Supplementary Material for:

Potential impact of nirsevimab on RSV transmission and medically attended lower respiratory tract illness caused by RSV: a disease transmission model

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**Supplementary Methods**

**Model presentation**

The model assumes 10 RSV disease states. Newborns benefit from a waning maternal protective immunity (M) during an average of $\omega^{-1}$ days after which they became susceptible to a first RSV infection ($S_0$). Throughout life, they may acquire consecutive infections $I_1$, $I_2$ and $I_3$ and be infectious for an average duration of $\gamma_1^{-1}$, $\gamma_2^{-1}$ and $\gamma_3^{-1}$ days respectively after which they acquire short-term waning immunity ($P_1$, $P_2$ and $P_3$) lasting on average $p_1^{-1}$ days. Reduced susceptibility to infection ($S_1$, $S_2$) due to acquired partial immunity, is developed after consecutive infections, with decreasing infection duration ($\sigma_1$, $\sigma_2$) and decreasing infectiousness ($\rho_1$, $\rho_2$).

RSV-LRTI is assumed to occur among infected individuals with age-specific probabilities ($d_1$, $d_2$ and $d_3$) depending on the infection number, with a certain proportion ($h$) of those cases that have been coded in the Truven Health Marketscan® databases assumed to represent RSV-MALRTIs.

RSV transmission was assumed to be frequency-dependent and was based on the projected US contact matrix described elsewhere [1]. Seasonal patterns and amplitudes of RSV outbreaks were captured using a cosine forcing function. The model diagram is presented in supplementary material (Figure S1), as well as the US contact matrix (Figure S2).

Demographic data based on age-stratified US Census population estimates and projections from 2008 to 2015 [2] birth rates obtained from the 2014 US vital statistics [3] and death rates from the 2013 US vital statistics [4] were included in the model. Continuous ageing rates were included in the ordinary differential equations, with individuals assumed to age into the next age group with rate equal to $1/(\text{width of the age class})$. Migration was not considered.
Model equations:

\[ \frac{dM_a}{dt} = B_0 - (\omega + \mu_a)M_a - \kappa_aM_a + \kappa_{a-1}M_{a-1} \]

\[ \frac{dS_{0,a}}{dt} = \omega M_a - \lambda_aS_{0,a} - \mu_aS_{0,a} - \kappa_aS_{0,a} + \kappa_{a-1}S_{0,a-1} \]

\[ \frac{dI_{1,a}}{dt} = \lambda_aS_{0,a} - (\gamma_1 + \mu_a)I_{1,a} - \kappa_aI_{1,a} + \kappa_{a-1}I_{1,a-1} \]

\[ \frac{dP_{1,a}}{dt} = \gamma_1I_{1,a} - (p + \mu_a)P_{1,a} - \kappa_aP_{1,a} + \kappa_{a-1}P_{1,a-1} \]

\[ \frac{dS_{1,a}}{dt} = pP_{1,a} - \sigma_1\lambda_aS_{1,a} - \mu_aS_{1,a} - \kappa_aS_{1,a} + \kappa_{a-1}S_{1,a-1} \]

\[ \frac{dI_{2,a}}{dt} = \sigma_1\lambda_aS_{1,a} - (\gamma_2 + \mu_a)I_{2,a} - \kappa_aI_{2,a} + \kappa_{a-1}I_{2,a-1} \]

\[ \frac{dP_{2,a}}{dt} = \gamma_2I_{2,a} - (p + \mu_a)P_{2,a} - \kappa_aP_{2,a} + \kappa_{a-1}P_{2,a-1} \]

\[ \frac{dS_{2,a}}{dt} = p(P_{2,a} + P_{3,a}) - \sigma_2\lambda_aS_{2,a} - \mu_aS_{2,a} - \kappa_aS_{2,a} + \kappa_{a-1}S_{2,a-1} \]

\[ \frac{dI_{3,a}}{dt} = \sigma_2\lambda_aS_{2,a} - (\gamma_3 + \mu_a)I_{3,a} - \kappa_aI_{3,a} + \kappa_{a-1}I_{3,a-1} \]

\[ \frac{dP_{3,a}}{dt} = \gamma_3I_{3,a} - (p + \mu_a)P_{3,a} - \kappa_aP_{3,a} + \kappa_{a-1}P_{3,a-1} \]

With \( a = 1 \ldots 32 \), corresponding to age groups "0-1 months", "1-2 months", "2-3 months", "3-4 months", "4-5 months", "5-6 months", "6-7 months", "7-8 months", "8-9 months", "9-10 months", "10-11 months", "11-12 months", "12-13 months", "13-14 months", "14-15 months", "15-16 months", "16-17 months", "17-18 months", "18-19 months", "19-20 months", "20-21 months", "21-22 months", "22-23 months", "23-24 months", "2-4 years", "5-9 years", "10-19 years", "20-39 years", "40-59 years", "60-64 years", "65-74 years" and "75+- years".

\( B_0 = 0 \) if \( a > 1 \) and \( \kappa_{a-1} = 0 \) if \( a = 1 \)

\( \lambda_a = \beta_0 \left( 1 + b \cos \frac{2\pi}{12}(t + \varphi) \right) \sum_{j=1}^{n} \frac{C_{a,j}}{N_j} (I_{1,j} + \rho_1 I_{2,j} + \rho_2 I_{3,j}) \)

\( C_{a,j} \) is the US contact matrix, and \( N_a \) the total number of persons in group age \( a \).

