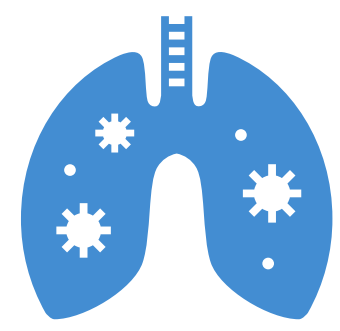


Labour productivity impact of respiratory infections in the Netherlands

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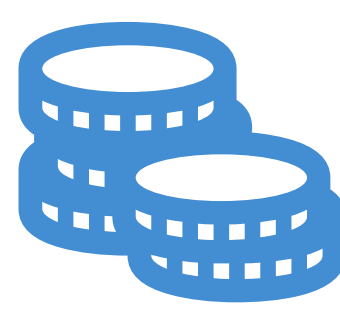
Introduction



Respiratory infections significantly burden health-care systems ¹. Vaccines for conditions like influenza and RSV are available, but coverage among healthy working adults is low. Winter seasons see a rise in absenteeism due to acute respiratory infections (ARI), leading to productivity losses and workforce pressure. Vaccinating healthy adults could reduce sickness leave and secure labour productivity in the Netherlands.



Currently, there is a lack of comprehensive data concerning absenteeism resulting from respiratory infectious diseases and its economic impact, as well as how vaccines may influence the productivity losses.



We aim to estimate the size of sickness leave in The Netherlands, related to respiratory infections and the potential for respiratory vaccines to reduce this burden.

Methods

The general approach chosen here concerns the linkage of:

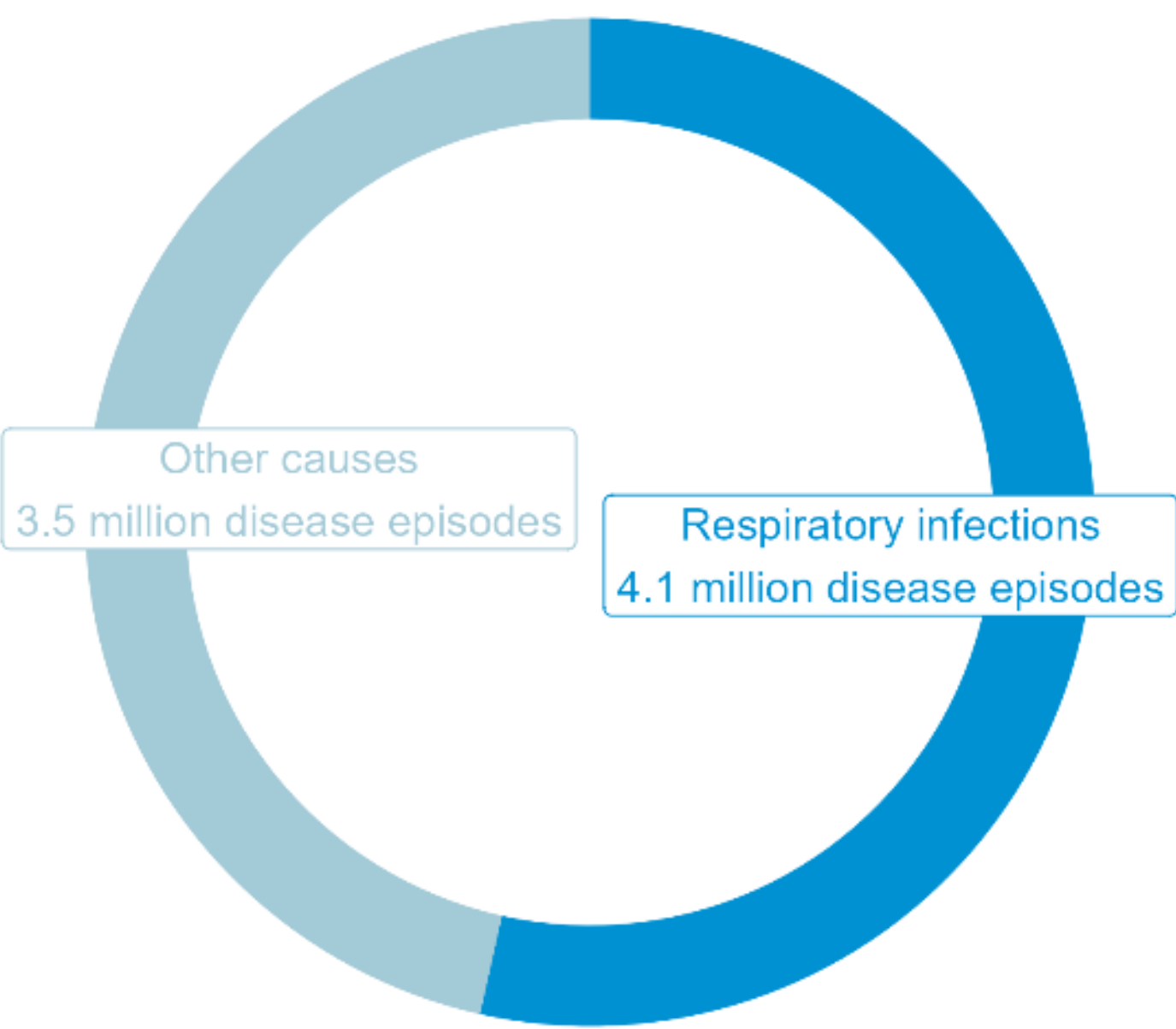
1. national registration on sickness leave incidence (ideally age- and illness-specific) ^{2,3},
2. duration of leave (for example, in hours or days) ^{2,3},
3. adequate costing of such hours and days ⁴,
4. an estimate of vaccines' effectiveness on production losses ^{5,6}.

