VIROLOGY ANNUAL REPORT 2015
(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.

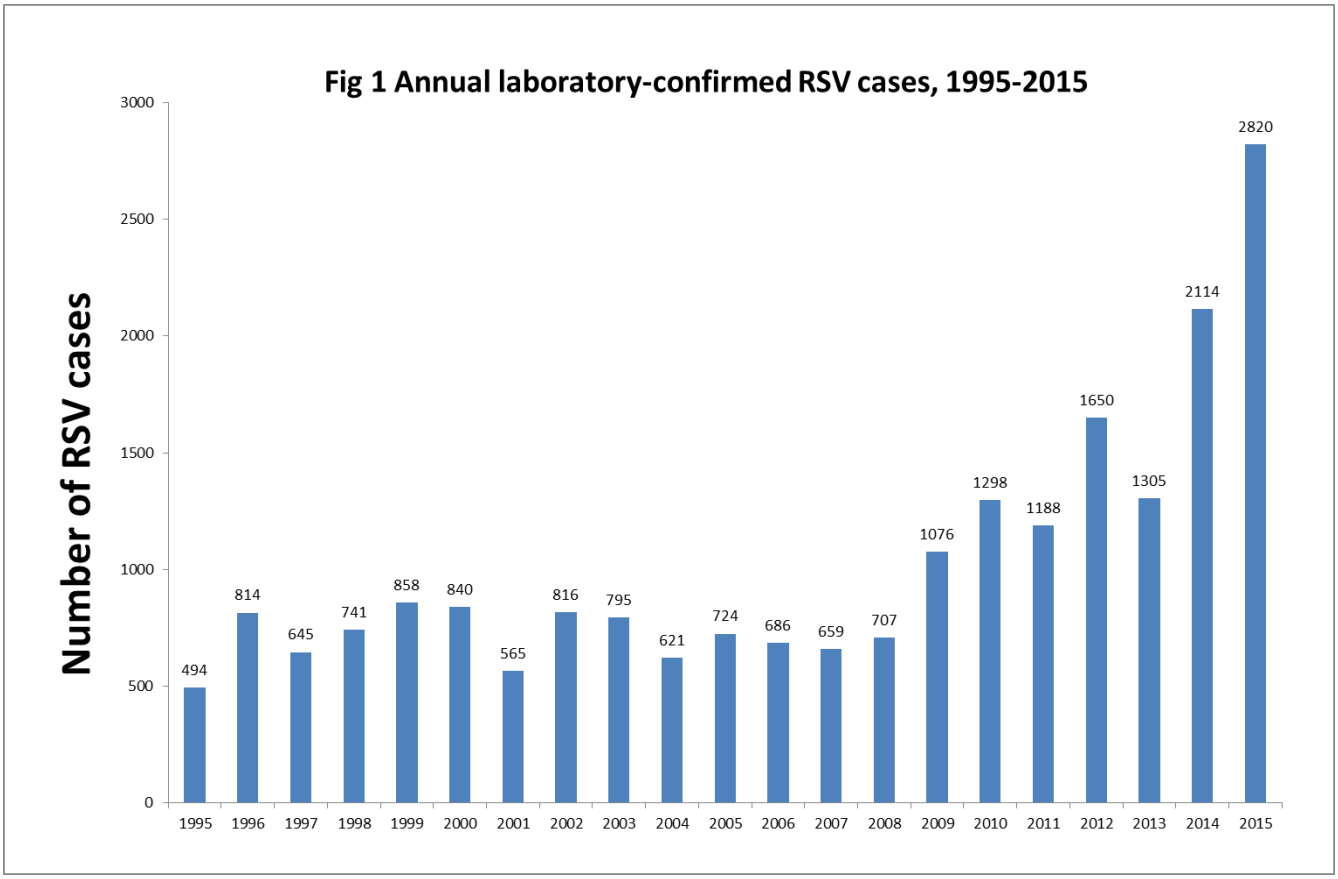
RESPIRATORY VIRUSES

Influenza

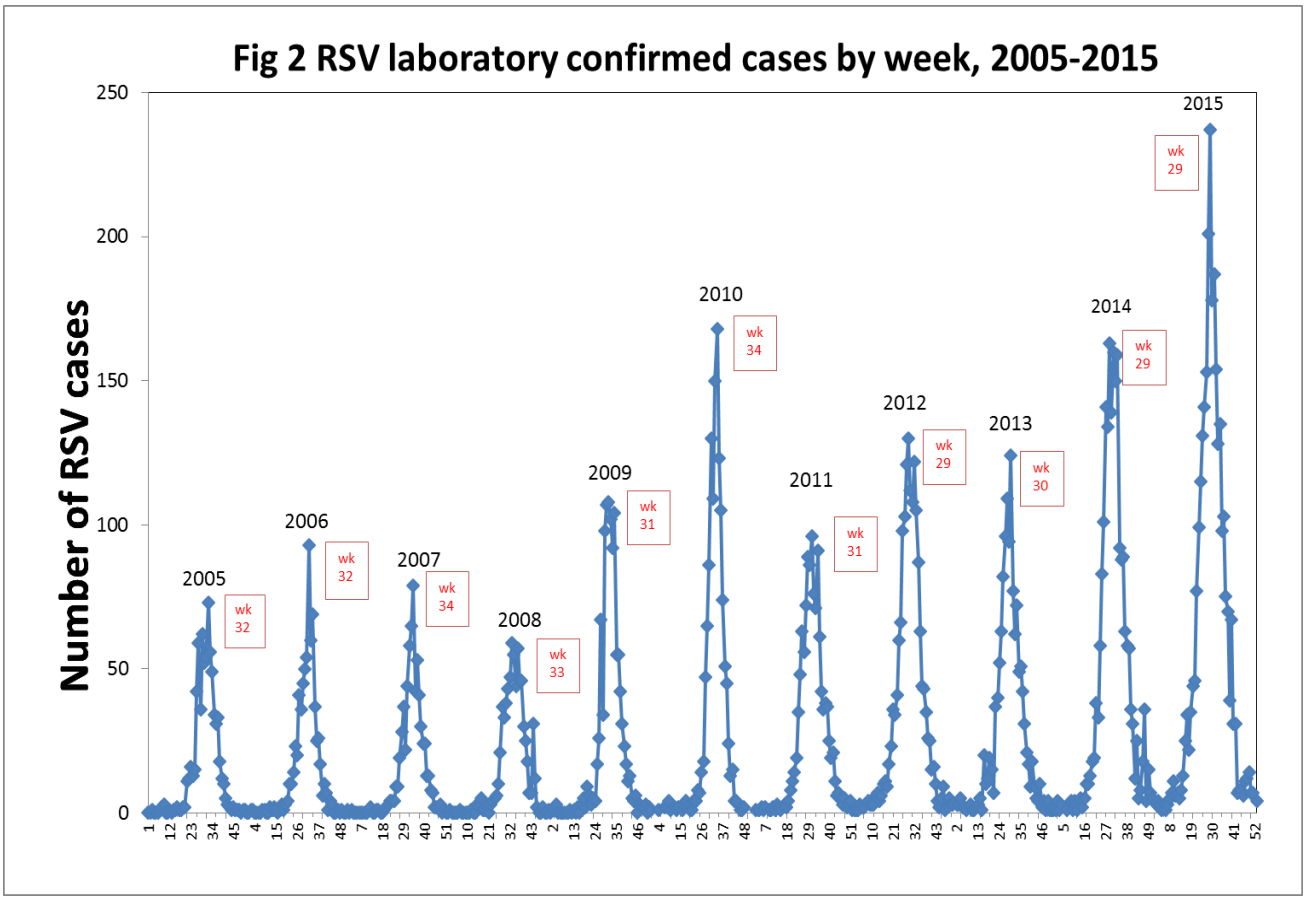
The influenza annual report in 2015 is available at the website:
http://www.surv.esr.cri.nz/virology/influenza_annual_report.php

Respiratory Syncytial Virus (RSV)

Based on laboratory-confirmed RSV cases reported to ESR, the RSV activity in 2015 was higher than last year (Figure 1). During January to December 2015, a total of 2820 RSV infections were reported compared with 2114 cases reported during the same period in 2014.



