

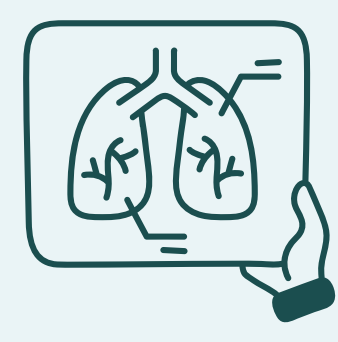
A TIME TRADE-OFF (TTO) STUDY TO ESTIMATE RESPIRATORY SYNCYTIAL VIRUS (RSV) RELATED UTILITY VALUES FOR OLDER ADULTS IN THE UNITED STATES (US)

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INTRODUCTION



Respiratory syncytial virus (**RSV**) is a common cause of **acute respiratory illness** across all ages, including older adults. [1]

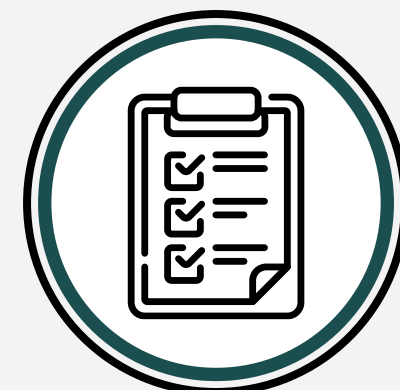


Each year, **RSV infection** occurs in **3–7%** of healthy older adults and **4–10%** of adults at increased risk of severe RSV. [2]



The objective of this study was to **estimate RSV-specific health utilities** for adults aged ≥ 60 years

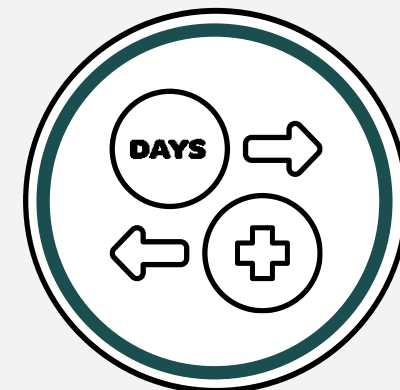
METHODS



Cross-sectional survey of US adults conducted between May and June 2022 to collect data on the **valuation of RSV health states**.



Online survey included vignettes describing 3 RSV health states for a hypothetical 70-year-old: **upper respiratory tract illness (URTI)**, **lower respiratory tract illness (LRTI)** and **severe LRTI**.



Time trade-off (TTO): Participants were asked to **trade some portion of time from the end of their lives** to avoid the health state described in each vignette.



TTO values were **summarized** descriptively for **the 3 health states**, with quality-adjusted life year (QALY) losses calculated by dividing the discounted median TTO values by 365 days.

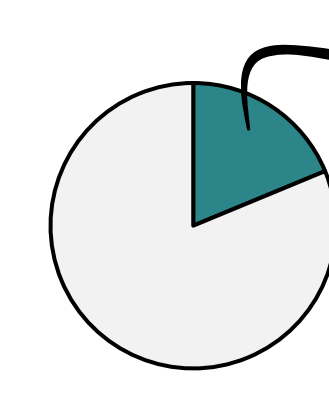


The vignettes were reviewed by **2 pulmonologists** and **3 adults ≥ 60 years old** who had experienced a recent RSV episode.

RESULTS



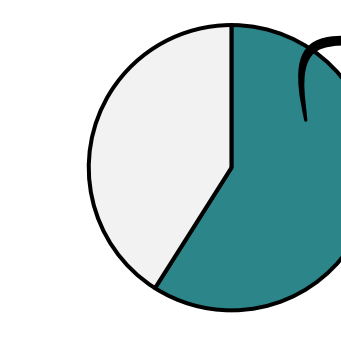
400 participants fulfilled study inclusion criteria and evaluated the vignettes (out of **1,473 respondents**).



75/400 participants excluded from analysis because of inconsistencies in responses and/or providing the same non-zero values for all vignettes.



Mean age of **45.3 years**, with **21.2%** of the sample aged ≥ 60 years (n=69/325)



58.8% of sample was female (n=191/325).



