

# RSV attributable mortality in Portugal between 2014 and 2018

AP Rodrigues<sup>a</sup>, S Silva<sup>a</sup>, R Guiomar<sup>b</sup>, P Pechirra<sup>b</sup>, P Cristóvão<sup>b</sup>, B Nunes<sup>a</sup>

<sup>a</sup>Epidemiology Department; <sup>b</sup>National Influenza and Other Respiratory Viruses Reference Laboratory, Infectious Diseases Department

National Institute of Health Doctor Ricardo Jorge, Lisbon, Portugal

Instituto Nacional de Saúde  
Doutor Ricardo Jorge



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## Background

Respiratory Syncytial Virus (RSV) has been recognized as a serious pathogen in at-risk adult populations (long-term care facilities, immunocompromised). In adults, RSV infection is usually mild, but its effect on morbidity and mortality in adults can be substantial as has been previously reported (1). Given RSV has a similar seasonality pattern as influenza virus it is plausible that RSV circulation had contributed to excess all-cause mortality observed during previous winters in Portugal. This study aimed to estimate RSV attributable all-cause mortality between 2014/15 and 2017/18 autumn-winter seasons in Portugal.

## Results

**All-cause excess mortality was observed during 2014/15, 2016/17 and 2017/18 autumn-winter seasons in Portugal.** RSV might explained, in those seasons and for all ages, respectively, 12%, 8% and 9% of the observed mortality above the expected during the referred periods (Figure 1).

For all age groups **under 65 years old, RSV attributed mortality was higher than influenza attributable mortality in 2014/15, 2015/16 and 2016/17** seasons, although for the 5-14 years old age-group RSV attributable mortality was not statistically significant in any season.

**Above 65 years, RSV had lower impact in all-cause mortality than Influenza in almost all studied seasons.** Only in 2015/16, when influenza activity was very low with A(H1N1)pdm09 dominance, RSV attributable mortality was higher than Influenza attributable mortality in this age group.

## Conclusions

During autumn-winter seasons, RSV infections presented impacts in all-cause mortality in Portugal. Those findings should be accounted on mortality surveillance systems during the autumn-winter season. However, the low number of deaths in younger age-groups impose precaution in results interpretation.

Authors had nothing to disclose. **Contact:** ana.rodrigues@insa.min-saude.pt

## Material and Methods

Influenza and RSV incidence data (as Goldstein index) were collected by National Influenza Surveillance System and mortality data from Portuguese Mortality Surveillance System. Both systems are under coordination of National Health Institute Doutor Ricardo Jorge. Temperatures were downloaded from the National Oceanic and Atmospheric Administration Online Climate Data Directory.

An adaptation of FluMOMO model, developed on EuroMOMO network (2), was used to estimate RSV attributable mortality during last 4 autumn-winter seasons using data from W40/2014 to W20/2018 (available data at 22<sup>nd</sup> of June 2018).

Analysis was performed for all ages and specifically for 0-4 years, 5-14 years, 15-64 years and 65 years and more. Non-disaggregated data on Influenza and RSV were used for all age groups.

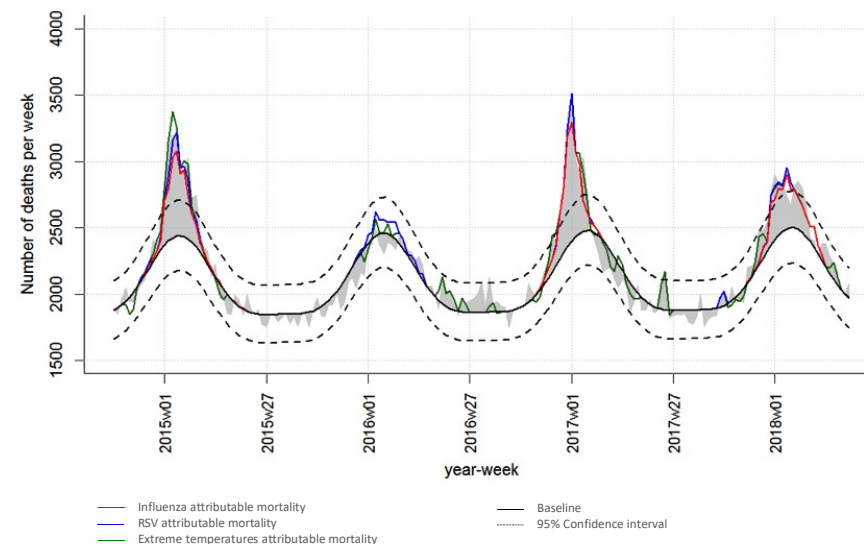


Figure 1. All-cause mortality in all ages between W40/2014 and W20/2018.

## References

1. Van Asten L, van den Wijngaard CC, van Pelt W, et al. Mortality attributable to 9 common infections: significant effect of influenza A, respiratory syncytial virus, influenza B, norovirus, and parainfluenza in elderly persons. *J Infect Dis*. 2012;206:628-639.
2. European monitoring of excess mortality for public health action (EuroMOMO). <http://www.euromomo.eu>. Accessed June 20, 2018.