ISSN 0725-3141

Communicable Diseases Intelligence

Bulletin number 84/14
Issue date: 13 July 1984

Contents:

VIRUS REPORTING SCHEME - A total of 1277 reports were received this period. Patterns suggested by the reports included the beginning of the seasonal rises of childhood rotavirus (135 reports received compared with 100, 66 and 73 for the previous three generations) and respiratory syncytial virus (RSV) infections (65 reports compared with 55, 17 and 28). To date, there have been few isolates of influenza virus, and respiratory tract infections currently appear to be associated with RSV, rhinovirus or parainfluenza virus. Parainfluenza virus infections have presented with laryngo-tracheal bronchitis in adults and croup in children, and some rhinovirus isolates reported by the OIC WHO Reference Centre, Melbourne, were from patients suffering with the influenza-like symptoms of fever and myalgia.

The Research Committee, NSW Faculty of the Royal Australian College of General Practitioners, has recently instituted a pilot project for a sentinel practices reporting scheme in Sydney (R.C. Pincus, Co-ordinator, personal communication). At present, twelve practices are involved and data collated from their second week of operation has indicated an increase in adenovirus keratoconjunctivitis in the Western suburbs. Patients have generally presented with a unilateral conjunctivitis, sometimes with a palpable preauricular lymph node. Pain and photophobia, but with no visual disturbances, have also been recorded.

. Arbovirus infections - Nine flavivirus infections were diagnosed by the State Health Laboratory, Brisbane. Three sera were referred from Papua New Guinea, and included the detection of IgM antibody against dengue type 1 in a 13 year old boy, against dengue type 3 in an adult, and against Ross River, Murray Valley encephalitis (MVE) and Alfuy antigens in a nine year old boy with meningoencephalitis. Five reports were of indigenous dengue type 1 infection in patients from Townsville. The last report was the detection of cross-reacting IgM antibody against Kunjin, MVE and Alfuy in a 16 year old male from Roma who is recovering from an attack of encephalitis with fever. Several Kunjin virus infections have been diagnosed this year in patients residing in the area. The distribution of the epidemic polyarthritis reports was Queensland (10), Western Australia (5), Northern Territory (1) and New South Wales (1).

The Bulletin is compiled and distributed by the Environmental Health Branch, Department of Health, P.O. Box 100, Woden, A.C.T. 2606, Australia, and is available on request.

LEGIONNAIRES' DISEASE SURVEILLANCE - NEW SOUTH WALES

(Contributed by P. Christopher, Institute of Public Health, Bio-Sciences, NSW Department of Health, North Ryde, Sydney)

In many hospitals for the elderly and mentally ill, water for bathing and showering is provided from a "warm water" system, i.e. one that is thermostatically controlled in a tank at about 42°C. Such a system prevents the accidental scalding of patients who are not in control of all mental faculties and are faced with the adjustment of hot/cold taps. As there is no regular maintenance of these warm water tanks, sludge containing organic and inorganic matter builds up from the main water supply. This provides an ideal substrate for microbial growth and as showers generate significant amounts of aerosol, high concentrations of bacteria could be inhaled to cause infection and disease.

Although rare, showering with contaminated water has been associated with outbreaks of Legionnaires' disease,[1-5] albeit influenced by such susceptibility factors as middle age, immunosuppression, debilitating chronic disease and smoking. Following the outbreak of Legionnaires' disease involving five patients at the Ballarat Psychiatric Hospital, Victoria,[5] a survey of the warm water systems in New South Wales psychiatric hospitals was conducted in early 1982 by members of the Health Commission and the Microbiological Diagnostic Unit, University of Melbourne. Samples were collected from the water systems of seven hospitals, all of which yielded Legionella pneumophila (Table 1).

TABLE 1: New South Wales institutions surveyed for L. pneumophila (1982-83)

Hospital institution	Source and type of water	Temperature	Result (serogroup)
Rozelle	Ward 11		
	(a) Showers	48°C	Positive (1)
	(b) Sink tops		Positive (1)
Stockton, Newcastle	(a) Tepid water from storage tank supplying shower	36°C	Positive (1,4,6)
	(b) Bath/sink water from tepid storage tank	38°C	Positive (1,4,6)
	(c) Shower water from tepid water storage tank	37°C	Positive (1,4,6)
Kenmore, Goulbourn	Ward 19 Warm water from mixing tank	41°C	Positive (1)
Gladesville	Ward 10		
	(a) Storage tank for baths and showers	42°C	Positive (5)
	(b) Female shower	-	Negative
Strickland House, Vaucluse	Ward B		
	(a) Storage tank	43°C	Positive (1)
	(b) Shower ground	43°C	Positive (1)
	(c) Bath tap	43°C	Positive (1)
Cumberland, Parramatta	Ward 10 Female shower	-	Positive (6)
Rydalmere	Ward 8		
	Bath tap	-	Positive (1)