5% trimmed distributions to exclude small proportion of very high TTO values.[3]

NUMBER OF DAYS TRADED TO AVOID RSV HEALTH STATES

	Severe LRTI (n=292)	LRTI (n=292)	URTI (n=292)
Undiscounted			
Mean	103.67	43.42	31.02
(BCa 95% CI)	(83.81 - 130.70)	(35.68 - 54.38)	(24.01 - 39.69)
(BPct 95% CI)	(81.93 - 127.84)	(34.89 - 53.55)	(23.27 - 38.69)
Median	14.00	10.00	8.00
(BPct 95% CI)	(14.00 - 21.00)	(10.00 - 14.00)	(8.00 - 8.00)
10th / 90th Percentile	2/360	1/140	0/100
Min / Max	0/1350	0/365	0/365
Discounted (3%)			
Mean	64.90	27.07	19.29
(BCa 95% CI)	(52.31 - 81.27)	(22.26 - 33.88)	(15.06 - 24.63)
(BPct 95% CI)	(51.35 - 80.26)	(21.82 - 33.30)	(14.47 - 24.09)
Median	9.09	6.49	4.87
(BPct 95% CI)	(9.09 - 12.98)	(6.09 - 8.53)	(4.87 - 5.19)
10th / 90th Percentile	1/219	1/85	0/61
Min / Max	0/822	0/234	0/237

CI were estimated using 1,000 bootstrap sampling replications, with replacement, under the percentile method and, for the mean, also under the bias-corrected and accelerated method.[4] Abbreviations: BCa, bias-corrected and accelerated; BPct, bootstrap percentile; CI, confidence interval; LRTI, lower respiratory tract infection; Max, maximum; Min, minimum; RSV, respiratory syncytial virus; TTO, time trade-off; URTI, upper respiratory tract infection

UTILITY LOSS (QALYs)

Severe LRTI 0.025 QALYs	LRTI 0.018 QALYs	URTI 0.013 QALYs
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LIMITATIONS

- Study participants may **not be representative** of all US adults (e.g., online survey excluded individuals without internet access).
- A **5% data trimming approach** was used to exclude outlier TTO values from the analysis. While this considerably reduced the impact of the skewed TTO distribution on reported mean values, **findings from the study focus on the more conservative median values**.

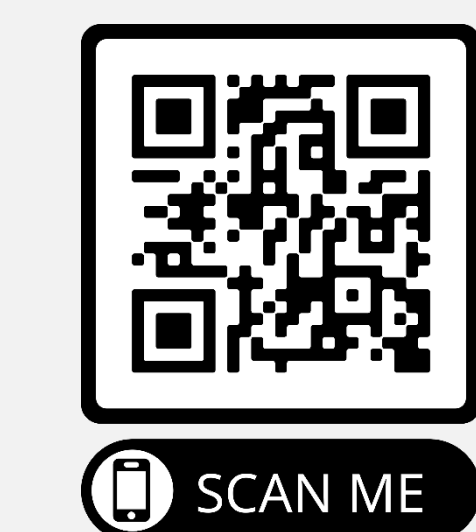
CONCLUSIONS

- ✓ This study provides new information on the valuation of RSV-related health states by severity, indicating that **adults are willing to trade several days at the end of their life to avoid an RSV episode** at an age of 70.
- ✓ Results can be used as **inputs in economic evaluations of RSV vaccines**, to accurately capture RSV-related QALY losses that could be avoided as a result of older adult vaccination.