\( LRTI_s = d_{1,a}I_{1,a} + d_{2,a}I_{2,a} + d_{3,a}I_{3,a} \)

\( MALRTI_s = h \times LRTI_s \)
Calibration

The model was calibrated, and the parameters estimated by maximum-likelihood assuming that the monthly age-specific MALRTIs count, \( y_{m,a} \), follows a Poisson distribution with mean equal to the model-predicted count \( \hat{y}_{m,a} \). The log-likelihood of the model is given by the following equation:

\[
LL = \sum_{m} \sum_{a} (y_{m,a} \log(\hat{y}_{m,a}) - \hat{y}_{m,a} - \sum_{i=1}^{y_{m,a}} \log(i))
\]

The model was fitted to the incidence of age-specific RSV-MALRTI by calendar month, and four parameters were estimated: seasonality amplitude (b) and phase (\( \varphi \)), per contact transmission probability (\( \beta_0 \)), and reporting fraction (i.e. proportion of individuals with LRTD who were coded as RSV-MALRTI in the Truven Health Marketscan® databases) (h). For each fit, the model was seeded with one infectious individual and a burn-in period of 50 years was used to ensure equilibrium was reached. Maximum likelihood parameters estimated were obtained using the Nelder-Mead algorithm [5]. The number of RSV-MALRTIs in each age group during each calendar month was assumed to follow a Poisson distribution, assuming the mean of RSV-MALRTIs for any single age group is equal to the model-predicted number of RSV episodes for that age group. Numerical goodness-of-fit was then determined by calculating the root mean square error (RMSE) and R-squared (R\(^2\)).

Potential impact of nirsevimab:

We modelled a universal immunization strategy whereby nirsevimab is given to all infants aged 0–7 months entering their first RSV epidemic season or born during the epidemic season (1 November–31 March). Coverage of single-dose nirsevimab was assumed to be 71% [6] and protection against severe RSV-LRTI was assumed immediate and season-long (5 months) with constant 70% efficacy over the window of protection. We ran our model according to two scenarios: in scenario 1, we
assumed no impact of nirsevimab on RSV transmission; and in scenario 2, we assumed RSV viral shedding can be reduced and assumed an arbitrary 50% reduction in transmission.

Modifications of equations for the potential effect of nirsevimab on LRTIs is as follows:

$$LRTI_{a} = (1 - \theta \psi)(d_{1,a}I_{1,a} + d_{2,a}I_{2,a} + d_{3,a}I_{3,a})$$

for \(t\) between October 1st and March 31th, with \(\theta\)=nirsevimab coverage (71%) and \(\psi\)=nirsevimab constant efficacy (70%) during 5 months.

Modification of equations for the potential effect of nirsevimab on transmission is as follows:

$$\lambda_{a} = \beta_{0}\left(1 + b \cos\left(\frac{2\pi}{12}(t + \phi)\right)\right)\sum_{j=1}^{n} \frac{C_{a,j}}{N_{j}} (1 - \theta \psi \xi)(I_{1,j} + \rho_{1}I_{2,j} + \rho_{2}I_{3,j})$$

for \(t\) between October 1\(^{st}\) and March 31\(^{th}\), with \(\theta\)=nirsevimab coverage (71%), \(\psi\)=nirsevimab constant efficacy (70%) during 5 months, \(\xi\)=nirsevimab reduction of transmission (50%).

**Data source and definitions**

Index MALRTI event due to RSV was defined as hospitalization, a visit to the emergency department/urgent care (UC), or outpatient visit attributable to RSV identified using the following International Classification of Diseases Clinical Modification (9th revision) (ICD-9-CM) codes: respiratory syncytial virus (079.6), acute bronchiolitis due to respiratory syncytial virus (466.11), or pneumonia due to respiratory syncytial virus (480.1). For inpatient admissions, RSV-MALRTI was defined by a principal RSV diagnosis code while for outpatient visits both first and secondary diagnosis codes were used. A new RSV-MALRTI was considered to be attributable to a new RSV infection if it occurred more than 28 days following any previous RSV-MALRTI with the same diagnostic codes.

Age-specific incidence of MALRTI due to RSV was calculated by calendar month by dividing the number of RSV-associated cases occurring in a specific age group by the number of persons in that
same age range covered by Truven Health insurance during the respective particular month. The numbers of RSV MALRTI were then calculated for the general US population by multiplying RSV incidence for specific age groups by the age-stratified US Census population estimates and projections from 2008 to 2015[2].

Epidemiological year was defined from August 1st to July 31st each year. We presented results according to two specific periods of RSV circulation intensity, from November 1st to March 31st, defined as the RSV epidemic season [6], and from April 1st to October 30th defined as the RSV inter-epidemic period.

Since date of birth was not available in the MarketScan database, we first assign the date of the first claim of birth to approximate the birth date, and then used the enrolment date as a proxy for birth date when year of first enrolment and birth year were equivalent [7]. As >75% claims with a newborn code occurred within 5 days of the first enrolment date, it seems to be a good approximation approach. Using this method, we retrieve half of patients with missing birth claim (currently 15-20% of missing birth date vs. 30-40% previously) and reduce the imbalance of incidence between patients with and without birth date, excepted for years of 2010-2011.
## Supplementary Tables and Figures

### Supplementary Table S1. Observed number of RSV-MALRTIs by season and age group in the US

| Season   | 0-6 months | 6-12 months | 12-18 months | 18-24 months | 2-4 years | 5-65 years | 65+ years | Overall |
|----------|------------|-------------|--------------|--------------|-----------|------------|-----------|---------|
| 2009-2010| 165125 (23.9%) | 142970 (20.7%) | 91628 (13.3%) | 56316 (8.2%) | 95144 (13.8%) | 111414 (16.1%) | 27923 (4.0%) | 690520 (100.0%) |
| 2010-2011| 170551 (25.2%) | 149359 (22.1%) | 86370 (12.8%) | 54082 (8%) | 89838 (13.3%) | 97463 (14.4%) | 28348 (4.2%) | 676011 (100.0%) |
| 2011-2012| 152880 (24.4%) | 143114 (22.8%) | 83412 (13.3%) | 49183 (7.8%) | 87999 (14.0%) | 81720 (13.0%) | 29504 (4.7%) | 627812 (100.0%) |
| 2012-2013| 171280 (26.0%) | 147920 (22.4%) | 83508 (12.7%) | 54428 (8.3%) | 92167 (14.0%) | 78459 (11.9%) | 31918 (4.8%) | 659680 (100.0%) |
| 2013-2014| 144129 (26.3%) | 128453 (23.5%) | 69082 (12.6%) | 44509 (8.1%) | 77479 (14.2%) | 57424 (10.5%) | 26146 (4.8%) | 547222 (100.0%) |
| 2014-2015| 146646 (25.3%) | 135604 (23.4%) | 80542 (13.9%) | 47461 (8.2%) | 86841 (15.0%) | 58335 (10.1%) | 23306 (4.0%) | 578735 (100.0%) |
| Seasonal average | 158435 (25.1%) | 141237 (22.4%) | 82424 (13.1%) | 50997 (8.1%) | 88245 (14%) | 80803 (12.8%) | 27858 (4.4%) | 629997 (100.0%) |
Supplementary Table S2. Observed incidence rates per 1,000 persons of RSV-MALRTIs by season and age group in the USA

