Package 'MiaoCom'

October 8, 2021

Type Package

Title An R package for calculating comorbidity indexes for epidemiologists

Version 0.3.0

Maintainer Miao Cai <miao.cai@outlook.com>

Description A R package for calculating comorbidity indexes using ICD-10 coded administrative health records (i.e. Charlson Comorbidity Index, Elixhauser Comorbidity Index, and C3 Index) for epidemiologists.

License MIT + file LICENSE

Encoding UTF-8

LazyData true

RoxygenNote 7.1.1

Suggests knitr, rmarkdown, testthat

VignetteBuilder knitr

Imports dplyr, magrittr

Author Miao Cai [aut, cre]

R topics documented:

`c3` *To calculate the c3 Comobidity Index (targeted at cancer patients)*

Description

This file aims to calculate the c3 Comobidity Index.

Usage

```
c3(data, comorbidity)
```

Arguments

data	Your data file in which Elixhauser Comorbidity Index is to be calculated
comorbidity	A vector of all comorbidity variables

Value

data: a new data.frame named "data". This data frame contains a new variable "c3": the c3 Index was developed by Sarfati et al. in 2014. This is a comorbidity index targeted at cancer patients.

Note

This C3 index is used specifically for cancer patients.

Author(s)

Miao Cai <email: miao.cai@outlook.com>

References

Sarfati, D., et al., Cancer-specific administrative data-based comorbidity indices provided valid alternative to Charlson and National Cancer Institute Indices. J Clin Epidemiol, 2014. 67(5): p. 586-95

Sarfati, D., Developing new comorbidity indices for cancer populations using administrative data. 2013, University of Otago: Dunedin. <Dr. Sarfati's doctoral dissertation>

---

cci *cci()*

Description

This file aims to calculate the Charlson Comorbidity index(1985 orginal version and the 2011 Quan version)

Usage

```
cci(data, comorbidity, age)
```

Arguments

data	Your data file in which Charlson Comorbidity index is to be calculated
comorbidity	A vector of all comorbidity variables
age	The name of the age variable

Details

To calculate the Charlson Comorbidity index ("cci_1987" 1987 orginal version and cci_2011 the 2011 Quan version) "cci_1987": The Charlson Comorbidity index, developed by Mary E. Charlson in 1987. "cci_2011": The Charlson Comorbidity index, updated by Hude Quan in 2011.

Value

data: a new data.frame named "data". This data frame contains two new variables: "cci_1987" & "cci_2011"

Author(s)

Miao Cai <email: miao.cai@outlook.com>

References

Charlson, M. E., Pompei, P., Ales, K. L., & MacKenzie, C. R. (1987). A new method of classifying prognostic comorbidity in longitudinal studies: development and validation. Journal of chronic diseases, 40(5), 373-383.

Quan, H., Sundararajan, V., Halfon, P., Fong, A., Burnand, B., Luthi, J. C., ... & Ghali, W. A. (2005). Coding algorithms for defining comorbidities in ICD-9-CM and ICD-10 administrative data. Medical care, 1130-1139.

Quan, H., Li, B., Couris, C. M., Fushimi, K., Graham, P., Hider, P., ... & Sundararajan, V. (2011). Updating and validating the Charlson comorbidity index and score for risk adjustment in hospital discharge abstracts using data from 6 countries. American journal of epidemiology, 173(6), 676-682.

`eci` *To calculate the Elixhauser Comorbidity Index*

Description

This file aims to calculate the Elixhauser Comorbidity Index.

Usage

```
eci(data, comorbidity)
```

Arguments

`data`	Your data file in which Elixhauser Comorbidity Index is to be calculated
`comorbidity`	A vector of all comorbidity variables

Value

data: a new data.frame named "data". This data frame contains a new variable "Elix_Index": The Elixhauser Comorbidity Index, developed by Anne Elixhauser in 1998

Note

The Elixhauser Comorbidity Index does not include age as a component of the index.

Author(s)

Miao Cai <email: miao.cai@outlook.com>

References

Elixhauser, A., Steiner, C., Harris, D. R., & Coffey, R. M. (1998). Comorbidity measures for use with administrative data. Medical care, 36(1), 8-27.

van Walraven, C., Austin, P. C., Jennings, A., Quan, H., & Forster, A. J. (2009). A modification of the Elixhauser comorbidity measures into a point system for hospital death using administrative data. Medical care, 626-633.

Quan, H., Sundararajan, V., Halfon, P., Fong, A., Burnand, B., Luthi, J. C., ... & Ghali, W. A. (2005). Coding algorithms for defining comorbidities in ICD-9-CM and ICD-10 administrative data. Medical care, 1130-1139.

Index