From the findings it was assumed that many of the 118 warm water tanks in the State's psychiatric hospitals were contaminated, as most of the systems were installed in the 1940's and many had never been cleaned or desludged since installation. Accordingly, a committee was established to consider the problem since the cleaning of the tanks and the disinfection of warm water systems would be a major and costly exercise, and the repeated addition of a biocide to the water impractical.

As there was no record of any patient having contracted Legionnaires' disease in a NSW psychiatric hospital, several studies were also instituted to determine the prevalence, if any, of human Legionella infection. In April 1982, ten of the 60 patients resident in the two wards implicated at Gladesville Hospital were tested by indirect immunofluorescence for antibody against L. pneumophila, serogroups 1-4. All sera were negative. A second retrospective survey of all the patients who had died at Gladesville during 1977-82 revealed a high incidence of respiratory causes, but a more careful review of the 27 patients who had been admitted to the medical unit with respiratory infections in 1982 indicated symptoms of bronchopneumonia and not lobar pneumonia which is usually associated with Legionella infections. An extension of this surveillance up to April 1983 also showed that no patients had positive serology. Because L. pneumophila, serogroup 5 was isolated from the storage tank of ward 10, the ten original sera were retested for antibody against serogroups 1-6. Again all sera were negative, although a titre of 1:32 against serogroup 5 was detected in a patient who had been in ward 10 for some months before his death from bronchopneumonia. However this level was regarded as nonspecific. The results of a third more extensive survey of all seven hospitals, involving 112 patients, also failed to indicate evidence of prior infection.

Environmental studies by direct plating of samples on charcoal yeast extract agar[6] and modified Wadowsky and Yee medium[7] showed that the highest concentrations of L. pneumophila were present in the sludge of the warm water tanks. Desludging and chlorination trials at Gladesville Hospital using 5 and 50 ppm residual chlorine for three hours achieved short-term elimination of the organism, but recolonisation occurred within several months. Despite the absence of any evidence of Legionnaires' disease, several remedial recommendations were made, including routine cleansing measures together with further evaluation of chlorination, and restriction of the shower rosettes used in psychiatric hospitals to those that produce streams of low velocity and minimum aerosol.

Editorial Comment

Organisms of the family Legionellaceae have been isolated from a variety of aquatic environments, including air-conditioning cooling towers,[8] hot water tanks,[9] evaporative condensers[10] and streams and ponds.[11] The most likely route of infection is via aerosol particles of 5 µm or less, in which L. pneumophila can survive for as long as two hours.[12] Most outbreaks have been due to L. pneumophila, serogroup 1, and although this may be due to increased virulence, it may simply reflect the greater prevalence of this particular organism. Control of outbreaks due to contaminated water have been based on chlorination and/or water heating with varying degrees of success.[13-16] However, since boosting

of hot water temperatures is potentially dangerous, especially on paediatric, geriatric, or psychiatric wards, recommendations for hyperchlorination or intermittent rising of temperature to 77°C should be regarded with considerable caution. Studies have also shown that some materials such as rubber washers used in water outlets not only protect L. pneumophila from chlorine but also support exuberant growth in the absence of any other nutrient source.[17] Investigations have also emphasised the importance of stagnation in plumbing systems, so that the most important control measure may be to identify and clean regularly such nidi where plumbing design and materials allow the organism to collect and multiply. Therefore, because of the wide implications for public health and expenditure, it is important that people responsible for water systems in large public buildings have an adequate understanding of water supply hygiene.

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LEGIONNAIRES' DISEASE SURVEILLANCE - VICTORIA

(Based on 1983 Annual Report, Legionella Reference Laboratory, Fairfield Hospital, Melbourne)

During 1983, 865 human and environmental specimens were submitted for routine diagnostic examination. Of these, 710 were sera and 108 were bronchial washings, transtracheal aspirates and biopsies from 397 and 108 hospital patients respectively, suffering from serious lower respiratory tract infections. Twelve cases of Legionnaires' disease were diagnosed; serological confirmation was obtained in 11 cases by the direct fluorescent antibody test, and one was confirmed only by culture of Legionella pneumophila. The pathogen was recovered from material from three other patients using both selective plating on synthetic medium and guinea pig inoculation. All the patients presented with severe pneumonia, of which seven died. Two patients were undergoing treatment for malignancy and two for myocardial infarction. All the patients were males with a mean age of 48.8 years. Fifteen strains of L. pneumophila were also recovered from environmental sources.

