Package ‘tmpm’

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Type Package
Title Trauma Mortality Prediction Model
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Description Trauma Mortality prediction for ICD-9, ICD-10, and AIS lexicons in long or wide format based on Dr. Alan Cook's tmpm mortality model.
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LazyData TRUE
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marcTable

marcTable, default Lexicon for tmpm 1.0.3

Description

A data.frame containing the master lexicon for the tmpm package. Contains the index of ais, ICD-9, and ICD-10 trauma codes as well as their respective marc weights within the tmpm model separated by body region.
Usage
     marcTable

Format
     A data frame with 10767 observations on the following 4 variables.
     
     lexi  The trauma code lexicon, a factor with levels ais icdIX icdX.
     index  A unique index value for each entry, a factor with 10767 levels.
     marc  Marc weights used in the tmpm model. A numeric vector
     bodyregion  Body region where the injury occurred. A factor with levels 1 2 3 4 5 6 7 8 9 A C E F H S

References

Examples

     #  lexi  index  marc  bodyregion
     #1  ais 110099  -0.06503967  1
     #2  ais 110202   0.13577652  1
     #3  ais 110402   0.06703821  1
     #4  ais 110600   0.12536530  1
     #5  ais 110602  -0.01852628  1
     #6  ais 110604   0.27072704  1

Description
     An R port for the tmpm trauma mortality prediction model using the ICD-9, ICD-10, or AIS lexicon in long or wide format. Based upon the tmpm package created by Alan Cook, MD for STATA

Usage
     tmpm(Pdat,ILex = 1,ICs = marcTable,Long = FALSE)
**Arguments**

**Pdat**
An R object, usually a `data.frame`. May come in either a wide or long format. Patient ID’s must be present in the first column, followed by the diagnosis column(s) that contain diagnosis codes in either the ICD-9, ICD-10, or AIS lexicon. The wide format may have multiple Dx columns for each patient containing their respective diagnosis codes while the long format should contain 3 columns of patient ID, Dx, and diagnosis code.

**ILex**
An integer value used to select which lexicon to use for the tmpm analysis. AIS is the default lexicon and may be selected by the entry of 1. The ICD-9 lexicon may be selected by 9, and the ICD-10 may be selected 10.

**ICs**
An R object, usually a `data.frame`. The "master" diagnosis lexicon that may contain the diagnosis codes for the ICD-9, ICD-10, and AIS lexicons. This is already included and will default to the object marctable if no other object is specified. Must contain 4 columns containing the lexicon, index, corresponding marc value, and body region value.

**Long**
A logical object. Allows the user to specify the format of the Pdat object. Default is wide format. Long = TRUE must be specified to analyze data of long format.

**Value**

The tmpm algorithm will return a `data.frame` that contains the original dataset in wide format with an added last column containing the calculated probability of death for each patient.

**Note**

Uses the Trauma Mortality prediction model created by Turner Osler, MD, MSc and Laurent Glance, MD.

Based upon the tmpm package written in STATA by Alan Cook, MD

**Author(s)**

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Alan Cook, MD

**References**


**Examples**

```r
## To evaluate ICD-9 patient data in wide format
inc_key dx1 dx2 dx3 dx4
```
```r
#1 10000007 821.11 822 815.03 823.00
#2 10011410 881.00 891 822.10 813.42

a <- data.frame(matrix(c(10000007,821.11,822,815.03,823,
                           10011410,881.00,891,822.1,813.42),nrow = 2,byrow = TRUE))
names(a) <- c("inc_key","dx1","dx2","dx3","dx4")
b <- tmpm(a,9)

## If the dataset is in long format

#inc_key variable value
#1 10000007 dx1 821.11
#2 10011410 dx1 881.00
#3 10000007 dx2 822.00
#4 10011410 dx2 891.00
#5 10000007 dx3 815.03
#6 10011410 dx3 822.10
#7 10000007 dx4 823.00
#8 10011410 dx4 813.42
c <- melt(a,id = "inc_key")
d <- tmpm(c,9,Long = TRUE)
```
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