slovenia and Spain.

Usage

Y3L

Format

An object of class `data.frame` with 14 rows and 13 columns.

Source

- **Australia:** Pan T, Roudijk B, Devlin N, Mulhern B, Norman R. An Australian Value Set for the EQ-5D-Y-3L. *Health Qual Life Outcomes*. 2025 Jul 15;23(1):72. doi:10.1186/s12955-02502402x. PMID: 40660259.
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