| Season   | 0-6 months | 6-12 months | 12-18 months | 18-24 months | 2-4 years | 5-65 years | 65+ years |
|----------|------------|-------------|--------------|--------------|-----------|------------|-----------|
| 2009-2010| 69.4       | 70.7        | 41.6         | 28.3         | 7.8       | 0.4        | 0.7       |
| 2010-2011| 74.5       | 73.8        | 39.9         | 27.0         | 7.4       | 0.4        | 0.7       |
| 2011-2012| 70.3       | 72.3        | 38.5         | 24.6         | 7.3       | 0.3        | 0.7       |
| 2012-2013| 79.7       | 76.2        | 40.4         | 28.6         | 7.8       | 0.3        | 0.7       |
| 2013-2014| 67.3       | 65.8        | 33.0         | 22.6         | 6.4       | 0.2        | 0.6       |
| 2014-2015| 67.2       | 66.8        | 37.9         | 23.7         | 7.2       | 0.2        | 0.5       |
| Overall  | 71.6       | 71.1        | 38.4         | 25.7         | 7.3       | 0.3        | 0.7       |
Supplementary Table S3. Potential impact of nirsevimab on expected numbers of RSV-MALRTIs, by season, for scenario 1 (A) or scenario 2 (B)

Absolute variation in the number of RSV-MALRTIs with nirsevimab compared to without nirsevimab, by age group. assuming nirsevimab has no effect on RSV transmission (A) and assuming nirsevimab reduces RSV viral shedding by 50% (B)

**A. Scenario 1**

| Period                        | Season       | 0-6 months | 6-12 months | 12-24 months | 2-4 years | 5-65 years | 65+ years | Overall |
|-------------------------------|--------------|------------|-------------|--------------|-----------|------------|-----------|---------|
| RSV epidemic season           | 2008-2009    | 0          | 0           | 0            | 0         | 0          | 0         | 0       |
| RSV epidemic season           | 2009-2010    | -58177     | -38191      | 0            | 0         | 0          | 0         | -96368  |
| RSV epidemic season           | 2010-2011    | -58081     | -38139      | 0            | 0         | 0          | 0         | -96220  |
| RSV epidemic season           | 2011-2012    | -57991     | -38090      | 0            | 0         | 0          | 0         | -96082  |
| RSV epidemic season           | 2012-2013    | -57909     | -38046      | 0            | 0         | 0          | 0         | -95955  |
| RSV epidemic season           | 2013-2014    | -57836     | -38006      | 0            | 0         | 0          | 0         | -95842  |
| RSV epidemic season           | 2014-2015    | -57772     | -37972      | 0            | 0         | 0          | 0         | -95744  |
| RSV epidemic season           | Average      | -57961     | -38074      | 0            | 0         | 0          | 0         | -96035  |
| RSV inter-epidemic season     | 2008-2009    | 0          | 0           | 0            | 0         | 0          | 0         | 0       |
| RSV inter-epidemic season     | 2009-2010    | -7347      | 0           | 0            | 0         | 0          | 0         | -7347   |
| RSV inter-epidemic season     | 2010-2011    | -7338      | 0           | 0            | 0         | 0          | 0         | -7338   |
| RSV inter-epidemic season     | 2011-2012    | -7331      | 0           | 0            | 0         | 0          | 0         | -7331   |
| RSV inter-epidemic season | 2012-2013 | -7323 | 0 | 0 | 0 | 0 | 0 | -7323 |
| RSV inter-epidemic season | 2013-2014 | -7317 | 0 | 0 | 0 | 0 | 0 | -7317 |
| RSV inter-epidemic season | 2014-2015 | -7312 | 0 | 0 | 0 | 0 | 0 | -7312 |
| RSV inter-epidemic season | 2015-2016 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| RSV inter-epidemics season | Average* | -7328 | 0 | 0 | 0 | 0 | 0 | -7328 |
| Overall | 2008-2009 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Overall | 2009-2010 | -65523 | -38191 | 0 | 0 | 0 | 0 | -103715 |
| Overall | 2010-2011 | -65420 | -38139 | 0 | 0 | 0 | 0 | -103559 |
| Overall | 2011-2012 | -65322 | -38090 | 0 | 0 | 0 | 0 | -103412 |
| Overall | 2012-2013 | -65233 | -38046 | 0 | 0 | 0 | 0 | -103279 |
| Overall | 2013-2014 | -65153 | -38006 | 0 | 0 | 0 | 0 | -103159 |
| Overall | 2014-2015 | -65084 | -37972 | 0 | 0 | 0 | 0 | -103056 |
| Overall | 2015-2016 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| RSV season | Average* | -65289 | -38074 | 0 | 0 | 0 | 0 | -103363 |

The RSV epidemic season was defined as the period from November 1st to March 31st. The RSV inter-epidemic period lasted from April 1st to October 30th.

An RSV season was defined as the period from August 1st to July 31st. Nirsevimab was assumed to be introduced from the 1st November 2009.

