

The increasing incidence of Respiratory Syncytial Virus (RSV) in Ireland

Keith Patterson, Sandra Redmond
Salutem Insights Ltd
info@saluteminsights.com

BACKGROUND

Respiratory syncytial virus (RSV) is a common respiratory virus which causes mild, cold-like symptoms in most people, who quickly recover after a week or two [1]. However, the virus can be much more serious, especially for infants, young children, and older adults and can result in a hospital stay [1]. It is highly contagious and can easily spread through contact with contaminated hands, hard surfaces, and other objects [1]. Furthermore, it is a significant cause of infection and outbreaks in hospitals, neonatal units, day units and nursing homes [1].

RSV outbreaks usually occur during the winter months of the year with the highest numbers of infections usually reported in December and January [1]. Normally, the sharp winter RSV peak varies little in timing or size from one year to the next, unlike influenza which is much less predictable in its timing. However, RSV is starting earlier and peaking earlier in recent seasons [1]. This trend was also seen internationally and is a result of the COVID-19 pandemic [1, 2].

RSV has been a notifiable disease in Ireland since January 2012 [1]. RSV activity in Ireland is monitored and reported by the Health Protection Surveillance Centre (HPSC) [1].

OBJECTIVE

The objective of this study is to understand RSV incidence over time, by age group: infants (aged ≤2 years), older adults (aged ≥65 years) and other (children and adults) (aged 3–64 years) and by seasonality (RSV season and non-RSV season) in Ireland.

METHODS

A full dataset of RSV incidence in Ireland for the years 2012–2023 was obtained from the HPSC [3]. An RSV season was defined as the weeks when RSV detections are ≥1.2% of total RSV-positive specimens [4]. The RSV season runs from week 40 in one year to week 20 the following year (October to May) while the non-RSV season runs from week 21 (June) in one year to week 39 (September) the following year [3]. Descriptive analysis of the data, by age group and seasonality was then conducted to understand the trends and patterns of RSV incidence since 2012.

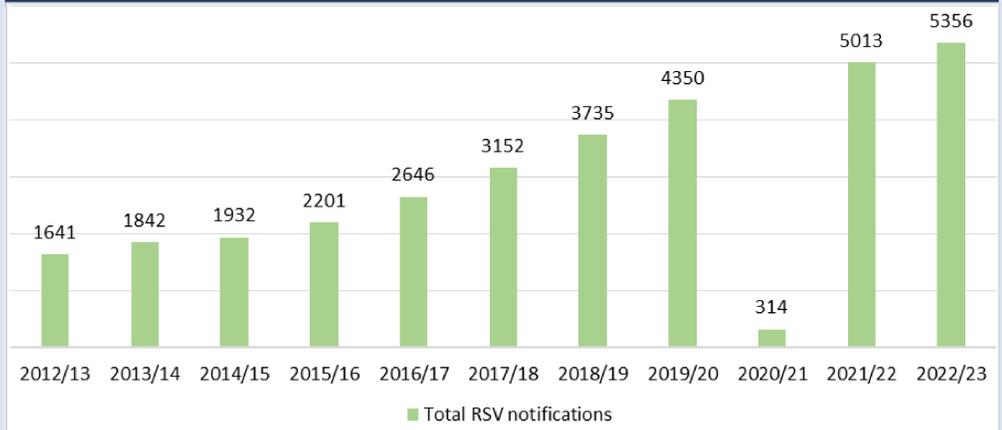
RESULTS

Total RSV notifications in Ireland have increased by 226% since 2012/13, with 5,356 notifications reported in 2022/23 (Figure 1). However, the total notifications were as low as 314 in 2020/21 due to the restrictions imposed on the public because of the COVID-19 pandemic [5]. Up to 2020, around over 94% of cases occurred during the RSV season (Figure 2). However, this pattern seems to be changing since the COVID-19 pandemic, as the RSV season seems to be starting earlier (Figure 2). Children aged 0–4 years account for at least 71% of RSV cases every year (Figure 3). However, the proportion for this age group has been decreasing in recent seasons among the total RSV population (Figure 3), although the data for the 2022/23 season is incomplete because the data cut off was on the 17/12/2022. Alternatively, the number of older adults with RSV has increased almost six-fold between the 2012/13 and 2022/23 seasons (Figure 4) and represented 22% of all notifications in 2022/23 (Figure 3).

CONCLUSION

The number of RSV cases, especially in infants and older adults, has increased significantly over the past decade in Ireland. This may be due to an increase of RSV infection or because more hospitals are testing for RSV. The biggest rise is in older adults who are more likely to be hospitalised for RSV.

