

Package ‘memapp’

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Version 2.15

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Title The Moving Epidemic Method Web Application

Description The Moving Epidemic Method, created by T Vega and JE Lozano (2012, 2015) <[doi:10.1111/j.1750-2659.2012.00422.x](https://doi.org/10.1111/j.1750-2659.2012.00422.x)>, <[doi:10.1111/irv.12330](https://doi.org/10.1111/irv.12330)>, allows the weekly assessment of the epidemic and intensity status to help in routine respiratory infections surveillance in health systems. Allows the comparison of different epidemic indicators, timing and shape with past epidemics and across different regions or countries with different surveillance systems. Also, it gives a measure of the performance of the method in terms of sensitivity and specificity of the alert week. 'memapp' is a web application created in the Shiny framework for the 'mem' R package.

Depends R (>= 4.0.0)

Imports shiny, shinydashboard, shinyWidgets, shinyBS, shinyjs, RColorBrewer, tidyr, dplyr, stringr, stringi, DT, formattable, ggplot2, plotly, mem (>= 2.17)

Suggests openxlsx, readxl, foreign, haven, readODS, RODBC, magick, animation

License GPL (>= 2)

URL <https://github.com/lozalojo/memapp>

BugReports <https://github.com/lozalojo/memapp/issues>

Encoding UTF-8

RoxygenNote 7.1.2

NeedsCompilation no

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R topics documented:

flucyl	2
flucylraw	3
runmemapp	4

Index	6
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flucyl	<i>Castilla y Leon influenza crude rates</i>
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Description

This data set contains *Influenza Like Illness* (ILI) rates, in cases per 100,000 inhabitants collected by the *Influenza Surveillance Programme* of the **Castilla y Leon Health Sentinel Network** (CyLHSN) from 2001 to 2008.

Usage

```
data(flucyl)
```

Format

A data frame with 33 observations on 8 variables. Each observation is one surveillance week, and each variable is an influenza season.

2001/2002 a numeric vector - 2001/2002 rates per 100,000 inhabitants.
 2002/2003 a numeric vector - 2002/2003 rates per 100,000 inhabitants.
 2003/2004 a numeric vector - 2003/2004 rates per 100,000 inhabitants.
 2004/2005 a numeric vector - 2004/2005 rates per 100,000 inhabitants.
 2005/2006 a numeric vector - 2005/2006 rates per 100,000 inhabitants.
 2006/2007 a numeric vector - 2006/2007 rates per 100,000 inhabitants.
 2007/2008 a numeric vector - 2007/2008 rates per 100,000 inhabitants.
 2008/2009 a numeric vector - 2008/2009 rates per 100,000 inhabitants.

Details

The **Castilla y Leon Health Sentinel Network** is a spanish regional influenza surveillance system based upon volunteer health professionals. The *Influenza Surveillance Programme* consists on a random sample of general practitioners (covering 30,000 population) which collect ILI cases weekly from 40th week (October) to 20th week (May) of the following year to provide estimations of the ILI weekly rate for the entire region.

The data set contains 8 surveillance seasons, from 2001/2002 to 2008/2009.

Source

Influenza Surveillance Programme. Castilla y Leon Health Sentinel Network. Consejeria de Sanidad. Junta de Castilla y Leon 2001-2008.

References

Castilla y Leon Health Sentinel Network Reports (Informes de la Red Centinela Sanitaria de Castilla y Leon).

Influenza Surveillance Programme (Programa de vigilancia de la gripe).

<https://www.saludcastillayleon.es/profesionales/es/centinelas>

Examples

```
data(flucyl)
plot(flucyl[,1], type="l")
```

flucylraw

Castilla y Leon influenza standarised rates

Description

This data set contains *Influenza Like Illness* (ILI) rates, in cases per 100,000 inhabitants collected by the *Influenza Surveillance Programme* of the **Castilla y Leon Health Sentinel Network** (CyLHSN) from 2001 to 2008.

