Defining the RSV season

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For RSV surveillance, we use data from the sentinel network of laboratories, used to report information on the number of positive RSV tests. As this is a sentinel (hence non-exhaustive) data collection of which we do not know exactly which proportion of the Belgian population is covered, we do not calculate incidences based on this data, but rather report on the number of positive tests reported.
Below you can find a figure detailing this RSV surveillance data for the last 10 seasons.

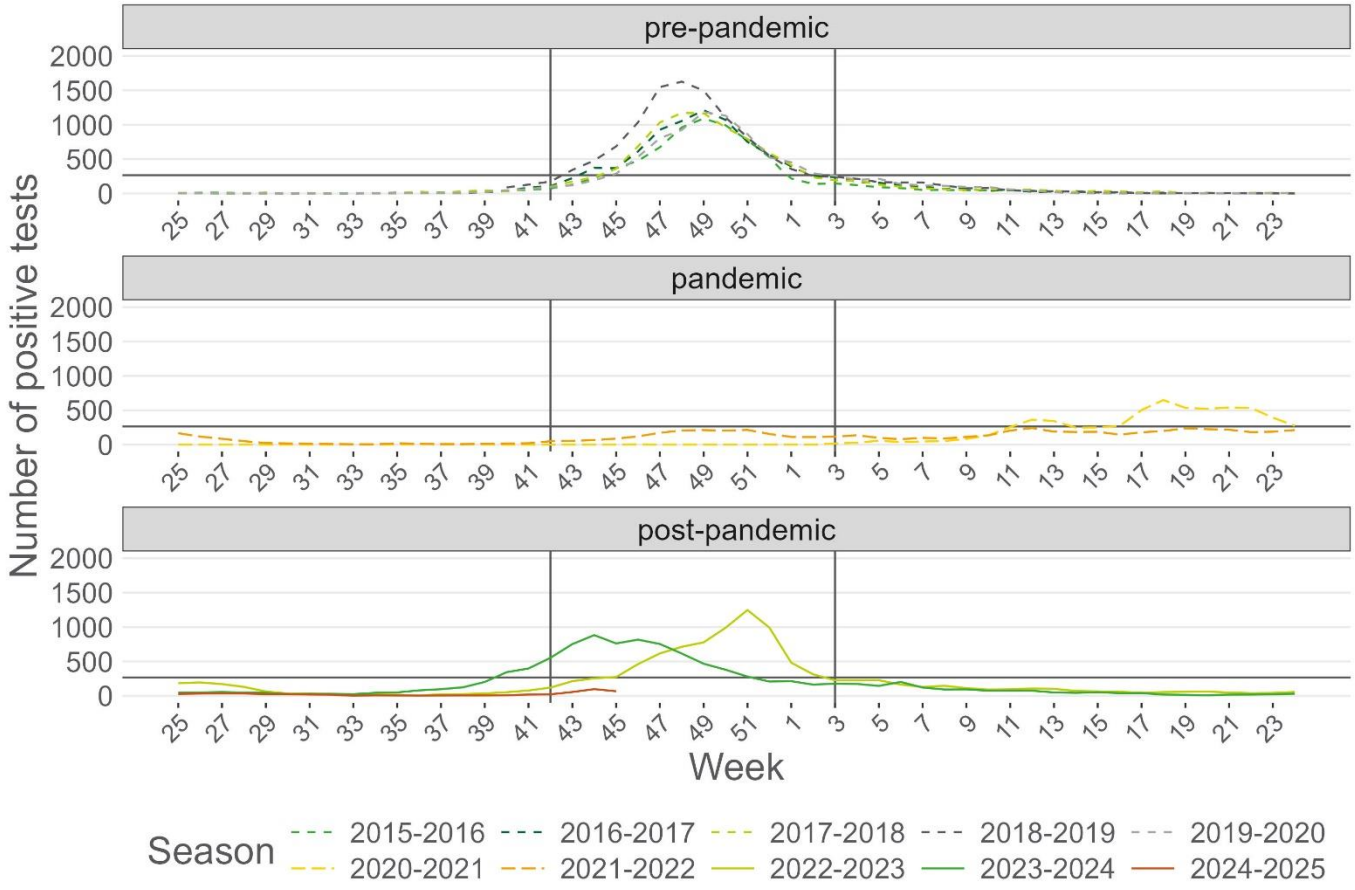

Figure 1 • RSV circulation (number of positive tests) in Belgium as reported through the sentinel network of laboratories, for the past nine and the current season. Split by Sars-CoV-2 period. The horizontal line indicates the epidemic threshold, vertical lines are indicative of the pre-pandemic RSV circulation.

Before the SARS-CoV-2 pandemic, RSV had a very marked seasonality in Belgium, with the highest circulation between October and January, and a peak in December. During the pandemic, the measures to avoid the spread of COVID-19 had a marked effect on RSV as well. During the seasons 2020-2021 and 2021-2022 there was a very low RSV circulation in the pre-pandemic seasonal period and more circulation than usual outside of the pre-pandemic seasonal period.
Since the end of the pandemic, the RSV circulation has not fully returned to its pre-pandemic seasonality. In 2022-2023, RSV circulation ended late compared to pre-pandemic circulation, while in the season 2023-2024, RSV circulation started early.
It is clear that SARS-CoV-2 presence (and its current absence of a clear seasonality) remains to have a disrupting effect on the circulation and seasonality of other respiratory viruses as well. We therefore are wary of defining the RSV season as a fixed time period of the year (as could have been possible pre-pandemic).

In light of new preventive RSV strategies, encompassing multiple tools with different reimbursement criteria, we believe that it would however be optimal to fix the start of the season at a specific time period, which could nonetheless be re-evaluated on each spring, to provide a pragmatic definition in the context of fluctuating seasonality. Given the timing of RSV circulation in pre- and post-pandemic years, we propose October 1st as the fixed start of the RSV season. This can and should be re-assessed in a few years, as the seasonality of RSV will likely stabilise over time.
