VIROLOGY ANNUAL REPORT 2017
(http://www.surv.esr.cri.nz/virology/virology_annual_report.php)

The virology annual report is compiled by ESR by collating the data from virology and microbiology laboratories: one public health virology laboratory (ESR) and three hospital virology laboratories (Auckland Labplus, Waikato Hospital and Canterbury Health) and four Microbiology laboratories (Wellington Hospital, Middlemore Hospital, Tauranga PathLab, and Dunedin Hospital). The virological surveillance is mainly a passive surveillance for hospital inpatients and outpatients during routine viral diagnosis.

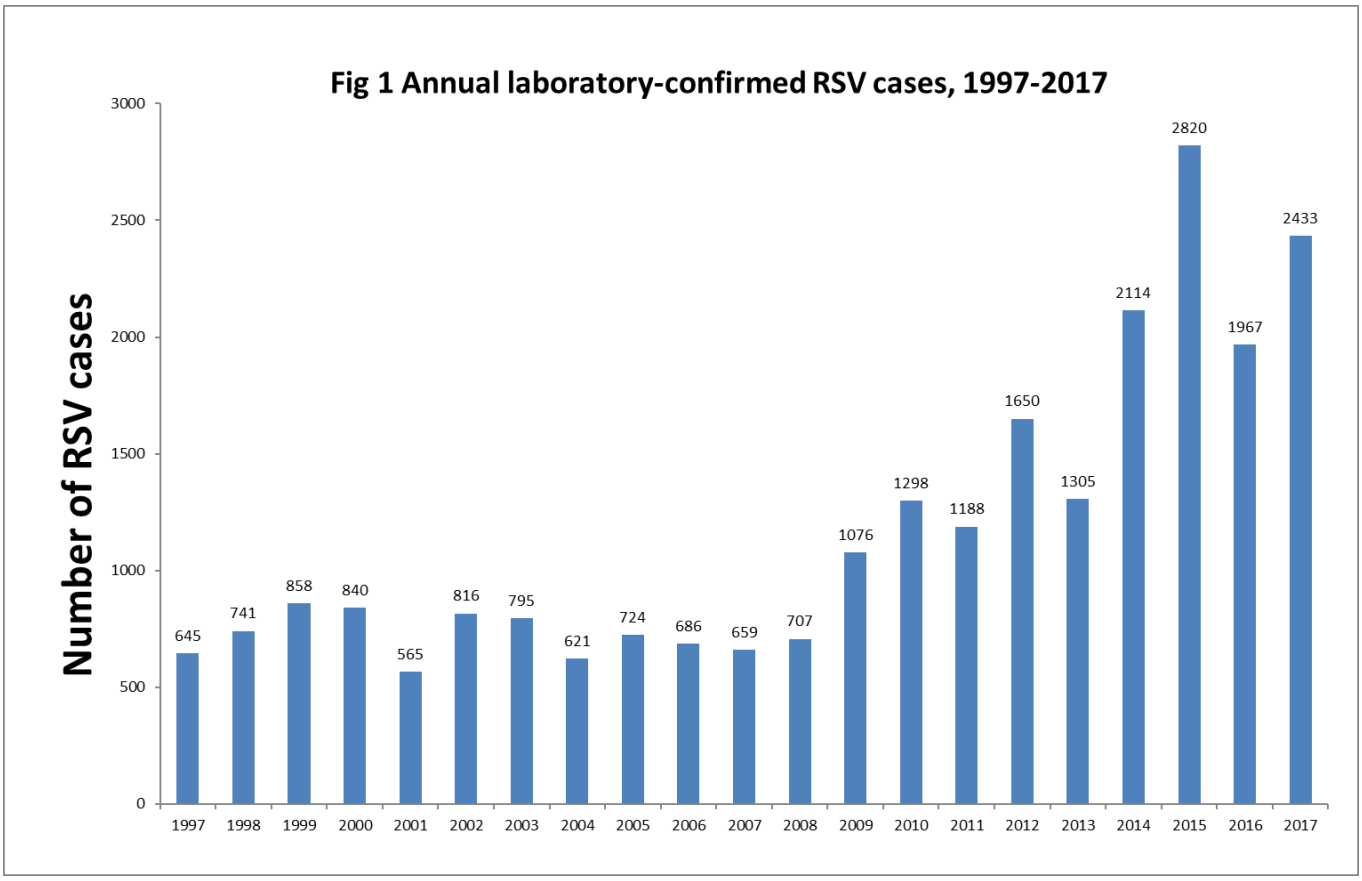
RESPIRATORY VIRUSES

