EPH194

Productivity Costs Due to Respiratory Infections in Denmark: A Potential for Prophylaxis

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BACKGROUND

- Respiratory infections are defined as influenza, RSV, covid-19 and pneumonia
- In Denmark, 49,060 cases of respiratory infections were diagnosed during the 2024/2025 season, including infections caused by influenza, RSV and covid-19[1]
- Respiratory infections may cause productivity loss and thereby incur a heavy financial burden on businesses during the winter season
- Limited data exist on productivity loss and costs due to acute respiratory infections such as influenza, covid-19, respiratory syncytial virus (RSV), and pneumonia

OBJECTIVE

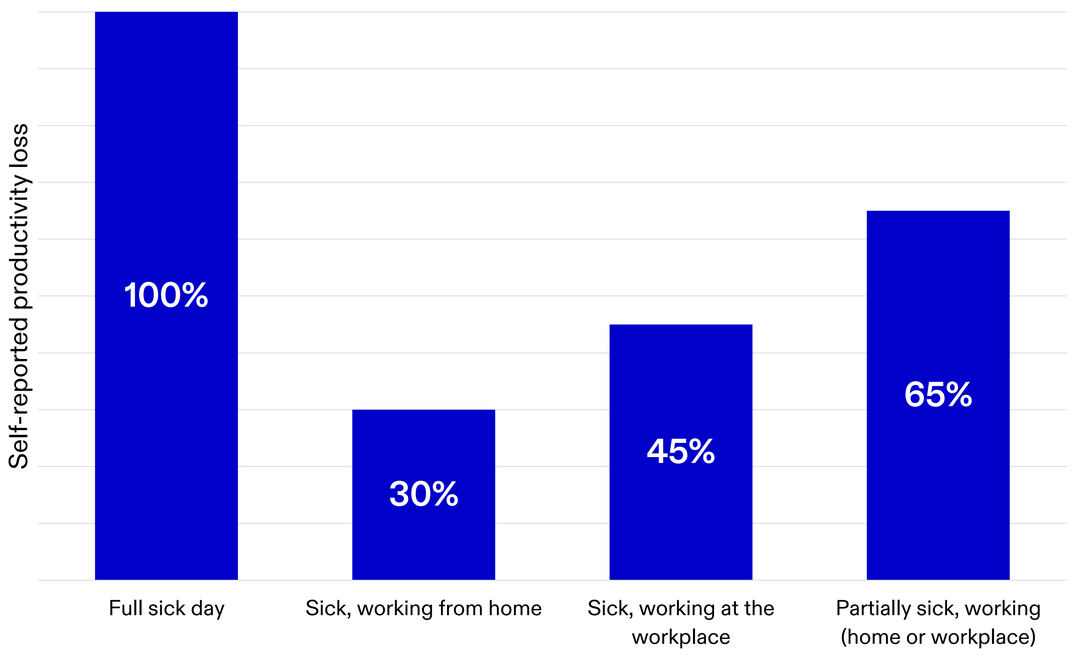
- This study aimed to assess the productivity costs, specifically absenteeism and presenteeism, related to infection with acute respiratory infections, in private mid-sized companies in Denmark

METHODS

STUDY DESIGN AND DATA SOURCES

- The study was designed as a questionnaire survey. The questionnaire was developed specifically for this study
- Survey data was collected from 3,000 individual respondents (1,000 per month) employed in Danish private mid-size companies (50+ employees), representing 10 industries categorized into 5 job types
- Data was collected through online survey interviews, conducted between January and March 2025
- Respondents self-reported the number of sick days per month and their estimated productivity loss on different types of sick days (e.g., full sick days vs. working while ill)
- To estimate the annual total productivity costs in Denmark, the following were applied using data from Statistics Denmark:
  - Mean salary: EUR 6,200[2]
  - Population: 2,0190,213 full-time employees aged 20-66 years [3]
- Productivity costs were calculated as = *Average productivity loss* x population x *mean salary*

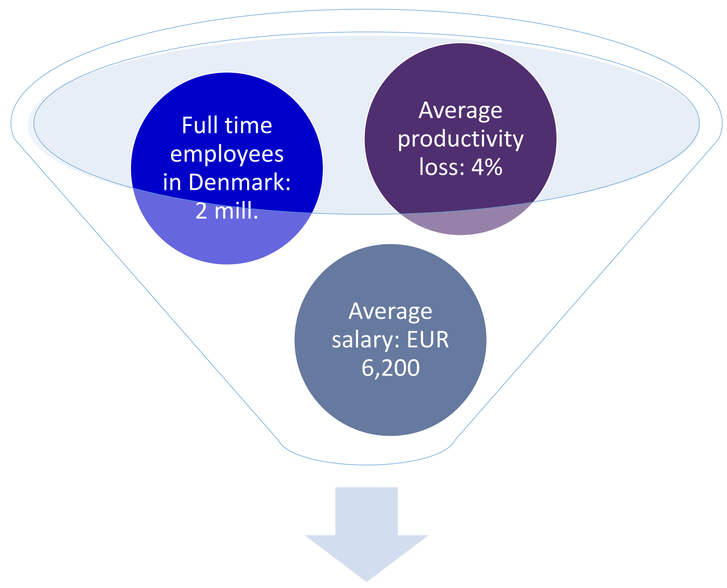
Figure 1. Productivity loss by type of sick day



RESULTS

- Of the surveyed employees, 33% were vaccinated, of which were vaccinated against influenza (29%), covid-19 (14%), RSV (2%), and pneumonia (2%)
- The average productivity loss was estimated as 4% (ranging from 3.4% to 5.9% depending on job type)
- Self-reported productivity loss varied by type of sick day (see Figure 1)
- The average productivity loss of 4% translates to a societal cost of approximately EUR 520 million per month among full-time employees aged 20-66
- Over the three-month winter period (Jan-Mar), this amounts to a total cost of EUR 1,6 billion
- Sensitivity analysis shows that the total cost for the three-month winter period ranges from EUR 1,3 billion to EUR 2,3 billion, depending on the level of productivity loss (3.4% - 5.9%)

Figure 2. Annual productivity costs in Denmark



STRENGHTS AND LIMITATIONS

- Broad representation: The study includes a wide sample of Danish employees working in private mid-size companies
- Limited time frame: Data were collected over a three-month period only, which may lead to an underestimation of the total productivity costs during the full winter season
- Self-Reported Data: The survey relies on self-reported health information, which may be subject to recall bias and affect data accuracy
- Independent monthly samples: Each month includes a new sample of respondents, meaning the study does not follow the same individuals over time

CONCLUSIONS

- Acute respiratory infections during the winter months results in a significant economic burden due to productivity loss from both absenteeism and presenteeism
- A broader focus on prevention by vaccination can potentially reduce the burden of disease substantially, to the benefit of both individuals, employers, and society

REFERENCES

1: SSI. Integrated surveillance of respiratory infections in 2024/25 – consolidated report.. 2025. 2: Statistics Denmark. (2025). *LONS50: Earnings by sector, industry, occupation, age and sex*. StatBank Denmark. https://www.statbank.dk/LONS50 3: Statistics Denmark. (2025). *RAS305: Employed salary earners (end November) by area of workplace, sector, extent of working time, age and sex.* StatBank Denmark. https://www.statbank.dk/RAS305

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CONFLICTS OF INTEREST

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