On the contrary, it is our opinion that, given the lack of SARS-CoV-2 seasonality at this stage and subsequent impact on other respiratory viruses, it would be best to opt for a definition that allows us to flexibly define the end of each season based on the observed circulation.

Apart from the concept of the RSV season, it is also important to be aware of the concept of the RSV epidemic period. This is the period with the most prominent / highest circulation and defining this period is more straightforward. Based on the known circulation of RSV in the previous seasons, the epidemic threshold can be defined. When circulation rises above this threshold, this marks the start of the epidemic period. When circulation falls underneath this threshold, this marks the end of the epidemic period.
At Sciensano, we calculate this epidemic threshold using a commonly used statistical methodology, i.e. the Moving Epidemic Method (MEM). Currently, the RSV epidemic threshold was based on 10 previous seasons, running over the last 12 seasons but excluding the seasons occurring during the COVID-19 pandemic (seasons 2020-2021 and 2021-2022).
Apart from the epidemic period, this threshold can be used as a tool to define the year-by-year RSV seasonality as well.

With the exception of season 2023-2024, we see that once the number of positive RSV tests reported in the sentinel network of laboratories falls underneath the epidemic threshold, it returns to a low level within the course of a couple of weeks (see Figure 1).
We therefore propose the dynamic definition of the end of the RSV season as follows:

> The RSV season is considered as ended when the number of positive RSV tests reported in the sentinel network of laboratories falls underneath the epidemic threshold and remains under this epidemic threshold for three consecutive weeks.

Sciensano's year-round RSV surveillance makes it possible to use such a flexible definition and allows for a yearly official communication on the end of the RSV season. This communication can be used both to define the end of the current season in the use of any RSV preventive strategy (current and future) and to plan the immunisation campaigns of the following seasons, optimising the use of each preventive strategy at the most appropriate moment.