*Average calculated from 2010 to 2014 since nirsevimab was assumed to be introduced 1st November 2009.
**Average calculated from 2010–2011 to 2014–2015 seasons since nirsevimab was assumed to be introduced 1st November 2009.**
### B. Scenario 2

| Period                      | Season     | 0-6 months | 6-12 months | 12-24 months | 2-4 years | 5-65 years | 65+ years | Overall |
|-----------------------------|------------|------------|-------------|--------------|-----------|------------|-----------|---------|
| RSV epidemic season         | 2008-2009  | 0          | 0           | 0            | 0         | 0          | 0         | 0       |
| RSV epidemic season         | 2009-2010  | -64170     | -44625      | -9725        | -564      | -8992      | -1058     | -129134 |
| RSV epidemic season         | 2010-2011  | -62592     | -41854      | -2558        | -374      | -6835      | -819      | -115033 |
| RSV epidemic season         | 2011-2012  | -58358     | -37380      | 3097         | 104       | -656       | -154      | -93347  |
| RSV epidemic season         | 2012-2013  | -60921     | -40771      | -3564        | -160      | -4476      | -580      | -110473 |
| RSV epidemic season         | 2013-2014  | -58737     | -38050      | 1108         | 51        | -1316      | -243      | -97187  |
| RSV epidemic season         | 2014-2015  | -58590     | -38197      | -43          | 53        | -1125      | -230      | -98132  |
| RSV epidemic season         | Average    | -60561     | -40146      | -1948        | -148      | -3900      | -514      | -107218 |
| RSV inter-epidemic season   | 2008-2009  | 0          | 0           | 0            | 0         | 0          | 0         | 0       |
| RSV inter-epidemic season   | 2009-2010  | -10607     | -3292       | -2953        | -211      | -3230      | -363      | -20656  |
| RSV inter-epidemic season   | 2010-2011  | -10610     | -2558       | -1409        | -162      | -2734      | -310      | -17783  |
| RSV inter-epidemic season   | 2011-2012  | -8729      | -1307       | -435         | -52       | -1333      | -160      | -12015  |
| RSV inter-epidemic season   | 2012-2013  | -9574      | -2142       | -1664        | -100      | -2036      | -239      | -15755  |
| RSV inter-epidemic season   | 2013-2014  | -8789      | -1356       | -767         | -52       | -1299      | -161      | -12424  |
| RSV inter-epidemic season   | 2014-2015  | -8594      | -1348       | -985         | -48       | -1189      | -151      | -12315  |
RSV inter-epidemic season | 2015-2016 | -101 | -60 | -37 | -1 | -48 | -7 | -254 |
RSV inter-epidemics season | Average* | -9484 | -2001 | -1369 | -104 | -1970 | -231 | -15158 |
Overall | 2008-2009 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
Overall | 2009-2010 | -74777 | -47917 | -12678 | -776 | -12222 | -1421 | -149791 |
Overall | 2010-2011 | -73202 | -44412 | -3966 | -537 | -9570 | -1129 | -132816 |
Overall | 2011-2012 | -67087 | -38687 | 2662 | 52 | -1989 | -313 | -105362 |
Overall | 2012-2013 | -70495 | -42913 | -5229 | -260 | -6512 | -819 | -126228 |
Overall | 2013-2014 | -67526 | -39406 | 341 | -1 | -2615 | -404 | -109611 |
Overall | 2014-2015 | -67184 | -39545 | -1028 | 5 | -2314 | -381 | -110448 |
Overall | 2015-2016 | -101 | -60 | -37 | -1 | -48 | -7 | -254 |
RSV season | Average* | -70045 | -42147 | -3317 | -253 | -5870 | -745 | -122376 |

The RSV epidemic season was defined as the period from November 1st to March 31st. The RSV inter-epidemic period lasted from April 1st to October 30th.

An RSV season was defined as the period from August 1st to July 31st. Nirsevimab was assumed to be introduced from the 1st November 2009.

*Average calculated from 2010 to 2014 since nirsevimab was assumed to be introduced 1st November 2009.

**Average calculated from 2010–2011 to 2014–2015 seasons since nirsevimab was assumed to be introduced 1st November 2009.
Supplementary Table S4. Quantification of nirsevimab indirect effects by age groups and season.

| Period                    | Season          | Potential change in number of RSV-MALRTIs due to indirect effects | Percentage of total change due to indirect effects |
|---------------------------|-----------------|-----------------------------------------------------------------|---------------------------------------------------|
|                           |                 | 0-6 months | 6-12 months | 12-24 months | 2-4 years | 5-65 years | Overall | 0-6 months | 6-12 months | 12-24 months | 2-4 years | 5-65 years | 65+ Overall |
| RSV epidemic season       | 2008-2009       | 0          | 0           | 0            | 0         | 0          | 0        | 9.3%       | 14.4%       | 100.0%      | 100.0%     | 100.0%     | 100.0%     | 25.4%     |
| RSV epidemic season       | 2009-2010       | -5993      | -6434       | -9725        | -564      | -8992      | -1058    | -32766     | 9.3%        | 14.4%       | 100.0%     | 100.0%     | 100.0%     | 100.0%     | 25.4%     |
| RSV epidemic season       | 2010-2011       | -4511      | -3715       | -2558        | -374      | -6835      | -819     | -18813     | 7.2%        | 8.9%        | 100.0%     | 100.0%     | 100.0%     | 100.0%     | 16.4%     |
| RSV epidemic season       | 2011-2012       | -367       | 710         | 3097         | 104       | -656       | -154     | 2735       | 0.6%        | -1.9%       | 100.0%     | 100.0%     | 100.0%     | 100.0%     | -2.9%     |
| RSV epidemic season       | 2012-2013       | -3012      | -2725       | -3564        | -160      | -4476      | -580     | -14518     | 4.9%        | 6.7%        | 100.0%     | 100.0%     | 100.0%     | 100.0%     | 13.1%     |
| RSV epidemic season       | 2013-2014       | -901       | -44         | 1108         | 51        | -1316      | -243     | -1345      | 1.5%        | 0.1%        | 100.0%     | 100.0%     | 100.0%     | 100.0%     | 1.4%      |
| RSV epidemic season       | 2014-2015       | -818       | -225        | -43          | 53        | -1125      | -230     | -2388      | 1.4%        | 0.6%        | 100.0%     | 100.0%     | 100.0%     | 100.0%     | 2.4%      |
| RSV epidemic season       | Average*        | -2600      | -2072       | -1948        | -148      | -3900      | -514     | -11183     | 4.3%        | 5.2%        | 100.0%     | 100.0%     | 100.0%     | 100.0%     | 10.4%     |
| RSV inter-epidemic season | 2008-2009       | 0          | 0           | 0            | 0         | 0          | 0        | 0          | 100.0%      | 100.0%      | 100.0%     | 100.0%     | 100.0%     | 100.0%     | 100.0%    |
| RSV inter-epidemic season | 2009-2010       | -3260      | -3292       | -2953        | -211      | -3230      | -363     | -13309     | 30.7%       | 100.0%      | 100.0%     | 100.0%     | 100.0%     | 100.0%     | 64.4%     |
| RSV inter-epidemic season | 2010-2011       | -3272      | -2558       | -1409        | -162      | -2734      | -310     | -10445     | 30.8%       | 100.0%      | 100.0%     | 100.0%     | 100.0%     | 100.0%     | 58.7%     |
| RSV inter-epidemic season | 2011-2012       | -1398      | -1307       | -435         | -52       | -1333      | -160     | -4684      | 16.0%       | 100.0%      | 100.0%     | 100.0%     | 100.0%     | 100.0%     | 39.0%     |
| RSV inter-epidemic season | 2012-2013       | -2251      | -2142       | -1664        | -100      | -2036      | -239     | -8432      | 23.5%       | 100.0%      | 100.0%     | 100.0%     | 100.0%     | 100.0%     | 53.5%     |
| RSV inter-epidemic season | 2013-2014       | -1472      | -1356       | -767         | -52       | -1299      | -161     | -5107      | 16.7%       | 100.0%      | 100.0%     | 100.0%     | 100.0%     | 100.0%     | 41.1%     |
| RSV inter-epidemic season | 2014-2015       | -1282      | -1348       | -985         | -48       | -1189      | -151     | -5003      | 14.9%       | 100.0%      | 100.0%     | 100.0%     | 100.0%     | 100.0%     | 40.6%     |
| RSV inter-epidemic season | 2015-2016       | -101       | -60         | -37          | -1        | -48        | -7       | -254       | 6.5%        | 100.0%      | 100.0%     | 100.0%     | 100.0%     | 100.0%     | 8.9%      |
| RSV inter-epidemics season| Average*        | -2156      | -2001       | -1369        | -104      | -1970      | -231     | -7830      | 22.7%       | 100.0%      | 100.0%     | 100.0%     | 100.0%     | 100.0%     | 51.7%     |
| Overall                   | 2008-2009       | 0          | 0           | 0            | 0         | 0          | 0        | 0          | 100.0%      | 100.0%      | 100.0%     | 100.0%     | 100.0%     | 100.0%     | 100.0%    |
| Overall                   | 2009-2010       | -9254      | -9726       | -12678       | -776      | -12222     | -1421    | -46076     | 12.4%       | 20.3%       | 100.0%     | 100.0%     | 100.0%     | 100.0%     | 30.8%     |