Influenza

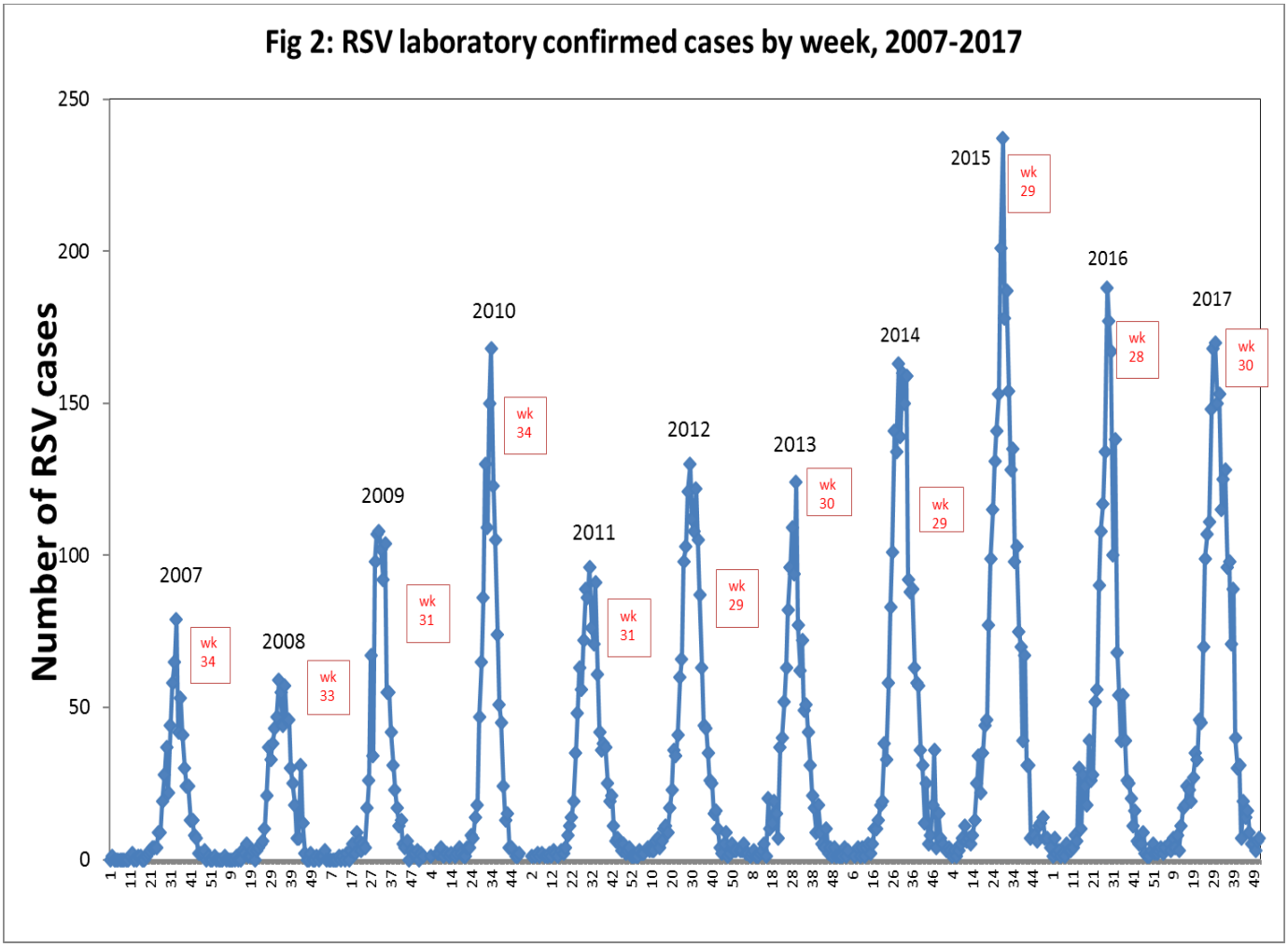
The influenza annual report in 2017 is available at the website:
https://www.esr.cri.nz/our-services/consultancy/flu-surveillance-and-research/
Other influenza data, including vaccine recommendation, can be accessed at this link
https://surv.esr.cri.nz/PDF_surveillance/Virology/FluVac/FluVac2018(1).pdf

Respiratory Syncytial Virus (RSV)

Based on laboratory-confirmed RSV cases reported to ESR, the RSV activity in 2017 was higher than last year (Figure 1). During January to December 2017, a total of 2433 RSV infections were reported compared with 1967 cases reported during the same period in 2016.



