

# Impact of influenza vaccination strategy on medically attended influenza in Portugal in five pre-pandemic seasons (2015/16 to 2019/20)

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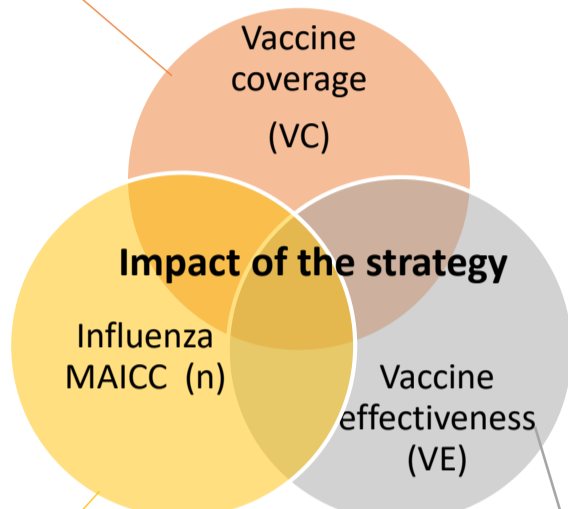
## BACKGROUND

There is limited research on the impact of the seasonal influenza vaccination programs in the eligible population. This study aimed to estimate the number of primary care medically attended influenza-confirmed cases (MAICC) among the population aged ≥65 years averted by influenza vaccination programme in Portugal during five seasons in the pre-COVID pandemic period (2015/16 to 2019/20).

## METHODS

Observational retrospective ecologic study

Community dwelling, self-reported, telephone survey



Influenza Illness (ILI) - Sentinel surveillance (Rede Medicos Sentinela) Positivity rate, influenza type/subtype - (National Influenza Reference Laboratory)

I-MOVE subtype-specific VE's, weighted by the proportion of circulating virus subtypes in Portugal

NAE: Number of averted events

$$NAE = n * \left( \frac{VC * VE}{1 - VC * VE} \right)$$

PF: Prevented fraction

$$PF = NAE / (NAE + n)$$

NNV: Number of vaccinations needed to avoid one influenza outcome

$$NNV = Pop / (VE * (NAE + n))$$

Uncertainty

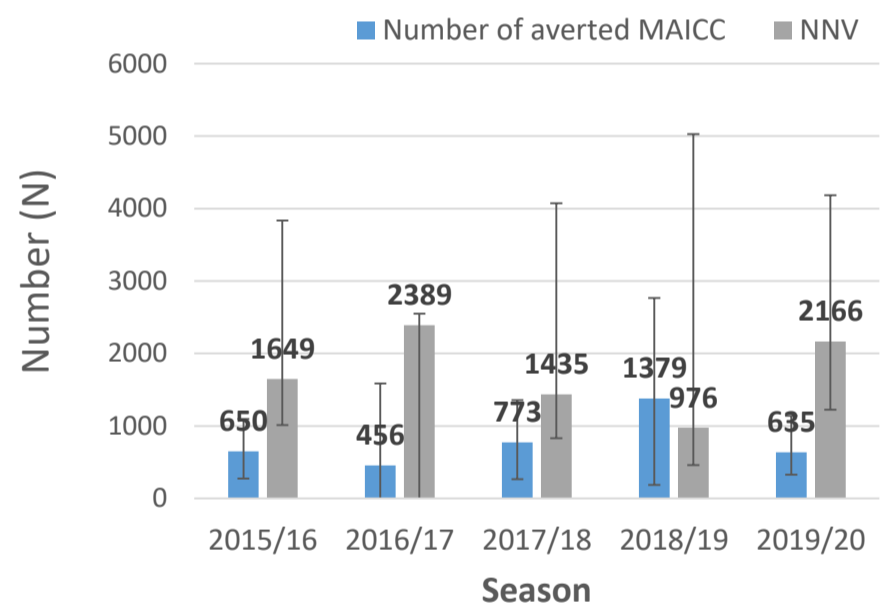
Monte-Carlo simulations to estimate 95% uncertainty intervals (UI)

