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PREVIOUS EXPOSURE TO NATURAL INFECTION MATTERS

NATIONAL INSTITUTE FOR HEALTH AND WELFARE

The effect of influenza A infection in 2016/17 on influenza A and B infection in 2017/18 in the Finnish elderly
DISCLOSURE

- Conflict of Interest
  - None

- Project Funding
  - Integrated Monitoring of Vaccines in Europe (I-MOVE+)
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  - Development of Robust and Innovative Vaccines Effectiveness (DRIVE)
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- Travel Grant
  - Funding Initiative at ESCAIDE 2018
What happened to the more than 7000 elderly 2016/17 influenza A cases in the following season?

BACKGROUND

- Register-based cohort studies to estimate influenza vaccine effectiveness
- Acquired active immunity
  - Artificial through vaccination
  - Natural through infection
- Exposure to natural infection very difficult to cover in large-scale observational studies
REGISTER-BASED COHORT STUDY

- Elderly aged 65-100 years
- Laboratory-confirmed influenza A in 2016/17
- Laboratory-confirmed influenza A or B in 2017/18
- Influenza vaccinations 2012/13-2017/18
- Potential confounders

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2017/18 INFLUENZA EPIDEMIC

The effect of influenza A infection in 2016/17 on influenza A and B infection in 2017/18 in the Finnish elderly
TIME-TO-EVENT ANALYSIS

- Comparison of the influenza A, influenza B respectively, hazard rates in those who had a laboratory-confirmed influenza A infection in 2016/17 with the corresponding hazard rates in the rest of the cohort

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Hazard ratio* (95% confidence interval)</th>
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<tbody>
<tr>
<td>Influenza A</td>
<td>0.20 (0.12; 0.33)</td>
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<tr>
<td>Influenza B</td>
<td>2.48 (2.10; 2.93)</td>
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* adjusted for age, sex, presence of chronic diseases, number of hospitalisations in 2016, influenza vaccination in 2017/18 and five previous seasons
INTERPRETATION AND DISCUSSION

- Residual immunity against influenza A
- Replacement towards influenza B
- Increased frailty of previous season’s influenza A cases
- Impact on vaccine effectiveness estimates

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