

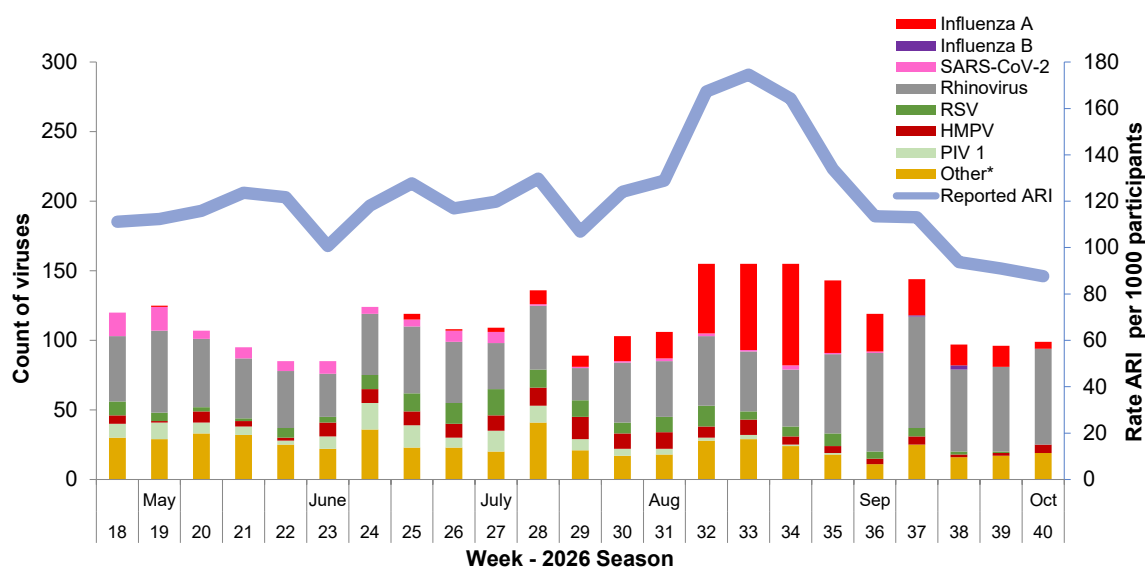


WellKiwis weekly report on acute respiratory illness and associated viruses

Week 40 ending 4 October 2026

The surveillance for community cohort-based acute respiratory illness (ARI) or influenza-like illness (ILI) provides evidence to inform public health and clinical practice and to reduce the impact of influenza virus infection and other important respiratory pathogens such as SARS-CoV-2 (causing COVID-19 infection). As part of the WellKiwis influenza study, this weekly report summarises data obtained from the WellKiwis cohorts in Wellington. The report includes incidence and viruses for community cohort ARI cases for the past week as well as the cumulative period since 27 April 2026.

Figure 1 shows the weekly rate of acute respiratory illness (ARI) and associated viruses detected among the WellKiwis cohort participants during the study period.



Note: other viruses include enterovirus, adenovirus and parainfluenza virus types 2 and 3. The left axis indicates number of respiratory viruses detected among participants each week. The different coloured bars on the graph represent the count of the different respiratory viruses detected. The right axis shows weekly ARI rates - the blue line is the weekly rate of ARI reported by participants (per 1000). (Note: The case definition¹ in 2020–2026 has been widened compared to previous years, 2018–2019. This is to increase the sensitivity to detecting influenza as well as SARS-CoV-2 that causes COVID-19 infection). X-axis is based on the date of symptom onset.

The case definition in 2020–26: acute respiratory illness (ARI) with fever or feverishness and/or one of following symptoms (cough, running nose, wheezing, sore throat, shortness of breath, loss of sense of smell/taste) with onset in the past 10 days). And a clinician's judgement that the illness is due to an infection. The case definition in 2018 and 2019: influenza-like illness (ILI) with cough and fever/measured fever of $\geq 38^{\circ}\text{C}$ and onset within the past 10 days).