## RESULTS

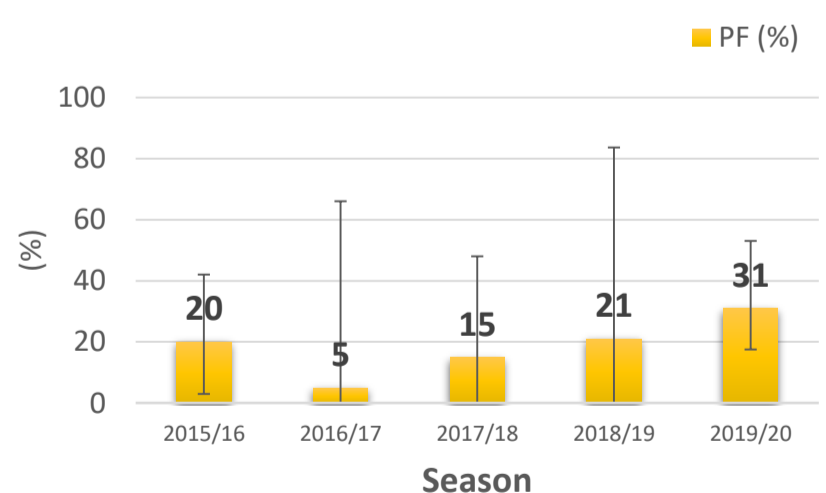
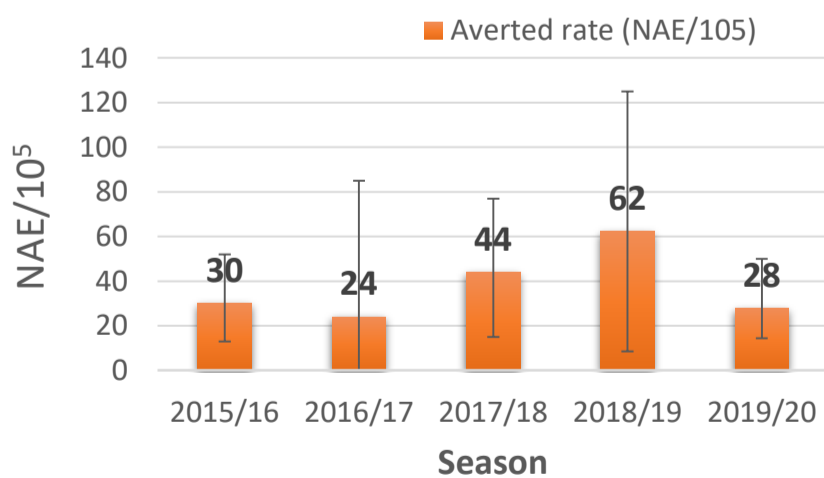
In the analysed seasons, different influenza virus circulated/dominated in the country (Table 1).

Season	2015/16	2016/17	2017/18	2018/19	2019/20
Influenza Virus	AH1N1	AH3	B/AH1N1/AH3	AH3/AH1N1	B/AH1N1

Comparing with results from 2015/16 to 2017/18 (NAE ranged 24 to 44 per 100.000 inhab) the season 2018/19 showed the highest NAE (62.3 per 100.000 inhab) attributed to the influenza vaccination programme.



NNV to prevent one MAICC during the observation period ranged between 976 and 2389, being the highest in season with predominant AH3 circulation.



## CONCLUSIONS

The influenza vaccination strategy had consistent and positive benefit, with more pronounced impact in 2018/19 season. This results were mainly due to a combination of a higher vaccination coverage assumed for 2018/19 (60.8%) and one of the highest vaccine effectiveness (34.8% vs. previous study range 8.5% to 40.6%). To maximize its impact, efforts should be conducted to increase the vaccine coverage. In addition, the surge for more effective vaccines should be maintained.

## REFERENCES:

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- Machado A, Mazagatos C, Dijkstra F, et al. Impact of influenza vaccination programmes among the elderly population on primary care, Portugal, Spain and the Netherlands: 2015/16 to 2017/18 influenza seasons. *EuroSurveillance*. 2019;24(45):1900268. doi:10.2807/1560-7917.ES.2019.24.45.1900268