Note: Percentage of total change due to indirect effects is shown for each age group and season.
| Year        | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 | 2015-2016 | Average*     | Average**    |
|------------|-----------|-----------|-----------|-----------|-----------|-----------|--------------|--------------|
|            | -7782     | -1765     | -5262     | -2373     | -2100     | -101      | -4756        | -4073        |
|            | -6273     | -597      | -4867     | -1400     | -1573     | -60       | -3317        | -3317        |
|            | -3966     | 2662      | -5229     | 341       | -1028     | -37       | -253         | -253         |
|            | -9570     | 52        | -260      | -1        | 5         | -1        | -253         | -253         |
|            | -1129     | -1989     | -6512     | -2615     | -2314     | -48       | -5870        | -5870        |
|            | -29257    | -313      | -819      | -404      | -381      | -7        | -745         | -745         |
| Overall    | 10.6%     | 2.6%      | 7.5%      | 3.5%      | 3.1%      | 6.8%      | 6.8%         | 6.8%         |
|            | 14.1%     | 1.5%      | 11.3%     | 3.6%      | 4.0%      | 9.7%      | **100.0%     | **100.0%     |
|            | 100.0%    | 100.0%    | 100.0%    | 100.0%    | 100.0%    | 100.0%    | **100.0%     | **100.0%     |
|            | 100.0%    | 100.0%    | 100.0%    | 100.0%    | 100.0%    | 100.0%    | **100.0%     | **100.0%     |
|            | 22.0%     | 1.9%      | 18.2%     | 5.9%      | 6.7%      | 15.5%     | **100.0%     | **100.0%     |

The RSV epidemic season was defined as the period from November 1st to March 31st. The RSV inter-epidemic period lasted from April 1st to October 30th. An RSV season was defined as the period from August 1st to July 31st. Nirsevimab was assumed to be introduced from the 1st November 2009.

*Average calculated from 2010 to 2014 since nirsevimab was assumed to be introduced 1st November 2009.

**Average calculated from 2010–2011 to 2014–2015 seasons since nirsevimab was assumed to be introduced 1st November 2009.
Supplementary Table S5. Sensitivity analyses. Impact of the contact matrix assumptions on the results.

While preserving the initial structure of the contact matrix, and instead of assuming a homogeneity of contact rates for children <5 years old, we assumed an increase of contact rates with age until <5 years old (see Adapted Contact Matrix, Supplementary Figure S2). The analysis was re-run without (A) and with (B) calibration and assessed whether the results and their interpretations were changed.

A. Results with adapted contact matrix assuming increase of contacts within age groups <5 years old, without re-calibration of the model