PSITTACOSIS SURVEILLANCE - WESTERN AUSTRALIA

(Contributed by M. Bucens, State Health Laboratory Service, and S. Friend, Health Surveyor, Public Health Department, Perth.)

Between December 1983 and May 1984, seven cases of psittacosis were diagnosed serologically by the State Health Laboratory Services. Although this condition is a notifiable disease in Western Australia, none of the cases were notified. Because of the possibility of a common source of infection, the cluster of cases were investigated further. Although follow-up of the first six cases by the health surveyor revealed no common link, it was commented that the time lapse between the persons contracting the disease and the subsequent investigation severely hampered enquiries, and confirmatory pathology in the implicated birds could not be established. It was therefore recommended that future cases should be brought to the attention of the Public Health Department as soon as the disease is positively diagnosed.

CASE 1 - A 62 year old female was admitted to hospital on 15 January 1984, with pneumonia, high temperature, infrequent dry cough and severe pain in her right side. She was diagnosed as having psittacosis. The patient had bought a budgerigar in April 1983, and kept it in the dining room of her house. The bird never displayed any signs of sickness, but because it was destroyed when the diagnosis of psittacosis was made, the source of the disease could not be determined.

CASE 2 - A 43 year old male was admitted to hospital with psittacosis on 27 February 1984. The patient's son owned a rosella and a galah. Both birds appeared healthy, but they had been removed from their home two months before his father's illness. Since the incubation period for psittacosis averages 4-15 days, these birds were eliminated as the source of infection.

CASES 3 and 4 - These were the only diagnoses made on clinical grounds, and occurred in a married couple, both aged 72 years. The husband became ill with high temperatures and lethargy and finally collapsed on 1 April 1984. During his admission to Rockingham Hospital, his wife fed the birds which were housed in seven separate aviaries. Approximately two weeks later she became ill with similar symptoms and was also admitted to hospital. The husband stated he had had the birds for approximately 11 months, with no manifestations of illness either in himself or the birds. However, on 27 February, new stock were introduced, and within two days two introduced Western Rosellas died. Six other birds died in the following 2-3 weeks although they were housed in separate aviaries. All the birds were sold when the husband was discharged. On 9 May the husband suffered a relapse and was readmitted to hospital. Follow-up investigation with the dealer from whom the birds were said to have been purchased confirmed the transaction. However, the manager stated that all birds received on their premises were immediately de-wormed and given Teramycin 50, and no deaths in their stock had been noted prior or subsequent to 27 February.

CASE 5 - A 37 year old male became ill on 16 March 1984 with high temperature, pneumonia and spasmodic cough. He was admitted to the Royal Perth Hospital where a diagnosis of psittacosis was made. The patient had kept 26 homing pigeons for approximately 18 months prior to his illness. He stated that he had lost some pigeons which he attributed to "pigeon pox", with the last death occurring approximately one month prior to the onset of his illness. All the birds were

CASE 6 - A 43 year old male was admitted to Fremantle Hospital on 28 November 1983. The patient owned about 50 racing pigeons, and had been breeding them for about two years. No new stock had been introduced in that period, although considerable contact between the birds occurred at race meetings. He stated that he lost up to 12 birds a year due to illness attributed to canker and cold.

CASE 7 - A 19 year old veterinary student who worked part-time in a veterinary clinic presented with a three week history of fever, sweats and dry cough. He had painful nodes in the right posterior triangle and an evanescent rash. Histopathology of one lymph node revealed a mononuclear infiltrate and microabscesses consistent with chlamydial infection, and his CF titre to the chlamydia group antigen rose from 1:10 to 1:160. The patient reponded well to tetracycline therapy.