Figure 1: Total RSV notifications 2012/13–2022/23 in all age groups



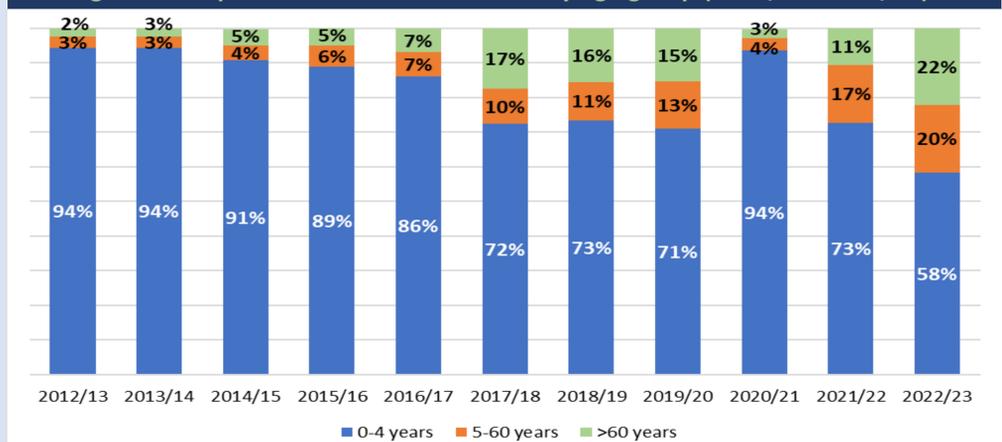
Footnotes: 'Season' refers to October–May period, while 'non season' refers to June–September. The data for the 2022/23 season has a cut-off date of 17/12/2022.
Source: Health Protection Surveillance Centre (HPSC) database, special request (2022).

Figure 2: Total RSV notifications by season (2012–2023) in all age groups

Year	RSV season (Oct–May)	Non-RSV season (June–Sept)	Total	% in RSV season (Oct–May)
2012/13	1,607	34	1,641	98%
2013/14	1,768	74	1,842	96%
2014/15	1,889	43	1,932	98%
2015/16	2,077	124	2,201	94%
2016/17	2,582	64	2,646	98%
2017/18	3,100	52	3,152	98%
2018/19	3,626	109	3,735	97%
2019/20	4,345	5	4,350	100%
2020/21 ^a	9	305	314	3%
2021/22	4,442	571	5,013	89%
2022/23 ^b	5,356	0	5,356	100%

Footnotes: ^aThe low number of notifications reported during this season is due to the COVID-19 pandemic.
^bData up to 17/12/2022, therefore the 2022/23 season is not complete.
Source: Health Protection Surveillance Centre (HPSC) database, special data request (2022).

Figure 3: Proportion of RSV notifications by age group (2012/13–2022/23)^a



Footnotes: ^aData up to 17/12/2022, therefore the 2022/23 season not complete.
Source: Health Protection Surveillance Centre (HPSC) database, special request (2022).

Figure 4: No. RSV notifications by age group and season (2012/13–2022/23)

Age	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23 ^a
0–4 years	1,547	1,736	1,751	1,956	2,275	2,280	2,740	3,090	294	3,638	3,116
5–60 years	55	59	85	134	185	319	413	586	11	842	1,056
>60 years	38	47	89	111	185	551	582	670	8	528	1,184
Age unknown	1	0	7	0	1	2	0	4	1	5	0
Grand Total	1,641	1,842	1,932	2,201	2,646	3,152	3,735	4,350	314	5,013	5,356

Footnotes: ^aData up to 17/12/2022, therefore the 2022/23 season is not complete.
Source: Health Protection Surveillance Centre (HPSC) database, special data request (2022).

REFERENCES

- Health Protection Surveillance Centre (HPSC). Respiratory Syncytial Virus (RSV) What is Respiratory Syncytial Virus? (2022) [Available from: <https://www.hpsc.ie/a-z/respiratory/respiratorysyncytialvirus/factsheet/#:~:text=Adults%20with%20weakened%20immune%20systems,of%20respiratory%20infections%20in%20adults>].
- WebMD. Watch Out, Adults: Respiratory Syncytial Virus (RSV) Isn't Just for Babies (2022) [Available from: <https://www.webmd.com/lung/rsv-affects-whole-family>].
- Health Protection Surveillance Centre (HPSC) database special request, HPSC information: Salutem Insights correspondence with HPSC (Dec 2022) (2022).
- Broberg, E.K., et al., Seasonality and geographical spread of respiratory syncytial virus epidemics in 15 European countries, 2010 to 2016. Euro Surveill, 2018. 23(5).
- Irish Times. "Coronavirus: Schools, colleges and childcare facilities in Ireland to shut" (2020). [Available from: <https://www.irishtimes.com/news/health/coronavirus-schools-colleges-and-childcare-facilities-in-ireland-to-shut-1.4200977>].