The WellKiwis cohort is an excellent platform to understand incidence, risk factors and household transmission caused by influenza and other respiratory viruses in our community.

Tables 1 and 2 below indicate all swabs tested for influenza and other non-influenza respiratory viruses from week 18 (starting 27 April) to this week.

Table 1. Non-influenza respiratory viruses among ARI cases, since 27 April 2026

<i>Non-influenza respiratory viruses</i>	WellKiwis Households	Wellkiwis Adults	WellKiwis Infants	Total
No. of specimens tested	2225	320	1496	4041
No. of positive specimens (%) ¹	945 (42.5)	113 (35.3)	937 (62.6)	1995 (49.4)
Respiratory syncytial virus (RSV)	66	9	109	184
Parainfluenza 1 (PIV1)	56	7	78	141
Parainfluenza 2 (PIV2)	30	0	28	58
Parainfluenza 3 (PIV3)	8	0	33	41
Rhinovirus (RV)	585	73	464	1122
Adenovirus (AdV)	81	2	181	264
Human metapneumovirus (HMPV)	65	12	97	174
Enterovirus	92	9	93	194
SARS-CoV-2	56	5	42	103
Single virus detection (% of positives)	856 (90.6)	109 (96.5)	763 (81.4)	1728 (86.6)
Multiple virus detection (% of positives)	89 (9.4)	4 (3.5)	174 (18.6)	267 (13.4)

¹ Positive specimens may be positive for more than one virus

Table 2. Influenza respiratory viruses among ARI cases, since 27 April 2026

<i>Influenza viruses</i>	WellKiwis Households	Wellkiwis Adults	WellKiwis Infants	Total
No. of specimens tested	2224	320	1496	4040
No. of positive specimens (%) ¹	223 (10.0)	42 (13.1)	128 (8.6)	393 (9.7)
Influenza A	221	41	127	389
A (not subtyped)	2	5	4	11
A(H1N1)pdm09	102	22	52	176
A(H1N1)pdm09 by PCR	102	22	52	176
A/Missouri/11/2025 (H1N1)pdm09-like	0	0	0	0
A(H3N2)	117	14	71	202
A(H3N2) by PCR	117	14	71	202
A/Sydney/ 1359/2024 (H3N2)-like	0	0	0	0
Influenza B	2	1	1	4
B (lineage not determined)	0	0	0	0
B/Yamagata lineage	0	0	0	0
B/Yamagata lineage by PCR	0	0	0	0
B/Phuket/3073/2013 – like	0	0	0	0
B/Victoria lineage	2	1	1	4
B/Victoria lineage by PCR	2	1	1	4
B/Austria/1359417/2021-like	0	0	0	0
Influenza and non-influenza co-detection (% +ve)	16 (7.2)	3 (7.1)	21 (16.4)	40 (10.2)

¹ Positive specimens may be positive for more than one virus

Note: The PCR positive cases only include those participants with acute respiratory illnesses.

Table 3 below indicates the demographic status of ARI and influenza infection among WellKiwis participants.