Editorial Comment

Psittacosis was first described in association with parrots and parrokeets, but the natural host range of Chlamydia psittaci has since been shown to include domestic poultry such as chickens, ducks and turkeys.(1) Infections by organisms belonging to the same psittacosis group have also been reported among mice, cats, ferrets, hamsters, goats, sheep and cattle,(2) but no role for such agents in human disease has been established, except for the pathogen of enzootic abortion of ewes.(3-5) In the poultry industry, outbreaks have been reported in personnel and veterinary surgeons working in large processing plants for chickens, turkeys(6) and ducks.(7) However, C. psittaci has not been found in commercial poultry flocks in Australia.(8) Human to human transmission and infection of laboratory staff have also been recorded.(9)

Psittacosis usually affects adults, particularly in the 30-60 year age group, and childhood infection is uncommon and mild. The infection may present with a wide clinical spectrum ranging from mild influenza-like illness to a fulminant toxic condition with hepatic, cerebral, cardiac and renal involvement.(10) Birds are relatively resistant to re-infection, but second infections in humans are well documented, even in patients with high titres of complement-fixing antibodies.(1)

Sick birds typically show signs of sleepiness, ruffled feathers, closed eyes, shivering, weight loss, laboured breathing and a mucous nasal discharge. Diarrhoea is less common. Apparently healthy adult birds can be non-excreting carriers of C. psittaci,(11) but stress associated with incorrect feeding, overcrowding, breeding and egg laying can cause excretion of the organism. There is a complete prohibition of the import of birds into Australia, but in the USA and some European countries all imported birds are treated prophylactically with a 30 day course of tetracycline-medicated seed.(10) However in practice, the organism is not always eradicated with this treatment.

In sporadic cases of psittacosis, it has been shown that there is a considerable absence of patient contact with psittacine and other birds. In the period 1975-80, only 21% of cases reported to the Communicable Disease Surveillance Centre, UK, had known contact with exotic, domestic and wild birds.(7) Nevertheless, people who keep birds should be aware of the condition, and those who have sick birds should take at least one to the Agriculture Department so that a diagnosis of

psittacosis can be confirmed or excluded. Apart from psittacosis, there is also a high incidence of salmonellosis in psittacine birds, and giardiasis in budgerigars, which may likewise have the potential of transmission to humans.(12)

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AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