In 2015, the RSV activity started to increase in June and peaked in Week 29 (middle of July), same time when it peaked in 2014 (Figure 2). The RSV activity remained high until Week 35 (late August). 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 506 enteroviruses reported in 2015, compared with 454 in 2014. A total of 80 (13%) enterovirus were identified by serotyping. Among serotyped enteroviruses, Coxsackievirus Group B type 5, (29, 36%), was the most predominant serotype followed by Coxsackievirus Group A type 6 (28, 35%), while in 2014, Coxsackievirus Group A type 24 (17) and Coxsackievirus Group B type 2, (10), were the predominant strains.

Adenoviruses

There were a total of 1802 adenoviruses reported in 2015, significantly higher than 842 in 2014. Of these, 443 (25%) adenoviruses were identified by serotyping. The predominant serotype in 2015 was adenovirus type 7 (270, 61%), followed by type 3 (46, 10%). The predominant serotypes in 2014 were adenovirus type 3 (39) and type 2 (25).

This year, a very high number of Adenovirus type 7 (ADV7) had been reported nationwide compared to 13 ADV7 reported in 2014. Of 270 ADV7 reported, 199 (74%) were reported from October - December. Most of the ADV7 cases were children aged less than 5 years (159, 59%). Age distribution of the ADV7 cases were: < 1 year (74, 27%), 1-4 years (85, 31%), 5-19 years (35, 13%), 20-59 years (68, 25% and ≥ 60 years (8, 3%). Among those with known clinical data, majority presented with respiratory symptoms and 50 were cases hospitalized with severe acute respiratory illness, 9 admitted to ICU and 2 died. Majority of these cases came from South Auckland (168), followed by Waikato (26), Auckland and Waitemata (16) Canterbury (15) and Dunedin (14).

Worldwide, this pathogen has sometimes been associated with severe morbidity and mortality, especially with children. Adenoviruses 7 can cause acute pharyngoconjunctival fever in children. Symptoms, which appear suddenly and usually disappear in less than a week, include inflammation of the lining of the eyelid (conjunctivitis), fever, sore throat (pharyngitis), and runny nose. In adults, the most frequently reported adenovirus infection is acute respiratory disease and had been identified in outbreaks with military recruits.

MEASLES, MUMPS AND RUBELLA (MMR)

The MMR annual report in 2015 is available in the report "Annual Surveillance Summary 2015" at http://www.surv.esr.cri.nz/PDF_surveillance/AnnualRpt/AnnualSurv/2015/2015AnnualSurvRpt.pdf

Summary of Viruses identified

All identified viral and Mycoplasma pneumoniae infections in New Zealand in 2015 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 2015 in New Zealand