In 2017, the RSV activity started to increase in June and peaked in Week 30 (end of July), a few weeks later than the peak in 2016 (Figure 2). The RSV activity remained high until Week 39 (end of September). Since then, the number of RSV cases declined to a baseline level.



ENTEROVIRUSES AND ADENOVIRUSES

The New Zealand enterovirus and adenovirus laboratory network comprises seven laboratories: one public health virology laboratory (ESR, Wellington) and three hospital virology laboratories in Auckland, Waikato and Christchurch and three Microbiology laboratories – Wellington and Dunedin – SCL and Middlemore hospital. These seven laboratories cover 100% of the population and all geographical areas of the country. The enterovirus and adenovirus surveillance is a year-round routine diagnostic surveillance for hospital in-patients and out-patients. Hospital laboratories report all enterovirus and adenovirus detections and/or typing results weekly to ESR and this data is then available nationally. Untyped or untypable enteroviruses and adenoviruses are referred to ESR for further identification.

Enteroviruses

There were a total of 834 enteroviruses reported in 2017, compared with 765 in 2016. A total of 144 (17%) enteroviruses were identified by serotyping. Among serotyped enteroviruses, Coxsackievirus Group A type 6, (27, 19%), was the most common serotype followed by Echovirus type 30 (22, 15%). In 2016, Coxsackievirus Group A type 6 (37) was also the predominant strain followed by Echovirus type 18 (21).
These Coxsackievirus Group A type 6 viruses were mostly isolated from mouth and skin swab samples and can be associated with herpangina and hand, foot and mouth disease. Echovirus type 30 were mostly isolated from CSF, Faeces or respiratory samples and may cause febrile illness and meningitis.

Adenoviruses

There were a total of 1131 adenoviruses reported in 2017, higher than 1006 in 2016. Of these, 131 (12%) adenoviruses were identified by serotyping. The predominant serotype in 2017 was adenovirus type 4 (58, 44%), followed by type 3 (18, 14%) while in 2016 the predominant serotype is adenovirus type 7 (84) followed by type 3 (22).

MEASLES, MUMPS AND RUBELLA (MMR)

The MMR annual report in 2017 is available in the report "Annual Surveillance Summary 2017" at https://surv.esr.cri.nz/surveillance/annual_surveillance.php

ARBOVIRAL DISEASES

The summary for Arboviral diseases, including Dengue (DENV), Chikungunya (CHKV), Zika (ZIKV), Ross river virus (RRV), Barmah Forest virus (BFV), is available in the report "Annual Surveillance Summary 2017" at https://surv.esr.cri.nz/surveillance/annual_surveillance.php

SUMMARY OF VIRUSES IDENTIFIED

All identified viral and Mycoplasma pneumoniae infections in New Zealand in 2017 are shown in Table 1. The information is based on weekly data collated from the virology laboratories of Auckland Labplus, Waikato Hospital, Canterbury Health, and microbiology laboratories of Wellington SCL, Dunedin SCL, Middlemore Hospital, Tauranga PathLab and ESR.

Table 1. Summary of viral and Mycoplasma pneumoniae infections in 2017 in New Zealand

*Note: Viruses designated with an asterisk were reported based on the specimen taken date, whereas other viruses were based on the lab reporting date.