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+ DEMOGRAPHIC CHARACTERISTICS FOR FULL ANALYTIC SAMPLE AND SUBGROUP AGED ≥ 60 YEARS

Characteristic	Full analytic sample (n=325)	Adults aged ≥ 60 (n=69)
Age,		
Mean (min / max)	45.3 (18 / 91)	68.6 (60 / 91)
% (n)		
18 – 34	29.5 (96)	0
35 – 44	20.0 (65)	0
45 – 59	29.2 (95)	0
60 – 74	17.2 (56)	81.2 (56)
75 and older	4.0 (13)	18.8 (13)
Female, % (n)	58.8 (191)	37.7 (26)
Race, % (n)		
Hispanic, Latino, or Spanish origin	14.2 (46)	5.8 (4)
American Indian or Alaska Native	1.8 (6)	2.9 (2)
Asian	4.6 (15)	4.3 (3)
Black or African American	16.9 (55)	0
Native Hawaiian or Other Pacific Islander	0.6 (2)	1.4 (1)
White	75.4 (245)	92.8 (64)
Other	4.3 (14)	1.4 (1)
Education, % (n)		
Less than high school diploma or equivalent	6.2 (20)	5.8 (4)
High school diploma or equivalent	34.2 (111)	31.9 (22)
Some college but no degree	21.8 (71)	20.3 (14)
Associate degree or Technical Certificate	14.2 (46)	14.5 (10)
Bachelor's degree (e.g., B.A., B.S.)	14.8 (48)	21.7 (15)
Graduate or professional degree (e.g., M.A., M.S., PhD., M.D., etc.)	8.3 (27)	4.3 (3)
I prefer not to answer	0.6 (2)	1.4 (1)
Employment Status, % (n)		
Employed / self-employed full-time	34.8 (113)	8.7 (6)
Employed / self-employed part-time	8.9 (29)	7.2 (5)
Unemployed and looking for work	11.4 (37)	0
Retired	17.8 (58)	73.9 (51)
Student	4.0 (13)	0
Homemaker	8.6 (28)	1.4 (1)
Disabled / Unable to work	13.2 (43)	8.7 (6)
Other	0.3 (1)	0
Prefer not to answer	0.9 (3)	0
Parent, % (n)	56.3 (183)	58.0 (40)
Parent of a child < 1 year of age, % (n)	23.0 (42)	0
Parent of a child < 18 years of age, % (n)	48.6 (89)	2.5 (1)

+ RSV-RELATED VIGNETTES

Imagine that you are 70 years old and are diagnosed with an RSV infection.

SEVERE LRTI

During the RSV infection, you are extremely tired and experience severe wheezing and coughing episodes with pain in your chest. You have a fever, have trouble breathing, and your lips and fingertips turn blue. You worry that the disease may worsen and that you may die. After 3 days, you are hospitalized in the intensive care unit for close monitoring and receive fluids through a needle in your arm (an IV) and oxygen through a mask. You are in the hospital for 6 days. Fourteen days after you started feeling the RSV infection you feel better, but the cough may linger for several weeks. You may not completely return to your previous health state.

LRTI

During the RSV infection, you are abnormally tired. You have a severe cough that interrupts your daily activities and your sleep. You are feverish, have trouble breathing, and experience periods of wheezing. You see your doctor twice and take Tylenol and cough syrup to help with the symptoms. As the symptoms continue to worsen through day 5, you worry that the disease may worsen further and that you will end up in the hospital. Ten days after the symptoms started you feel better, but the cough lingers for 4 weeks as you gradually return to your previous health state.

URTI

During the RSV infection, you feel feverish with a headache and your body aches. You are tired and experience a runny or stuffy nose, a sore throat, and a cough. You see your doctor and take Tylenol and cough syrup to help with the symptoms. You worry that the disease may worsen. The symptoms are the worst around day 5 and last for 8 days. After the symptoms are gone, you return to your previous health state.

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DISCLOSURES

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Acknowledgements: The authors thank Audrey Colliou for her contribution to this study. Business & Decision Life Sciences platform provided editorial assistance and publications coordination, on behalf of GSK. Sarah Fico provided medical writing support.

Conflicts of interest: DC, DM and EL are employed by and hold shares in GSK. JB and RRB are employed by Quality Metric which was paid by GSK to perform this study. JB also declares honorarium from EuroQol for lectures on psychometric analyses, support from EuroQol for participating to 2022 meeting Chicago and ISOQOL board membership. All authors and presenting declare no other financial and non-financial relationships and activities

Funding: GlaxoSmithKline Biologicals SA (GSK study identifier: 218482)

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