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# LEVERAGING TIME-USE DATA TO ESTIMATE MARKET AND NON-MARKET PRODUCTIVITY LOSSES DUE TO RESPIRATORY SYNCYTIAL VIRUS (RSV) DISEASE AMONG ADULTS AGED ≥60 YEARS IN THE UNITED STATES (US)

SCAN ME

#EE331

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## INTRODUCTION

**RSV** is a **major cause of acute respiratory infection** among older adults, with clinical and economic **burden increasing with age**.[1,2]

To capture the broad value for money when **evaluating healthcare interventions**, recent guidelines recommend the inclusion of a societal perspective[3,4]; however, **indirect costs are often limited to wages lost** due to missed work (market productivity losses).[5]

Market losses are **limited to those who remain in the workforce**; yet older adults provide substantial added value to society under the form of non-market productive activities such as **caregiving, household activities and volunteering**, among others.[6]

In this study, we aim to **facilitate more comprehensive economic evaluations for RSV interventions** in older adults by **estimating both market and non-market productivity losses** due to RSV cases and premature mortality in US adults aged ≥60 years.

## METHODS

**Time losses** relevant to RSV were retrieved from literature[7,8]:

1. Hospitalized lower respiratory tract disease (LRTD) cases: 7 days
2. Emergency department (ED) and outpatient visit cases: 3.3 days
3. Nonmedically-attended cases: 0.5 day (60-64 years) to 1 day (≥65 years)

These time losses were classified as **market, non-market, or non-productive activities**[9] based on an analysis of American Time Use Survey (ATUS)[10] data.

RSV-specific time losses were **valued at unit costs**, derived from the US Bureau of Labor Statistics[11] for market productivity losses, and from Grosse et al.[9] for non-market productivity losses. Non-productive time was valued at $0. *(Supplementary material)*

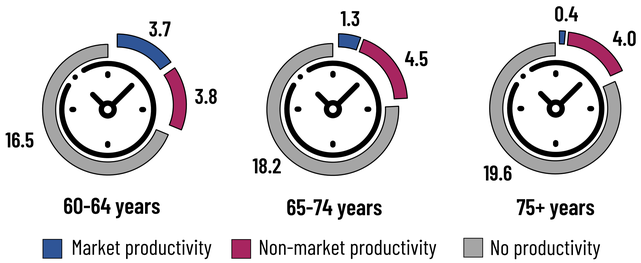
Productivity losses **due to RSV premature death** were included by inflating published estimates[9] using the gross domestic product deflator.[12]
Note: Productivity growth was not applied when deriving 2022 estimates.

A **Markov model**[2] was used to estimate annual productivity losses due to RSV disease and premature death in US adults aged ≥60 years.

## RESULTS

- Older adults spent less time performing market vs. non-market productive activities.
- Market productive activities decreased with age, whereas non-market productive activities remained relatively stable throughout the age groups.

**Time use by age group in hours per day**



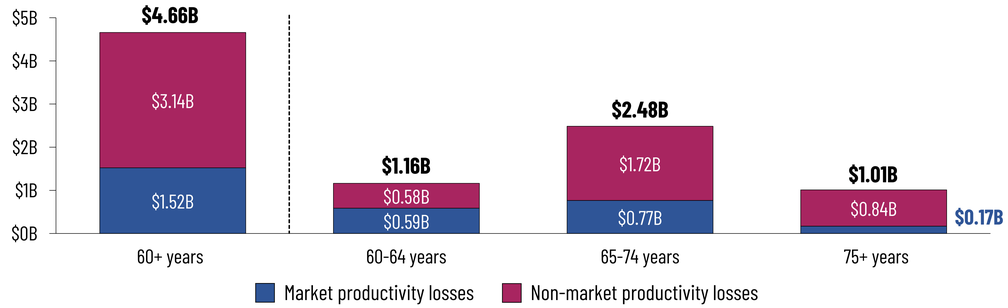

RSV-related productivity losses were highest for adults aged 60-64 years and decreased with age; non-market activities contributed substantially to productivity losses across all older adults.

| Productivity losses due to RSV URTD case[8-10,12] | | | |
|---|---|---|---|
| | Market | Non-Market | Total |
| **60-64 years** | $156 | $74 | $230 |
| **65-75 years** | $65 | $114 | $180 |
| **75+ years** | $17 | $102 | $120 |
| **Productivity losses due to RSV LRTD case[7-10,12]** | | | |
| | Market | Non-Market | Total |
| **60-64 years** | $275 | $130 | $405 |
| **65-75 years** | $112 | $195 | $307 |
| **75+ years** | $32 | $186 | $218 |
| **Productivity losses due to premature RSV-related death[9,12]** | | | |
| | Market | Non-Market | Total |
| **60-64 years** | $322,286 | $380,945 | $703,231 |
| **65-69 years** | $155,004 | $310,438 | $465,441 |
| **70-74 years** | $73,002 | $231,650 | $304,651 |
| **75-79 years** | $34,391 | $155,016 | $189,407 |
| **80-84 years** | $14,921 | $85,933 | $100,853 |
| **85-89 years** | $6,745 | $36,867 | $43,612 |
| **90+ years** | $2,211 | $8,059 | $10,270 |

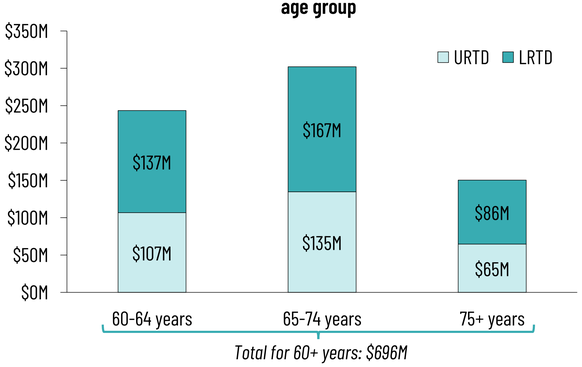
*LRTD: lower respiratory tract disease; RSV: respiratory syncytial virus; URTD: upper respiratory tract disease;* ***Note****: Total values may differ due to rounding.*

- 25% of productivity losses due to RSV occur in adults aged 60-64 years.
- 67% of productivity losses result from disruptions in non-market productive activities.

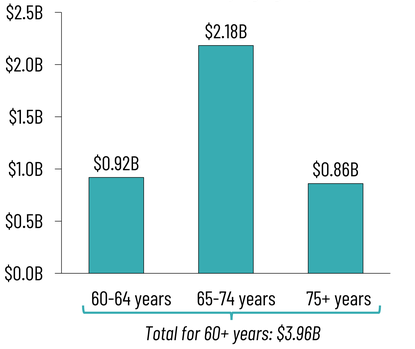
**Total annual RSV-related productivity losses, by age group**




**Annual productivity losses due to acute RSV URTD/LRTD, by age group**




**Annual productivity losses due to RSV-related death, by age group**




## CONCLUSIONS

- ✓ In addition to clinical and direct medical cost burden, **RSV causes nearly $4.7 billion in productivity losses among US older adults annually** (out of the total $7.4 billion societal cost of RSV[2]).
- ✓ Capturing both market and non-market productivity losses more comprehensively reflects older adults' value to society, with non-market productivity losses estimated at approximately **$3.1 billion.**

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