

## The effect of COVID-19 epidemic on the incidence of community-acquired pneumonia in the elderly

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### Background:

Since the outbreak of COVID-19 has raged, large-scale measures for prevent disease transmission have been implemented worldwide. If effectively implemented, these measures may have led to a reduction of the spread of other respiratory infectious diseases at community level. The aim of the present study was to evaluate the indirect impact of COVID-19 large-scale containment measures on the incidence of community-acquired pneumonia (CAP) in the elderly during the first epidemic wave of COVID-19 in Tuscany, Italy.

### Methods:

A population based study was carried out on data from the Tuscany healthcare system. Hospitalization rate for CAP, severity of CAP hospitalizations, and outpatient consumptions of antibacterials for CAP in people aged 65 years and older were considered as outcome measures. Percentage changes in the outcome measures were calculated considering corresponding periods of the 2020 and 2017-19. 95% confidence intervals and the statistical significance of the percentage changes were calculated using the Poisson model.

### Results:

A total of 3,346 new CAP hospitalizations occurred in people aged 65 years and older in the whole study time-frame. Significant reductions in the weekly hospitalization rates for CAP were observed starting from the week in which the national containment measures were imposed, this negative deviation continued even after the lift of the national lock-down until the end of the first wave of COVID-19 in July (maximum weekly decrease of 46%). All the antibacterial classes for CAP showed a significant decrease in their outpatient consumptions during the COVID-19 epidemic period.

### Conclusions:

The implementation of large-scale COVID-19 containment measures likely reduced the incidence of CAP in the elderly during the first wave of COVID-19 pandemic. Furthermore, findings suggests that individual prevention measures that remained mandatory after the lift of the national lock-down also had a relevant role in the reducing CAP incidence.

### Key messages:

- The potential benefits of pandemic containment measures can extend beyond the prevention of COVID-19 to include the reduction of the burden of respiratory infectious diseases

- Taking into account the indirect impact of pandemic containment measures on respiratory tract infections may improve the planning of health services during a pandemic.