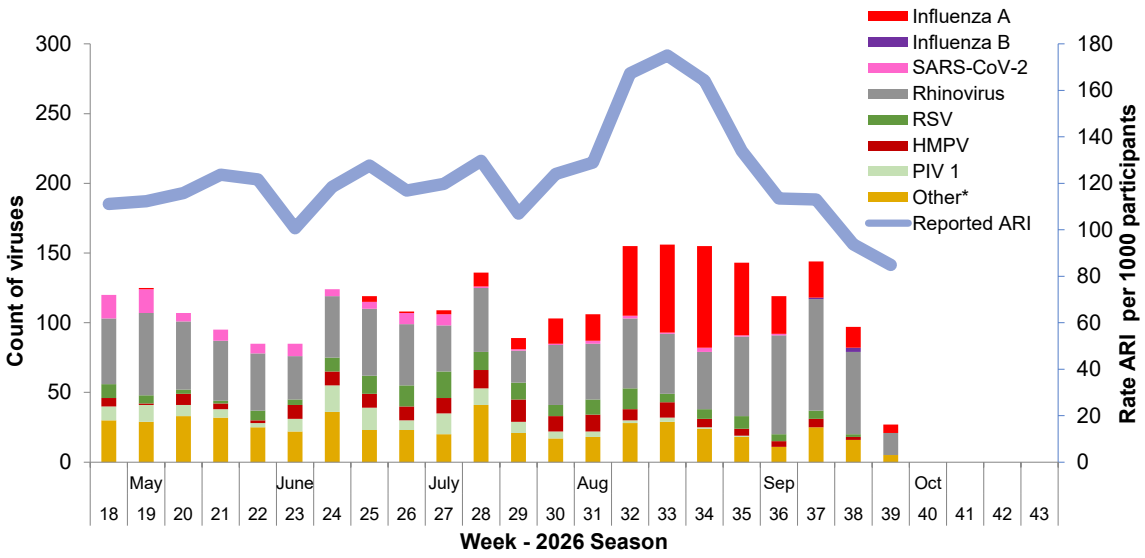
WellKiwis weekly report on acute respiratory illness and associated viruses

Week 39 ending 27 September 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 definition[1] 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 ≥38°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

Non-influenza respiratory viruses	WellKiwis Households	Wellkiwis Adults	WellKiwis Infants	Total
No. of specimens tested	**2102**	**305**	**1418**	**3825**
No. of positive specimens (%)[1]	874 (41.6)	107 (35.1)	879 (62.0)	1860 (48.6)
Respiratory syncytial virus (RSV)	66	9	108	183
Parainfluenza 1 (PIV1)	56	7	78	141
Parainfluenza 2 (PIV2)	30	0	27	57
Parainfluenza 3 (PIV3)	7	0	32	39
Rhinovirus (RV)	521	69	418	1008
Adenovirus (AdV)	77	2	163	242
Human metapneumovirus (HMPV)	61	10	95	166
Enterovirus	90	9	89	188
SARS-CoV-2	56	5	42	103
Single virus detection (% of positives)	788 (90.2)	103 (96.3)	719 (81.8)	1610 (86.6)
Multiple virus detection (% of positives)	86 (9.8)	4 (3.7)	160 (18.2)	250 (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

Influenza viruses	WellKiwis Households	Wellkiwis Adults	WellKiwis Infants	Total
No. of specimens tested	**2101**	**305**	**1418**	**3824**
No. of positive specimens (%)[1]	215 (10.2)	38 (12.5)	127 (9.0)	380 (9.9)
Influenza A	213	37	126	376
A (not subtyped)	5	5	6	16
A(H1N1)pdm09	92	20	48	160
A(H1N1)pdm09 by PCR	92	20	48	160
A/Missouri/11/2025 (H1N1)pdm09-like	0	0	0	0
A(H3N2)	116	12	72	200
A(H3N2) by PCR	116	12	72	200
A/Sydney/ 1359/2024 (H3N2)-like	0	0	0	0
Influenza B	2	1	1	4
B (lineage not determined)	2	1	0	3
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	0	0	1	1
B/Victoria lineage by PCR	0	0	1	1
B/Austria/1359417/2021-like	0	0	0	0
Influenza and non-influenza co-detection (% +ve)	16 (7.4)	3 (7.9)	21 (16.5)	40 (10.5)

[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	**7088**	**225.9 (220.9, 230.9)**	**380**	**12.1 (10.9, 13.4)**
Age group (years)				
<1	529	448.3 (414.5, 483.5)	12	10.2 (5.3, 17.7)
1–4	2095	353.3 (339.5, 367.4)	116	19.6 (16.2, 23.4)
5–19	1261	218.5 (207.2, 230.3)	113	19.6 (16.2, 23.5)
20–34	476	226.7 (207.7, 246.7)	21	10.0 (6.2, 15.3)
35–49	2005	238.7 (228.9, 248.8)	80	9.5 (7.6, 11.8)
50–64	492	102.7 (94.0, 112.0)	29	6.1 (4.1, 8.7)
≥65	230	71.7 (62.8, 81.3)	9	2.8 (1.3, 5.3)
Ethnicity				
Māori	693	215.9 (200.8, 231.7)	43	13.4 (9.7, 18.0)
Pacific peoples	349	286.1 (258.6, 315.4)	29	23.8 (15.9, 34.1)
Asian	676	244.0 (226.9, 262.0)	38	13.7 (9.7, 18.8)
European and Other	5370	222.1 (216.5, 227.8)	270	11.2 (9.9, 12.6)
Sex				
Female	3928	223.6 (217.0, 230.3)	214	12.2 (10.6, 13.9)
Male	3153	229.3 (221.8, 237.0)	166	12.1 (10.3, 14.0)
Other	7	116.7 (47.5, 233.7)	0	0.0 (0.0, 60.6)

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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