A targeted literature review identified public sources on sickness leave. A scoping review on vaccine effectiveness for influenza, RSV, COVID-19, pertussis, and pneumococcal focused on working-age adults, preferring CDC (US) and JCVI (UK) sources^{5,6}. Clinical trial efficacy generally exceeds real-world effectiveness. We integrated clinical trial and real-world data conservatively, considering all aspects. Sickness leave was monetarily valued using Dutch pharmaco-economic guidelines, assuming negligible mortality in healthy working adults⁴.

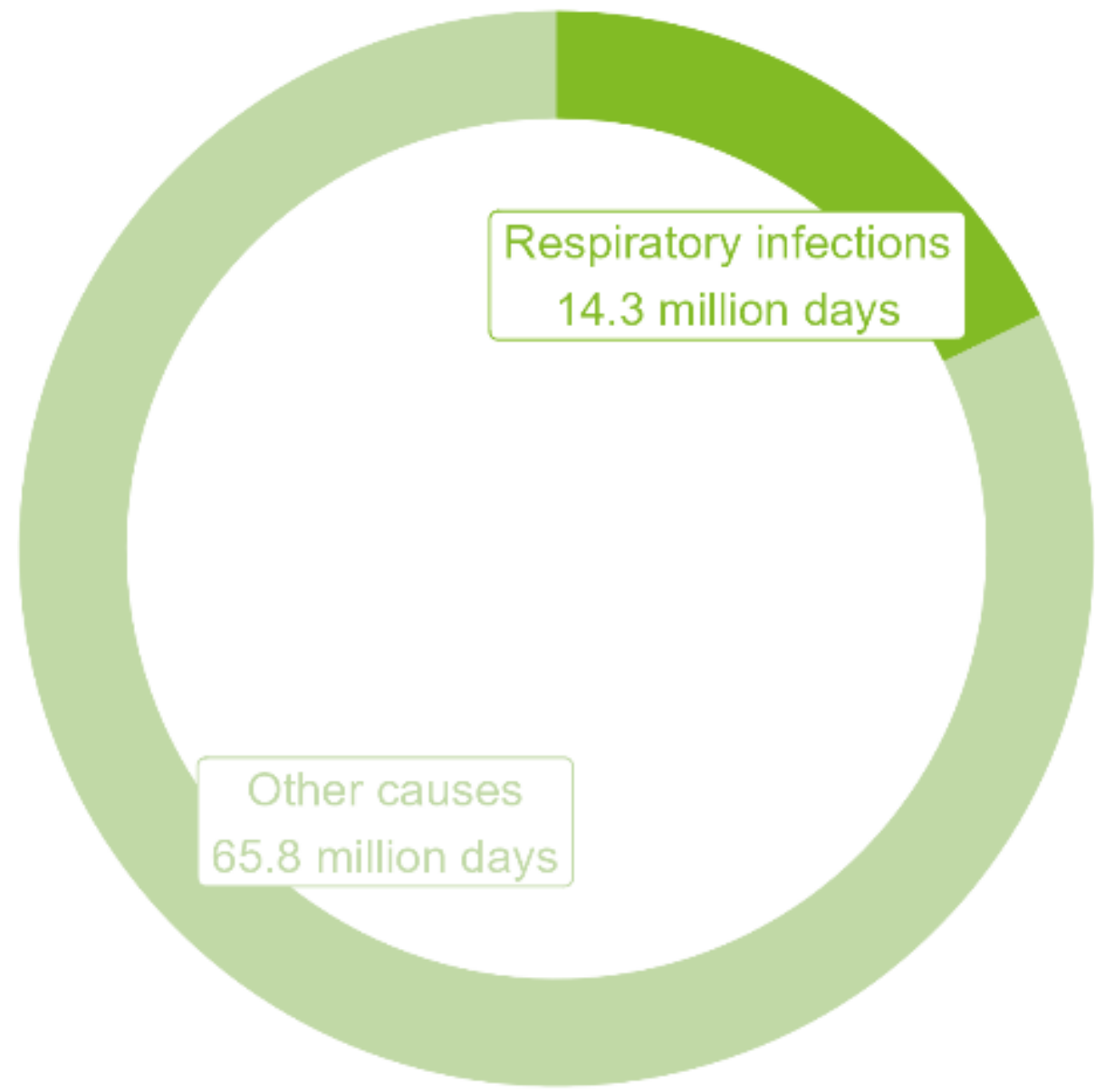
A comparative analysis evaluated current non-vaccination against a hypothetical 50% vaccination coverage with 60% effectiveness (40%-80% in credibility analysis). Sickness days, production losses, and potential monetary benefits of vaccination were estimated.

Results

Impact respiratory infections on productivity



In 2023, **7.6 million episodes** of sickness leave were reported in the Netherlands of which an **estimated 53.5%** could be considered to relate to respiratory diseases.



14.3 million days would relate to respiratory diseases. In total, this represents a monetary value of **€4.7 billion**.

Potential impact of vaccination strategies



Prevented sickness leave:
4.3 million days (2.9-5.7 million days)



Monetary savings:
€1.4 billion (€0.95 – €1.9 billion)

Conclusion

Our analysis shows that a relevant amount of absence days due to sickness leave can be avoided with adult respiratory vaccines at **4.3 million days** in The Netherlands, corresponding to **savings of €1.4 billion**. Obviously, these savings should be weighed against the vaccination costs within the context of cost- and cost-effectiveness analyses. Notably, it seems high time to get vaccinations against respiratory diseases on a shared agenda between employers, employees and the three Ministries of Health, Finance and Economic Affairs.

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