2017 Viruses	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Influenza A (not sub-typed)*	9	8	2	7	45	135	380	419	126	28	6	2	1167
Influenza A(H1N1)pdm09*	8	5	7	7	26	63	99	161	86	24	1	4	491
Influenza A(H3N2)*	48	33	75	53	97	516	858	282	92	24	12	11	2101
Influenza B (not lineage-typed)*	2	3	8	30	47	107	269	235	115	32	10	1	859
Influenza B/Victoria lineage*	2	0	1	1	0	6	5	3	3	1	2	0	24
Influenza B/Yamagata lineage*	3	2	11	16	62	234	406	204	75	15	3	0	1031
Astrovirus	0	1	2	3	1	7	7	7	7	1	2	0	38
Bocavirus	3	0	5	3	6	7	13	22	13	5	5	1	83
Metapneumovirus (HMPV)	1	3	9	12	18	61	108	148	178	118	59	24	739
Mycoplasma pneumoniae	7	9	10	7	23	18	14	25	7	8	10	9	147
Norovirus	44	51	32	9	66	90	77	128	133	121	185	48	984
Parainfluenza 1	2	0	1	0	3	4	9	7	12	5	11	8	62
Parainfluenza 2	1	3	5	8	30	48	29	16	9	1	1	3	154
Parainfluenza 3	23	5	10	22	33	58	113	222	210	108	39	17	860
Parainfluenza 4	0	0	1	0	1	5	5	3	9	5	1	3	33
Parechovirus	2	1	4	4	4	2	2	4	2	1	2	2	30
Parvovirus	1	1	0	1	1	4	2	6	8	10	4	4	42
Picornavirus	33	59	152	132	218	183	151	210	231	190	169	76	1804
Respiratory Syncytial Virus (RSV)	11	12	33	82	160	321	597	671	354	108	63	21	2433
Rhinovirus	48	61	165	151	224	216	173	323	305	206	174	91	2137
Rotavirus	8	13	13	7	8	3	6	15	12	11	26	13	135
Sapovirus	14	8	30	19	40	35	28	10	11	4	4	0	203
Varicella Zoster Virus (VZV)	206	184	261	208	274	197	202	265	238	227	310	238	2810
Adenovirus	28	50	87	64	85	85	82	122	148	141	154	85	1131
Enterovirus	43	27	40	57	62	46	52	79	129	105	132	62	834
Adenovirus Type 1	0	1	0	0	1	0	1	1	1	3	1	1	10
Adenovirus Type 2	0	2	0	0	2	1	1	0	2	1	2	0	11
Adenovirus Type 3	0	0	1	1	2	2	0	1	1	6	0	4	18
Adenovirus Type 4	1	0	0	0	0	0	0	1	10	18	9	19	58
Adenovirus Type 5	0	0	0	0	0	0	0	0	0	1	0	0	1
Adenovirus Type 7	0	0	0	0	2	1	0	1	0	7	1	5	17
Adenovirus Type 8	0	0	0	0	1	1	0	3	0	0	0	0	5
Adenovirus Type 19	0	0	2	0	4	0	1	0	0	0	0	0	7
Adenovirus Type 35	0	0	0	0	1	0	0	0	0	0	0	0	1
Adenovirus Type 37	0	0	1	0	0	0	0	0	0	0	0	0	1
Adenovirus Type 42	0	0	0	0	1	0	0	0	0	0	0	0	1
Adenovirus Type 56	0	0	0	0	0	0	0	0	0	1	0	0	1
Coxsackievirus A type 6	1	0	0	0	0	1	0	3	3	7	8	4	27
Coxsackievirus A type 8	2	1	0	0	1	0	0	0	1	0	1	0	6
Coxsackievirus A type 9	2	1	0	0	1	0	0	0	1	0	0	1	6
Coxsackievirus A type 10	0	0	0	1	1	2	0	0	0	1	0	0	5
Coxsackievirus A type 16	0	1	0	1	4	2	1	1	2	0	2	0	14
Coxsackievirus A type 21	0	0	0	0	0	0	0	1	0	2	2	1	6
Coxsackievirus B type 1	0	0	0	0	0	0	0	0	0	1	0	0	1
Coxsackievirus B type 3	0	0	0	0	0	1	0	0	0	0	0	0	1
Coxsackievirus B type 4	0	0	0	0	0	0	1	0	0	1	0	0	2
Coxsackievirus B type 5	1	0	0	0	0	1	0	1	0	0	2	0	5
Echovirus type 6	4	4	0	0	1	0	0	0	0	0	0	0	9
Echovirus type 9	1	0	0	0	0	0	0	0	0	0	0	0	1
Echovirus type 11	0	1	0	1	0	0	0	0	0	0	0	0	2
Echovirus type 18	1	0	0	0	0	0	0	0	0	0	0	0	1
Echovirus type 20	0	0	0	0	2	0	0	0	1	0	1	0	4
Echovirus type 25	0	0	0	0	2	0	0	0	1	0	0	0	3
Echovirus type 30	0	0	0	2	0	1	0	1	0	6	6	6	22
Echovirus type 33	2	2	1	1	0	0	0	0	0	0	0	0	6
Enterovirus type 68	1	0	0	0	6	3	3	1	1	1	2	0	18
Enterovirus type 71	1	0	0	0	2	0	0	1	0	0	0	0	4
Enterovirus type 105	1	0	0	0	0	0	0	0	0	0	0	0	1
Measles	1	11	5	0	3	0	1	0	0	4	0	1	26
Mumps	5	15	25	30	52	39	45	114	172	202	195	123	1017
Rubella	1	0	0	0	0	0	0	0	0	0	0	0	1