Table 3. Demographic status of ARI and influenza infection, since 27 April 2026

Characteristics	ARI cases among WellKiwis participants		Influenza cases among WellKiwis participants	
	ARI Cases	ARI incidence (per 100)	Influenza Cases	Influenza incidence (per 100)
Overall	7322	233.3 (228.3, 238.5)	393	12.5 (11.3, 13.8)
<i>Age group (years)</i>				
<1	557	472.0 (437.4, 508.1)	12	10.2 (5.3, 17.7)
1–4	2168	365.6 (351.6, 380.0)	117	19.7 (16.3, 23.6)
5–19	1305	226.2 (214.6, 238.1)	115	19.9 (16.5, 23.9)
20–34	495	235.7 (216.4, 256.2)	21	10.0 (6.2, 15.3)
35–49	2062	245.5 (235.5, 255.7)	86	10.2 (8.2, 12.6)
50–64	502	104.8 (96.0, 114.1)	32	6.7 (4.6, 9.4)
≥65	233	72.6 (63.7, 82.3)	10	3.1 (1.5, 5.7)
<i>Ethnicity</i>				
Māori	718	223.7 (208.3, 239.7)	44	13.7 (10.0, 18.4)
Pacific peoples	366	300.0 (271.8, 330.0)	29	23.8 (15.9, 34.1)
Asian	700	252.7 (235.3, 271.0)	39	14.1 (10.0, 19.2)
European and Other	5538	229.0 (223.3, 234.8)	281	11.6 (10.3, 13.1)
<i>Sex</i>				
Female	4041	230.0 (223.3, 236.8)	218	12.4 (10.8, 14.2)
Male	3274	238.1 (230.4, 246.0)	175	12.7 (10.9, 14.8)
Other	7	116.7 (47.5, 234.0)	0	0.0 (0.0, 60.7)

APPENDIX

The WellKiwis influenza study consists of three longitudinal cohorts in Wellington New Zealand. The overarching aim is to investigate how first or prior exposure to influenza, through infection or vaccine, influences immune responses to subsequent exposures and how transmission within households and communities contributes to disease burden, illness severity, and population risk.

PHF Science (formerly ESR) has a long history of leading influenza surveillance and research programme called SHIVERS (Southern Hemisphere Influenza and Vaccine Effectiveness Research and Surveillance). The first iteration was funded from the United States Centers for Disease Control and Prevention during 2012–2017. The WellKiwis influenza study, funded from the US-National Institute of Allergy and Infectious Diseases and Flu Lab, is the second, third and fourth iterations of SHIVERS on influenza virus, immunity and vaccine.

The WellKiwis adult cohort (i.e. SHIVERS-II) follows a group of ~2000 Wellington adults aged ≥ 20 years. It was established in Wellington in 2018 and is ongoing till 2028. It focuses on adults' immune responses to the flu and flu vaccinations. The study follows participants who provide one annual blood sample each year. During the influenza surveillance period (May–September), the study follows participants weekly and collects respiratory specimens from those who report acute respiratory illness/influenza-like illness (ILI). These specimens are then tested for influenza, SARS-CoV-2 and non-influenza respiratory viruses. Additional samples (blood or swab) are needed only if the participant has a flu infection or vaccination.

The WellKiwis infant cohort (i.e. SHIVERS-III) is a study about influenza immunity in children. The study is to follow new-borns from birth to pre-teen years to see how a child's first encounter to the flu virus or vaccine shapes their immune responses to subsequent exposures to flu as the child grows between 2019 and 2032. The aim is to enrol 850 Wellington mother-infant pairs. Once enrolled, study staff monitor the child's flu-like illness during the winter period through regular surveys and ARI/ILI swab collection and testing. A cord blood or baseline blood and one annual blood from the child are needed each year. Additional samples (blood or swab) are needed only if the child has a flu infection or vaccination.

The WellKiwis household cohort (i.e. SHIVERS-IV) study follows ~450 families for up to seven years (2021–2028). In addition to understand how their prior flu exposures shape their immunity to subsequent flu exposures, it also aims to understand how the flu virus spreads from an infected person to others in a household setting. Once enrolled, study staff monitor the household's ARI/ILI during the winter period through regular surveys and swab collection and testing. A once-only baseline blood and one annual blood from each household member are needed each year. Additional samples (blood or swab) are needed only if a household member has a flu infection or vaccination.

WellKiwis is a multi-centre and multi-disciplinary collaboration between PHF Science, Hutt Valley District Health Board, Regional Public Health, Capital & Coast District Health Board, University of Otago, University of Auckland, participating general practices, Primary Health Organisations, Wellington Maternity Health Professionals and St Jude Children's Hospital in Memphis, USA.

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