**Assuming nirsevimab has no effect on RSV transmission**

| Period                      | Season     | 0-6 months | 6-12 months | 12-24 months | 2-4 years | 5-65 years | 65+ years | Overall |
|-----------------------------|------------|------------|-------------|--------------|-----------|------------|-----------|---------|
| RSV epidemic season         | 2008-2009  | 0.0%       | 0.0%        | 0.0%         | 0.0%      | 0.0%       | 0.0%      | 0.0%    |
| RSV epidemic season         | 2009-2010  | -49.7%     | -34.9%      | 0.0%         | 0.0%      | 0.0%       | 0.0%      | -23.1%  |
| RSV epidemic season         | 2010-2011  | -49.7%     | -34.9%      | 0.0%         | 0.0%      | 0.0%       | 0.0%      | -23.1%  |
| RSV epidemic season         | 2011-2012  | -49.7%     | -34.9%      | 0.0%         | 0.0%      | 0.0%       | 0.0%      | -23.1%  |
| RSV epidemic season         | 2012-2013  | -49.7%     | -34.9%      | 0.0%         | 0.0%      | 0.0%       | 0.0%      | -23.1%  |
| RSV epidemic season         | 2013-2014  | -49.7%     | -34.9%      | 0.0%         | 0.0%      | 0.0%       | 0.0%      | -23.1%  |
| RSV epidemic season         | 2014-2015  | -49.7%     | -34.9%      | 0.0%         | 0.0%      | 0.0%       | 0.0%      | -23.1%  |
| RSV epidemic season         | Average    | -49.7%     | -34.9%      | 0.0%         | 0.0%      | 0.0%       | 0.0%      | -23.1%  |
| RSV inter-epidemic season  | 2008-2009  | 0.0%       | 0.0%        | 0.0%         | 0.0%      | 0.0%       | 0.0%      | 0.0%    |
| RSV inter-epidemic season  | 2009-2010  | -17.6%     | 0.0%        | 0.0%         | 0.0%      | 0.0%       | 0.0%      | -5.1%   |
| RSV inter-epidemic season  | 2010-2011  | -17.6%     | 0.0%        | 0.0%         | 0.0%      | 0.0%       | 0.0%      | -5.1%   |
| RSV inter-epidemic season  | 2011-2012  | -17.6%     | 0.0%        | 0.0%         | 0.0%      | 0.0%       | 0.0%      | -5.1%   |
| RSV inter-epidemic season  | 2012-2013  | -17.6%     | 0.0%        | 0.0%         | 0.0%      | 0.0%       | 0.0%      | -5.1%   |
| RSV inter-epidemic season  | 2013-2014  | -17.6%     | 0.0%        | 0.0%         | 0.0%      | 0.0%       | 0.0%      | -5.1%   |
| RSV inter-epidemic season  | 2014-2015  | -17.6%     | 0.0%        | 0.0%         | 0.0%      | 0.0%       | 0.0%      | -5.1%   |
| RSV inter-epidemic season  | 2015-2016  | 0.0%       | 0.0%        | 0.0%         | 0.0%      | 0.0%       | 0.0%      | 0.0%    |
| RSV inter-epidemics season | Average*   | -17.6%     | 0.0%        | 0.0%         | 0.0%      | 0.0%       | 0.0%      | -5.1%   |
The RSV epidemic season was defined as the period from November 1st to March 31st. The RSV inter-epidemic period lasted from April 1st to October 30th.

An RSV season was defined as the period from August 1st to July 31st. Nirsevimab was assumed to be introduced from the 1st November 2009.

*Average calculated from 2010 to 2014 since nirsevimab was assumed to be introduced 1st November 2009.

**Average calculated from 2010–2011 to 2014–2015 seasons since nirsevimab was assumed to be introduced 1st November 2009.

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**Assuming nirsevimab reduces RSV viral shedding by 50%**

| Period                  | Season     | 0-6 months | 6-12 months | 12-24 months | 2-4 years | 5-65 years | 65+ years | Overall |
|-------------------------|------------|------------|-------------|--------------|-----------|------------|-----------|---------|
| RSV epidemic season     | 2008-2009  | 0.0%       | 0.0%        | 0.0%         | 0.0%      | 0.0%       | 0.0%      | 0.0%    |
| RSV epidemic season     | 2009-2010  | -54.5%     | -40.4%      | -9.3%        | -11.4%    | -11.9%     | -12.5%    | -30.7%  |
| RSV epidemic season     | 2010-2011  | -53.3%     | -38.1%      | -2.5%        | -7.6%     | -9.1%      | -9.8%     | -27.5%  |
| RSV epidemic season     | 2011-2012  | -49.8%     | -34.1%      | 3.0%         | 2.1%      | 0.9%       | -1.9%     | -22.3%  |
| RSV epidemic season     | 2012-2013  | -52.1%     | -37.2%      | -3.6%        | -3.5%     | -6.1%      | -7.2%     | -26.5%  |
| RSV epidemic season     | 2013-2014  | -50.2%     | -34.7%      | 1.1%         | 1.0%      | -1.7%      | -3.0%     | -23.3%  |
| RSV epidemic season     | 2014-2015  | -50.2%     | -35.0%      | -0.2%        | 0.8%      | -1.6%      | -2.9%     | -23.6%  |
| RSV epidemic season     | Average    | -51.7%     | -36.6%      | -1.9%        | -3.1%     | -5.3%      | -6.2%     | -25.7%  |
| RSV inter-epidemic season | 2008-2009 | 0.0%       | 0.0%        | 0.0%         | 0.0%      | 0.0%       | 0.0%      | 0.0%    |
| RSV inter-epidemic season | 2009-2010 | -25.2%     | -8.9%       | -8.6%        | -12.4%    | -12.4%     | -12.5%    | -14.3%  |
The RSV epidemic season was defined as the period from November 1st to March 31st. The RSV inter-epidemic period lasted from April 1st to October 30th.

An RSV season was defined as the period from August 1st to July 31st. Nirsevimab was assumed to be introduced from the 1st November 2009.

*Average calculated from 2010 to 2014 since nirsevimab was assumed to be introduced 1st November 2009.

**Average calculated from 2010–2011 to 2014–2015 seasons since nirsevimab was assumed to be introduced 1st November 2009.
B. Results with adapted contact matrix assuming increase of contacts within age groups <5 years old, with re-calibration of the model