Usage

```
data(flucylraw)
```

Format

A data frame with 267 observations on 2 variables. Each observation is one surveillance week and rate,

year a numeric vector - year.

week a numeric vector - week.

rates a numeric vector - standarised rates per 100,000 inhabitants.

Details

The **Castilla y Leon Health Sentinel Network** is a spanish regional influenza surveillance system based upon volunteer health professionals. The *Influenza Surveillance Programme* consists on a random sample of general practitioners (covering 30,000 population) which collect ILI cases weekly from 40th week (October) to 20th week (May) of the following year to provide estimations of the ILI weekly rate for the entire region.

The data set contains 8 surveillance seasons, from 2001/2002 to 2008/2009.

Source

Influenza Surveillance Programme. Castilla y Leon Health Sentinel Network. Consejeria de Sanidad. Junta de Castilla y Leon 2001-2008.

References

Castilla y Leon Health Sentinel Network Reports (Informes de la Red Centinela Sanitaria de Castilla y Leon).

Influenza Surveillance Programme (Programa de vigilancia de la gripe).

<https://www.saludcastillayleon.es/profesionales/es/centinelas>

Examples

```
data(flucylraw)
plot(flucylraw$rates, type="l")
```

runmemapp

The Moving Epidemics Method Shiny Web Application

Description

Function runmemapp is used start the memapp Shiny Web Application.

memapp is a web application created to serve as a graphical user interface for the R mem library. It was created using Shiny, a web application framework for R. This application uses the development version of the mem R library.

Usage

```
runmemapp(launch.browser = TRUE, ...)
```

Arguments

launch.browser whether if you want to launch the app in an external browser.

... other parameters passed to shiny::runApp.

Details

Input data is a data frame containing rates that represent historical influenza surveillance data. It can start and end at any given week (typically at week 40th), and rates can be expressed as per 100,000 inhabitants (or per consultations, if population is not available) or any other scale.

Parameters sent to the mem R library are set in the application itself.

Author(s)

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References

- Vega Alonso, Tomas, Jose E Lozano Alonso, Raul Ortiz de Lejarazu, and Marisol Gutierrez Perez. 2004. Modelling Influenza Epidemic: Can We Detect the Beginning and Predict the Intensity and Duration? *International Congress Series, Options for the Control of Influenza V. Proceedings of the International Conference on Options for the Control of Influenza V*, 1263 (June): 281-83. doi:10.1016/j.ics.2004.02.121.
- Vega, Tomas, Jose Eugenio Lozano, Tamara Meerhoff, Rene Snacken, Joshua Mott, Raul Ortiz de Lejarazu, and Baltazar Nunes. 2013. Influenza Surveillance in Europe: Establishing Epidemic Thresholds by the Moving Epidemic Method. *Influenza and Other Respiratory Viruses* 7 (4): 546-58. doi:10.1111/j.1750-2659.2012.00422.x.
- Vega, Tomas, Jose E. Lozano, Tamara Meerhoff, Rene Snacken, Julien Beaute, Pernille Jorgensen, Raul Ortiz de Lejarazu, et al. 2015. Influenza Surveillance in Europe: Comparing Intensity Levels Calculated Using the Moving Epidemic Method. *Influenza and Other Respiratory Viruses* 9 (5): 234-46. doi:10.1111/irv.12330.
- Lozano, Jose E. mem R package: First version of the MEM R library [Internet]. Valladolid, Spain: Foundation Institute of Health Sciences Studies of Castilla y Leon; 2014. Available from: <https://cran.r-project.org/web/packages/mem/index.html>
- Lozano, Jose E. lozalojo/mem: Second release of the MEM R library. Zenodo [Internet]. [cited 2017 Feb 1]; Available from: <https://zenodo.org/record/165983>

Examples

```
library("memapp")
if (interactive()) runmemapp(launch.browser = TRUE)
```

Index

* **datasets**

flucyl, 2

flucylraw, 3

* **influenza**

runmemapp, 4

flucyl, 2

flucylraw, 3

runmemapp, 4