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Influenza A *	7	4	3	0	3	38	328	188	32	2	2	1	608
Influenza A(H1N1)pdm09*	5	2	4	3	1	4	5	8	3	4	2	1	42
Influenza A(H3N2)*	20	17	15	25	19	188	660	571	185	24	4	2	1730
Influenza B*	5	5	5	4	7	50	393	667	402	88	6	11	1643
Influenza B/Victoria lineage*	1	0	0	0	1	8	62	179	173	31	3	2	460
Influenza B/Yamagata lineage*	1	1	5	2	9	34	108	192	95	7	0	0	454
Bocavirus	3	4	0	5	6	5	20	17	26	19	9	12	126
Coronavirus	2	1	0	0	0	0	0	0	0	0	0	0	3
Metapneumovirus (HMPV)	7	0	0	3	8	20	87	138	349	146	56	34	848
Mycoplasma pneumoniae	13	11	10	18	14	14	23	21	19	12	10	11	176
Parainfluenza 1	1	0	0	1	1	2	9	5	9	9	2	3	42
Parainfluenza 2	5	0	5	7	13	35	41	26	27	2	2	1	164
Parainfluenza 3	27	10	8	11	10	42	157	214	321	148	69	21	1038
Parainfluenza 4	0	0	1	0	2	4	1	6	3	0	2	3	22
Parechovirus	0	0	3	0	1	3	3	2	1	2	0	1	16
Parvovirus	0	0	0	0	0	1	2	0	0	1	0	3	7
Picornavirus	45	66	67	68	99	151	139	140	192	123	108	61	1259
Respiratory Syncytial Virus	14	16	29	102	202	486	956	515	354	77	37	32	2820
Rhinovirus	67	76	99	96	169	254	272	220	398	237	197	152	2237
Rotavirus	16	7	9	7	4	8	1	9	18	9	21	26	135
Sapovirus	2	3	2	0	0	0	0	0	0	0	0	0	7
Varicella Zoster Virus (VZV)	138	103	106	140	139	141	167	130	190	153	162	194	1763
Measles	0	1	6	3	2	4	0	3	1	0	0	1	21
Mumps	1	0	0	0	1	1	2	2	2	1	2	2	14
Rubella	0	0	2	0	0	0	0	0	0	0	0	0	2
Adenovirus	93	50	85	101	78	117	168	189	343	180	230	168	1802
Adenovirus Type 1	2	0	1	1	0	1	1	3	7	3	3	2	24
Adenovirus Type 2	1	0	0	1	3	2	3	2	9	1	2	3	27
Adenovirus Type 3	10	0	1	5	5	3	3	3	1	7	4	4	46
Adenovirus Type 4	0	0	0	0	0	0	0	7	2	0	2	1	12
Adenovirus Type 5	3	0	0	0	0	1	0	0	0	0	0	0	4
Adenovirus Type 7	5	4	3	22	9	2	20	8	46	31	60	62	270
Adenovirus Type 8	0	0	1	0	0	1	0	0	0	0	0	0	2
Adenovirus Type 11	0	0	0	0	0	0	2	0	1	0	1	0	4
Adenovirus Type 14	1	0	0	0	0	0	0	0	0	1	0	0	2
Adenovirus Type 19	1	0	0	0	0	2	3	0	3	1	1	0	11
Adenovirus Type 21	0	0	0	0	0	0	0	0	0	2	1	1	4
Adenovirus Type 22	1	0	0	2	0	0	0	0	0	0	0	0	3
Adenovirus Type 29	0	0	0	1	0	0	0	0	0	0	0	0	1
Adenovirus Type 35	0	0	0	0	1	1	0	0	0	0	0	0	2
Adenovirus Type 37	1	1	4	4	2	4	3	3	2	0	0	4	28
Adenovirus Type 42	0	0	0	0	1	0	0	0	1	0	0	0	2
Adenovirus Type 55	0	0	0	0	0	0	0	0	0	0	0	1	1
Enterovirus	43	25	36	50	46	38	44	35	63	36	44	46	506
Coxsackievirus A type 6	1	0	3	3	3	2	1	2	0	4	1	8	28
Coxsackievirus A type 10	1	0	1	0	0	1	1	0	0	0	0	0	4
Coxsackievirus A type 16	0	0	0	0	0	0	1	0	0	0	0	0	1
Coxsackievirus A type 21	1	0	0	0	0	0	0	0	0	0	0	0	1
Coxsackievirus B type 4	3	1	1	0	0	0	0	0	0	0	0	0	5
Coxsackievirus B type 5	1	0	2	7	9	4	2	0	1	1	0	2	29
Echovirus type 3	0	1	0	1	1	0	0	0	0	0	0	0	3
Echovirus type 6	2	0	1	1	0	0	0	0	0	0	0	0	4
Echovirus type 16	1	0	0	0	0	0	0	0	0	0	0	0	1
Echovirus type 25	1	0	0	0	0	0	0	0	0	0	0	0	1
Enterovirus type 68	0	0	0	0	0	0	0	0	0	0	1	0	1
Enterovirus type C105	0	0	0	0	0	0	0	0	0	0	1	0	1
Parechovirus type 3	0	1	0	0	0	0	0	0	0	0	0	0	1

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