Assuming nirsevimab has no effect on RSV transmission

| Period                | Season       | 0-6 months | 6-12 months | 12-24 months | 2-4 years | 5-65 years | 65+ years | Overall |
|-----------------------|--------------|------------|-------------|--------------|-----------|------------|-----------|---------|
| RSV epidemic season   | 2008-2009    | 0.0%       | 0.0%        | 0.0%         | 0.0%      | 0.0%       | 0.0%      | 0.0%    |
| RSV epidemic season   | 2009-2010    | -49.7%     | -34.9%      | 0.0%         | 0.0%      | 0.0%       | 0.0%      | -23.8%  |
| RSV epidemic season   | 2010-2011    | -49.7%     | -34.9%      | 0.0%         | 0.0%      | 0.0%       | 0.0%      | -23.8%  |
| RSV epidemic season   | 2011-2012    | -49.7%     | -34.9%      | 0.0%         | 0.0%      | 0.0%       | 0.0%      | -23.8%  |
| RSV epidemic season   | 2012-2013    | -49.7%     | -34.9%      | 0.0%         | 0.0%      | 0.0%       | 0.0%      | -23.8%  |
| RSV epidemic season   | 2013-2014    | -49.7%     | -34.9%      | 0.0%         | 0.0%      | 0.0%       | 0.0%      | -23.8%  |
| RSV epidemic season   | 2014-2015    | -49.7%     | -34.9%      | 0.0%         | 0.0%      | 0.0%       | 0.0%      | -23.8%  |
| RSV epidemic season   | Average      | -49.7%     | -34.9%      | 0.0%         | 0.0%      | 0.0%       | 0.0%      | -23.8%  |
| RSV inter-epidemic season | 2008-2009 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
|---------------------------|-----------|------|------|------|------|------|------|------|------|
| RSV inter-epidemic season | 2009-2010 | -17.5% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | -5.3% |
| RSV inter-epidemic season | 2010-2011 | -17.5% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | -5.3% |
| RSV inter-epidemic season | 2011-2012 | -17.5% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | -5.3% |
| RSV inter-epidemic season | 2012-2013 | -17.5% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | -5.3% |
| RSV inter-epidemic season | 2013-2014 | -17.5% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | -5.3% |
| RSV inter-epidemic season | 2014-2015 | -17.5% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | -5.3% |
| RSV inter-epidemic season | 2015-2016 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| RSV inter-epidemics season Average* | -17.5% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | -5.3% |
| Overall 2008-2009 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Overall 2009-2010 | -41.1% | -26.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | -19.0% |
| Overall 2010-2011 | -41.1% | -26.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | -19.0% |
| Overall 2011-2012 | -41.1% | -26.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | -19.0% |
| Overall 2012-2013 | -41.1% | -26.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | -19.0% |
| Overall 2013-2014 | -41.1% | -26.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | -19.0% |
| Overall 2014-2015 | -41.1% | -26.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | -19.0% |
| Overall 2015-2016 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| RSV season Average** | -41.1% | -26.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | -19.0% |

The RSV epidemic season was defined as the period from November 1st to March 31st. The RSV inter-epidemic period lasted from April 1st to October 30th.

An RSV season was defined as the period from August 1st to July 31st. Nirsevimab was assumed to be introduced from the 1st November 2009.

*Average calculated from 2010 to 2014 since nirsevimab was assumed to be introduced 1st November 2009.

**Average calculated from 2010–2011 to 2014–2015 seasons since nirsevimab was assumed to be introduced 1st November 2009.
Assuming nirsevimab reduces RSV viral shedding by 50%

| Period                    | Season   | 0-6 months | 6-12 months | 12-24 months | 2-4 years | 5-65 years | 65+ years | Overall |
|---------------------------|----------|------------|-------------|--------------|-----------|------------|-----------|---------|
| RSV epidemic season       | 2008-2009 | 0.0%       | 0.0%        | 0.0%         | 0.0%      | 0.0%       | 0.0%      | 0.0%    |
| RSV epidemic season       | 2009-2010 | -54.9%     | -40.8%      | -10.0%       | -12.7%    | -13.2%     | -13.8%    | -31.9%  |
| RSV epidemic season       | 2010-2011 | -51.9%     | -36.1%      | 0.6%         | -4.4%     | -6.2%      | -6.9%     | -25.8%  |
| RSV epidemic season       | 2011-2012 | -50.9%     | -35.4%      | 0.2%         | -0.8%     | -3.6%      | -4.5%     | -24.9%  |
| RSV epidemic season       | 2012-2013 | -51.7%     | -36.6%      | -2.1%        | -2.8%     | -5.6%      | -6.7%     | -26.4%  |
| RSV epidemic season       | 2013-2014 | -50.0%     | -34.5%      | 1.3%         | 1.6%      | -1.4%      | -2.7%     | -23.7%  |
| RSV epidemic season       | 2014-2015 | -50.7%     | -35.5%      | -1.0%        | -0.3%     | -2.9%      | -4.3%     | -25.0%  |
| RSV epidemic season       | Average ** | -51.7%     | -36.5%      | -1.8%        | -3.2%     | -5.5%      | -6.5%     | -26.3%  |
| RSV inter-epidemic season | 2008-2009 | 0.0%       | 0.0%        | 0.0%         | 0.0%      | 0.0%       | 0.0%      | 0.0%    |
| RSV inter-epidemic season | 2009-2010 | -25.1%     | -8.5%       | -8.1%        | -12.8%    | -12.9%     | -12.9%    | -14.3%  |
| RSV inter-epidemic season | 2010-2011 | -23.8%     | -5.5%       | -2.7%        | -7.9%     | -9.1%      | -9.3%     | -11.1%  |
| RSV inter-epidemic season | 2011-2012 | -21.9%     | -4.8%       | -3.0%        | -5.2%     | -7.3%      | -7.7%     | -10.1%  |
| RSV inter-epidemic season | 2012-2013 | -22.6%     | -5.3%       | -4.0%        | -5.8%     | -7.9%      | -8.4%     | -10.8%  |
| RSV inter-epidemic season | 2013-2014 | -20.9%     | -3.8%       | -2.4%        | -3.2%     | -5.4%      | -6.1%     | -8.9%   |
| RSV inter-epidemic season | 2014-2015 | -21.2%     | -4.2%       | -3.5%        | -3.9%     | -5.8%      | -6.6%     | -9.5%   |
| RSV inter-epidemic season | 2015-2016 | -2.5%      | -1.2%       | -0.2%        | -0.3%     | -2.1%      | -2.8%     | -1.5%   |
| RSV inter-epidemics season | Average* | -22.6%     | -5.3%       | -3.9%        | -6.5%     | -8.1%      | -8.5%     | -10.8%  |
| Overall                   | 2008-2009 | 0.0%       | 0.0%        | 0.0%         | 0.0%      | 0.0%       | 0.0%      | 0.0%    |
| Overall                   | 2009-2010 | -46.9%     | -32.7%      | -9.5%        | -12.7%    | -13.1%     | -13.6%    | -27.4%  |
| Overall                   | 2010-2011 | -44.4%     | -28.5%      | -0.2%        | -5.3%     | -6.9%      | -7.6%     | -22.0%  |
| Overall                   | 2011-2012 | -43.1%     | -27.8%      | -0.6%        | -1.9%     | -4.5%      | -5.4%     | -21.1%  |
| Overall                   | 2012-2013 | -44.0%     | -28.7%      | -2.6%        | -3.6%     | -6.2%      | -7.1%     | -22.4%  |
| Overall                   | 2013-2014 | -42.2%     | -26.8%      | 0.4%         | 0.4%      | -2.4%      | -3.6%     | -19.9%  |
| Overall                   | 2014-2015 | -42.8%     | -27.6%      | -1.6%        | -1.2%     | -3.6%      | -4.9%     | -21.0%  |
| Overall                   | 2015-2016 | -2.5%      | -1.2%       | -0.2%        | -0.3%     | -2.1%      | -2.8%     | -1.5%   |
| RSV season                | Average** | -43.9%     | -28.7%      | -2.4%        | -4.0%     | -6.1%      | -7.0%     | -22.3%  |
The RSV epidemic season was defined as the period from November 1st to March 31st. The RSV inter-epidemic period lasted from April 1st to October 30th.