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VIRAL IDENTIFICATIONS FROM CONTRIBUTING LABORATORIES

VIRUS OR VIRAL ANTIGEN	ICPMR (NSW)/ WVH (ACT)	RAHC (NSW)	PHH/ POW (NSW)	FAIR-FIELD (VIC)	RCH (VIC)	IMVS (SA)	STATE LAB (QLD)	STATE LAB (WA)	Total
0100 ADENOVIRUS NOT TYPED	1		1		6	2	13		23
0101 ADENOVIRUS TYPE 1	3					1			4
0102 ADENOVIRUS TYPE 2	1								1
0103 ADENOVIRUS TYPE 3	1								1
0105 ADENOVIRUS TYPE 5	1								1
0106 ADENOVIRUS TYPE 6						1			1
0107 ADENOVIRUS TYPE 7	1					1			2
0109 ADENOVIRUS TYPE 9			1						1
0127 ADENOVIRUS TYPE 27	1								1
0137 ADENOVIRUS TYPE 37								2	2
0199 ADENOVIRUS TYPING PENDING			2			3			5
0301 PARAINFLUENZA VIRUS TYPE 1	1				11	5	2	5	24
0302 PARAINFLUENZA VIRUS TYPE 2	1				11	1	3	2	18
0303 PARAINFLUENZA VIRUS TYPE 3					1	2	7	1	11
0304 PARAINFLUENZA VIRUS TYPE 4								1	1
0399 PARAINFLUENZA VIRUS TYPING PENDING						1			1
0400 RESPIRATORY SYNCYTIAL VIRUS (RS)	6	11	1		12	10	18	7	65
0500 RHINOVIRUS (ALL TYPES)	4				11	8	5		28
0600 MYCOPLASMA PNEUMONIAE	12		4			3	13	2	34
0700 ORNITHOSIS-PSITTACOSIS						1			1
0816 COXSACKIEVIRUS A16	1								1
0902 COXSACKIEVIRUS B2							1		1
0904 COXSACKIEVIRUS B4	1								1
0905 COXSACKIEVIRUS B5	2								2
1003 ECHOVIRUS TYPE 3								2	2
1004 ECHOVIRUS TYPE 4	1								1
1005 ECHOVIRUS TYPE 5								1	1
1006 ECHOVIRUS TYPE 6						2	1		3
1014 ECHOVIRUS TYPE 14	1						1		2
1017 ECHOVIRUS TYPE 17							2		2
1020 ECHOVIRUS TYPE 20	1	1							2
1022 ECHOVIRUS TYPE 22	1	1	1				1		4
1023 ECHOVIRUS TYPE 23								1	1
1025 ECHOVIRUS TYPE 25	1							1	2
1033 ECHOVIRUS TYPE 33								1	1
1099 ECHOVIRUS TYPING PENDING							1		1
1100 POLIOVIRUS NOT TYPED					2				2
1101 POLIOVIRUS TYPE 1	6					1	1	1	9
1102 POLIOVIRUS TYPE 2	2							1	3
1103 POLIOVIRUS TYPE 3	2					1	1	1	5
1104 POLIOVIRUS-VACCINAL STRAIN			2						2
1200 MUMPS VIRUS	3	1	2	1	1		3		11
1300 HERPES VIRUS GROUP-NOT TYPED	26		2	3		11		2	44
1301 HERPES SIMPLEX VIRUS NOT-TYPED		1							1
1302 EPSTEIN-BARR VIRUS (EB VIRUS)	3	2	1					9	15
1303 VARICELLA-ZOSTER VIRUS			1			3	4	1	9
1306 HERPES SIMPLEX TYPE 1	2				8	25	63	12	110
1307 HERPES SIMPLEX TYPE 2	33				2	33	121	57	246
1399 HERPES VIRUS TYPING PENDING			9		3	2			14
1401 COXIELLA BURNETI	5						7		12
1502 PICORNA VIRUS-NOT TYPED	1		2						3
1521 MEASLES VIRUS		1		1				1	3
1522 RUBELLA VIRUS	4				1	2	1	2	10
1532 HEPATITIS B ANTIGEN	68		2	30		23	29	15	167
1535 HEPATITIS A ANTIBODY	9		1	1		2	3	1	17
1541 CHLAMYDIA A - C TRACHOMATIS	18		7	12			48	30	115
1556 CMV - CYTOMEGALOVIRUS	3		2		2	6	6	7	26
1564 ROTAVIRUS	7	11	18		27	51	3	18	135
1565 CALICI VIRUS				1					1
1599 ENTEROVIRUS TYPING PENDING		3	6		8	1			18
9992 ROSS RIVER VIRUS							25	5	30
9993 ASTROVIRUS	1								1
9994 SMALL VIRUS (LIKE) PARTICLE	3	2		1					6
9995 DENGUE							7		7
9998 ARBO. GROUP B.							3		3
Total	238	34	65	50	106	202	393	189	1,277

