

Package ‘asymptor’

December 14, 2020

Title Estimate Asymptomatic Cases via Capture/Recapture Methods

Version 1.0

Description Estimate the lower and upper bound of asymptomatic cases in an epidemic using the capture/recapture methods from Böhning et al. (2020) <doi:10.1016/j.ijid.2020.06.009> and Rocchetti et al. (2020) <doi:10.1101/2020.07.14.20153445>.

License GPL-3

URL <https://bisaloo.github.io/asymptor/>,
<https://github.com/bisaloo/asymptor>

BugReports <https://github.com/bisaloo/asymptor/issues>

Depends R (>= 3.5)

Suggests covr, ggplot2, knitr, rmarkdown, spelling, testthat(>= 3.0.0)

VignetteBuilder knitr

Encoding UTF-8

Language en-GB

RoxygenNote 7.1.1.9000

Config/testthat/edition 3

NeedsCompilation no

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Repository CRAN

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R topics documented:

estimate_asympto	2
Index	3

estimate_asympto	<i>Estimate the proportion of asymptomatic cases by capture/recapture</i>
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Description

Estimate the proportion of asymptomatic cases by capture/recapture

Usage

```
estimate_asympto(date, cases, deaths, bounds = c("lower", "upper"))
```

Arguments

date	A vector containing the dates
cases	A numeric vector containing the number of new cases at each date (not the cumulative number of cases).
deaths	A numeric vector containing the number of new deaths at each date (not the cumulative number of cases).
bounds	"lower", "upper", or both c("lower", "upper") (the default), telling which bounds of the number of asymptomatic cases are computed. associated with the lower and upper bounds. estimation. FALSE is never the recommended setting excepted for testing or debugging purpose.

Value

A data.frame with two or three columns (depending on the value of the bounds argument):

- date: the original date column
- lower: the lower bound of asymptomatic cases
- upper: the upper bound of asymptomatic cases

References

Böhning D., Rocchetti I., Maruotti A., Holling H. (2020), Estimating the undetected infections in the Covid-19 outbreak by harnessing capture–recapture methods, International Journal of Infectious Diseases, 97, p197-201, doi: [10.1016/j.ijid.2020.06.009](https://doi.org/10.1016/j.ijid.2020.06.009).

Rocchetti I., Böhning D., Holling H., Maruotti A., (2020), Estimating the size of undetected cases of the SARS-CoV-2 outbreak in Europe: An upperbound estimator, medRxiv, doi: [10.1101/2020.07.14.20153445](https://doi.org/10.1101/2020.07.14.20153445).

Examples

```
d <- readRDS(system.file("extdata", "covid19_italy.rds", package = "asymptor"))
head(d)

estimate_asympto(d$date, d$new_cases, d$new_deaths)
```

Index

`estimate_asympto`, [2](#)