An RSV season was defined as the period from August 1st to July 31st. Nirsevimab was assumed to be introduced from the 1st November 2009.

*Average calculated from 2010 to 2014 since nirsevimab was assumed to be introduced 1st November 2009.

**Average calculated from 2010–2011 to 2014–2015 seasons since nirsevimab was assumed to be introduced 1st November 2009.
Supplementary Figure S1. Model diagram

Footnote: Newborns benefit from maternal antibody protection (M), after which they become susceptible (S₀) to primary RSV infection. After each infection (I₁, I₂ and I₃), individuals recover and acquire short-term waning immunity (P₁, P₂, P₃), before becoming susceptible again (S₁, S₂). The model outcome is the number of RSV-MALTRIs.

\[
\lambda = \beta_0 (1 + b \cos(2\pi(t - \varphi))) I \\
I = I_1 + \rho_1 I_2 + \rho_2 I_3
\]
The US contact matrix from Prem et al. has been rendered symmetric, and then extended and rearranged to fit the model age structure, assuming homogeneity of contacts within age groups.
Supplementary Figure S3 Observed number of RSV-MALRTIs by season in the US

Footnote: Observed data were based on RSV-MALRTIs reported between 1 January 2008 and 31 December 2015 and were obtained from the Truven Health Marketscan® Commercial Claims and Encounters, and Medicare Supplemental and Coordination of Benefits databases (Truven Health Analytics, Michigan, USA). The numbers of RSV-MALRTIs were calculated for the general US population the age-stratified US Census population estimates and projections from 2008 to 2015.

A. Overall population
B. By 1-month interval age groups up to 24 months

Y-axes represent the same scale for each age group (0 to 15000 RSV-MALRTIs); months are plotted on the x-axis, representing 7 seasons from 2009 to 2015.
Supplementary Figure S4. Observed number of RSV-MALRTIs by season and age group in the US

Number of RSV-MALRTIs by season and age groups in the US

- 0-6 months
- 6-12 months
- 12-18 months
- 18-24 months
- 2-4 years
- 5-65 years
- 65+ years

Seasons:
- 2009-2010
- 2010-2011
- 2011-2012
- 2012-2013
- 2013-2014
- 2014-2015

Number of RSV-MALRTIs
- 0
- 50000
- 100000
- 150000
Supplementary Figures S5 and S6. Model calibration.

The model’s outputs closely mirrored the observed data for all but the 2–4 years age group (Supplementary Figure S5). In accordance with this, the age-specific RMSE varied between 215.7 and 1650.8 for 31 age groups; but deviated for the 2–4 years age group, with a RMSE of 7371.9 (Supplementary Figure S6). The overall $R^2$ was 92.2% (varying between 41.8% and 93.1% depending on age groups) indicating strong similarity between observed and modelled data.

Supplementary Figure S5 Observed and modelled overall number of RSV-MALRTIs by age group in the US

A. For the entire period, 2009 to 2015 by age group up to 75+ years
B. By season and age group up to 24 months

Observed data are plotted as blue dots; modelled data are in red. Y-axes represent the same scale for each age group (0 to 15000 MALRTIs); months are plotted on the x-axis, representing 7 seasons from 2009 to 2015.
Supplementary figure S6. Model calibration.

The number of RSV-MALRTIs in each age group during each calendar month was assumed to follow a Poisson distribution, assuming the mean of RSV-MALRTIs for any single age group is equal to the model-predicted number of RSV episodes for that age group. Numerical goodness-of-fit was determined by calculating the root mean square error (RMSE) and R-squared.

A. Goodness-of-fit as determined by age-specific root mean square error
B. Goodness-of-fit as determined by R-squared
Supplementary Figure S7. Potential impact of nirsevimab (scenario 2) on expected number of RSV-MALTRIs per month, by age group
Supplementary Figure S8. Sensitivity analyses

Univariate probabilistic sensitivity analyses were performed to assess the potential impact of the duration of maternal protective immunity between 1 and 3 months, the duration of short-term protection between 6 and 24 months, and the transmission parameter between $\beta_0/2$ and $1.5\cdot\beta_0$ on the model with no intervention. For each parameter assessed a uniform distribution was used for sampling and 100 runs were performed. Results were reported as fanplots based on percentiles of the results distribution.
For the models with interventions (scenarios 1 and 2), univariate probabilistic sensitivity analyses were performed for a coverage rate of nirsevimab varying between 0% and 100%, and for a potential reduction in transmission varying from 0% to 100%. A uniform distribution was used for sampling and 100 runs were performed. Results were reported as fanplots based on percentiles of the results distribution.
Supplementary Figure S9. Sensitivity analyses. Impact of a potential overdiagnosis of RSV during RSV inter-seasons, we re-calibrated the model assuming a 5-fold reduction of RSV-MALRTIs incidence in between April and October each RSV season.
Supplementary Figure S10. Sensitivity analysis per age group on coverage rate
Sensitivity analysis to nirsevimab coverage - 65+ years
(Blue squares represent expected nirsevimab impact according to scenario 2)
Supplementary Figure S11. Multivariate sensitivity analysis overall and per age groups on duration of maternal protective immunity, duration of short-term protection and transmission probability
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