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

PERIOD : 21/6/84 to 4/7/84 .... 84/14

Viral Identifications by Clinical Information Table 1.
Code 00,99 -No ill or data; 01,02,11,12 -Respiratory; E3 -Encephalitis; M3 -Meningitis; 04 -Paralysis; 05,13 -CNS other unspec.; 07,49 -GI; 17,47 -Hepatic; 19 -CVS; 89 -Urinary; 06 -Skin/mucous.

VIRUS OR VIRAL ANTIGEN	No-ill or data	Respiratory	Encephalitis	Meningitis	Paralysis	CNS other unspec	GI	Hepatic	CVS	Urinary	Skin/mucs memb
0100 ADENOVIRUS NOT TYPED.....		1									
0101 ADENOVIRUS TYPE 1.....		1					1				
0102 ADENOVIRUS TYPE 2.....							1				
0103 ADENOVIRUS TYPE 3.....		1									
0106 ADENOVIRUS TYPE 6.....							1				
0107 ADENOVIRUS TYPE 7.....	1						1				
0109 ADENOVIRUS TYPE 9.....							1				
0301 PARAINFLUENZA VIRUS TYPE 1....	1	23									
0302 PARAINFLUENZA VIRUS TYPE 2....		18				1					
0303 PARAINFLUENZA VIRUS TYPE 3....		11									
0304 PARAINFLUENZA VIRUS TYPE 4....		1									
0400 RESPIRATORY SYNCYTIAL VIRUS (RS).....	1	63									
0500 RHINOVIRUS (ALL TYPES).....		26									1
0600 MYCOPLASMA PNEUMONIAE.....	7	23									2
0700 ORNITHOSIS-PSITTACOSIS.....		1									
0816 COXSACKIEVIRUS A16.....											1
0902 COXSACKIEVIRUS B2.....		1									
0904 COXSACKIEVIRUS B4.....						1					
1003 ECHOVIRUS TYPE 3.....	1			1							
1006 ECHOVIRUS TYPE 6.....		2		1							
1014 ECHOVIRUS TYPE 14.....							2				
1017 ECHOVIRUS TYPE 17.....				1			1				
1020 ECHOVIRUS TYPE 20.....	1										1
1022 ECHOVIRUS TYPE 22.....		4									
1023 ECHOVIRUS TYPE 23.....				1							
1025 ECHOVIRUS TYPE 25.....				1							
1101 POLIOVIRUS TYPE 1.....	1	2					5				
1102 POLIOVIRUS TYPE 2.....	1	1					1				
1103 POLIOVIRUS TYPE 3.....	2	1	1				1				
1104 POLIOVIRUS-VACCINAL STRAIN....							2				
1200 MUMPS VIRUS.....			1	2		1					
1300 HERPES VIRUS GROUP-NOT TYPED..											1
1301 HERPES SIMPLEX VIRUS NOT-TYPED											1
1302 EPSTEIN-BARR VIRUS (EB VIRUS).	1	2						2			
1303 VARICELLA-ZOSTER VIRUS.....						1					8
1306 HERPES SIMPLEX TYPE 1.....	2	8	1			1					54
1307 HERPES SIMPLEX TYPE 2.....	10	1									52
1401 COXIELLA BURNETI.....	1							1			1
1502 PICORNA VIRUS-NOT TYPED.....							1				
1521 MEASLES VIRUS.....						1					2
1522 RUBELLA VIRUS.....	1										6
1532 HEPATITIS B ANTIGEN.....	81					1		56			
1535 HEPATITIS A ANTIBODY.....	4							13			
1541 CHLAMYDIA A - C.TRACHOMATIS...	1										
1556 CMV - CYTOMEGALOVIRUS.....	1	6						1		2	
1564 ROTAVIRUS.....	2	1		1			131				
1565 CALICI VIRUS.....							1				
1599 ENTEROVIRUS TYPING PENDING....							1				
9992 ROSS RIVER VIRUS.....	4		1	1							5
9993 ASTROVIRUS.....							1				
9994 SMALL VIRUS (LIKE) PARTICLE...							6				
9995 DENGUE.....	1										4
9998 ARBO. GROUP B.			2	1							
Total.....	125	204	6	10		7	158	73		2	139

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

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Viral Identifications by Clinical Information Table 2.
Code 10 -Eye; 59 -Genital; 39 -Endo/sal gland;
38 -RES; 29 -Muscle/joint; 69 -Congenital; P8 -PUO;
G8 -Fever/malaise; 09 -Other; A1 -SIDS ...

VIRUS OR VIRAL ANTIGEN	Eye	Genital	Endo/sal gland	RES	Muscle/joint	Congenital	PUO	Fever/malaise	Other	SIDS
0101 ADENOVIRUS TYPE 1.....	1						1			
0105 ADENOVIRUS TYPE 5.....								1		
0127 ADENOVIRUS TYPE 27.....								1		
0137 ADENOVIRUS TYPE 37.....	1	1								
0303 PARAINFLUENZA VIRUS TYPE 3....								1		
0400 RESPIRATORY SYNCYTIAL VIRUS (RS).....								1		
0500 RHINOVIRUS (ALL TYPES).....								2		
0600 MYCOPLASMA PNEUMONIAE.....					1		1	5	1	
0905 COXSACKIEVIRUS B5.....							1			1
1004 ECHOVIRUS TYPE 4.....								1		
1005 ECHOVIRUS TYPE 5.....								1		
1025 ECHOVIRUS TYPE 25.....				1						
1033 ECHOVIRUS TYPE 33.....										1
1101 POLIOVIRUS TYPE 1.....									1	1
1200 MUMPS VIRUS.....			5					2		
1302 EPSTEIN-BARR VIRUS (EB VIRUS).			8					1	2	
1303 VARICELLA-ZOSTER VIRUS.....								1		
1306 HERPES SIMPLEX TYPE 1.....	2	39					1	1	1	
1307 HERPES SIMPLEX TYPE 2.....		183			1					
1401 COXIELLA BURNETI.....					1		2	8		
1522 RUBELLA VIRUS.....			1				2		1	
1532 HEPATITIS B ANTIGEN.....					2				26	
1535 HEPATITIS A ANTIBODY.....									1	
1541 CHLAMYDIA A - C.TRACHOMATIS...	1	109							3	
1556 CMV - CYTOMEGALOVIRUS.....		10		1		2			1	2
1564 ROTAVIRUS.....										1
9992 ROSS RIVER VIRUS.....					22			8		
9995 DENGUE.....					2			4		
9998 ARBO. GROUP B.							1	1		
Total.....	5	342	14	2	29	2	9	39	37	6