AUSTRALIA

Communicable Diseases Intelligence

Bulletin Number 79/17
Issue Date: 31 August 1979

Virus reports this period - 967. A slight decrease compared with the previous two periods.

- Respiratory syncytial virus - 208 reports, the majority of which came from Victoria, South Australia and Queensland. This indicates a continuation of the comparatively high number of isolations over recent weeks. (79/16:191; 79/15:147)
- Echovirus type 11 - an increase to 21 reports, 17 of which were from the IMVS, South Australia. They were from a variety of clinical syndromes and no clear pattern has emerged.
- Rotavirus - 132 reports, compared with 99 and 46 for the previous two periods. There was a similar peak at approximately the same time last year (100 and 119 reports). Further comments on the seasonal isolations of this virus in N.S.W. are included in an article on page 3 of this bulletin.

Unusual salmonella isolations

The Microbiological Diagnostic Unit, University of Melbourne, has reported several isolations of sucrose - positive, H_2S negative Salmonella senftenberg from samples of imported desiccated coconut.

There have been no known human cases reported from this source, however, as this serotype often fails to produce H_2S, the combination of this with sucrose-fermentation may cause laboratories to discard isolates inadvertently.

Strains of other sucrose-fermenting Salmonella spp. have also been identified recently as well as several lactose - positive Salmonella havana.

Herpes following a monkey scratch

The State Health Laboratory, Brisbane, reports the isolation of an untyped herpes simplex virus from pustular vesicles on the hand of a two year old girl. She had been scratched on the hand by a monkey at a zoo, and the vesicles which erupted at the site of the scratch. There is no test available in Australia to determine whether the virus was of simian origin.

The Bulletin is compiled and distributed by the Environmental Health Branch, Department of Health, P.O. Box100, Woden, A.C.T. 2606, Australia, and is available on request. Contributions are solicited, and do not preclude later publication elsewhere.

Clostridium perfringens food poisoning at a school camp - South Australia

(contributed by A. Turner, South Australian Health Commission; and T.W. Steele and S.N. McDermott of the Institute of Medical and Veterinary Science, Adelaide)

Forty-six school children and six adults, 93% of those at Mylor camp-site operated by a Government department, suffered nausea, abdominal pains and diarrhoea from about 5 a.m., 21st June 1979, about twelve hours after the previous evening meal.

The Grade 7 children, supervised by five teachers and a qualified nurse had encamped on 19th June and subsequently ate from a communal kitchen operated by a full time chef and an assistant.

Only two children vomited, and by noon, abdominal cramps had largely dissipated, but diarrhoea was persistent. The majority of sufferers were considerably improved by the evening and none required medical attention.

Possible suspect foods eaten the previous day included rice, coleslaw, potato salads, luncheon sausage, curried stew, eggs and unpasteurized milk. The water supply was from a bore. Suspicion settled on the curried stew which had been prepared on 19th June at about 10 a.m. It had been cooked in a large saucepan from 6 kg of diced chuck steak, curry powder, fruit and vegetables. The stew was cooked for about two hours on a gas stove, cooled for about one hour in the saucepan on the stove and then, still in the large saucepan, placed in a cool room (about 6°C). The saucepan of stew was removed from the cool room at about 10 a.m. on 20th June, and left to stand on an unlit stove until it was reheated at about 4.30 p.m. and served at the 5.30 p.m. meal.

All sufferers interviewed had eaten this stew.

Only four of the children at the camp did not become ill and three of them had not eaten the stew.

The only other food item eaten that evening by all sufferers interviewed was boiled potatoes, but the four persons who were not ill had also eaten them.

The chef of the camp took home some of the curried stew on 19th June and he had his wife and 84 year old uncle ate it that evening, without ill effect. At that stage the stew had not been left standing unrefrigerated for any length of time.

Microbiological investigations on possible sources of the infection included tests on the suspect curried stew (a small amount of which had to be retrieved from a refuse bin!), the raw milk, bore water and some luncheon meat. No pathogens of significance were recovered from any samples other than the stew.

Faecal samples were obtained from 11 children involved in the outbreak while they had acute symptoms with diarrhoea. These failed to grow salmonella, shigella, campylobacter of staphylococci. Macroscopically the fluid faecal specimens contained poorly digested food and mucus but no obvious blood or pus. Phase contrast microscopy of 11 faecal specimens revealed large numbers of bacilli with oval subterminal spores and numerous free spores. Spores were easily seen when specially stained with hot carbol fuchsin.

Samples of all faeces were heated to 100°C without dilution for 5 minutes, and both heated and unheated specimens plated onto 5% sheep blood agar and tryptone sulphite cycloserine agar which were incubated anaerobically at 37°C overnight. The unheated specimens yielded growth of two distinctive types of Cl. perfringens. One strain showed typical double zone haemolysis with a zone of definite beta haemolysis. The second strain showed only incomplete haemolysis. Heating of faecal specimens resulted in a much more profuse growth of Cl. perfringens with incomplete haemolysis (alpha haemolytic). The strain showing beta haemolysis was apparently killed by heating. Subsequent studies showed that the alpha haemolytic strain survived exposure to 100°C for 2 hours but not 3 hours.

The sample of food submitted yielded 10^4 alpha haemolytic C. perfringens/g which appeared to be identical to that obtained from faecal specimens. This organism could not be recovered from the food which was heated to 80°C for 10 minutes. However a cooked meat culture of the food isolate survived exposure to 100°C for 5 minutes indicating that it was heat resistant.

Previous studies have shown that the faeces of symptomatic victims of clostridial food poisoning may contain up to 10^8 clostridia/g. With counts of this magnitude, one would expect to see vegetative forms and spores of clostridia on direct microscopy. The observations recorded above agree with this supposition. It is therefore considered possible for laboratories to make a presumptive diagnosis of clostridial food poisoning by the microscopic examination of appropriately collected faecal specimens.

Viruses, including Norwalk virus, identified in cases of acute diarrhoea in children (contributed by G.S. Grohman and A.M. Murphy, Institute of Clinical Pathology and Medical Research, Sydney; and L.M. de Silva, Royal Alexander Hospital for Children, Sydney)

A number of interesting observations have been made by electron microscopy, on stool specimens from children with acute diarrhoea.

As the winter months approached there were several outbreaks of gastroenteritis among children in several hospital wards, particularly at R.A.H.C. Rotavirus was detected in the majority of specimens, however, during June, a "mixed bag" of viruses was identified. These included, astrovirus, calicivirus and parvovirus-like particles. The parvoviruses were similar to those detected in patients from the oyster outbreak of 1978, and in 4 cases Norwalk virus was identified by IEM. In a few cases, rotavirus together with parvovirus-like particles, or adenovirus, was observed and some rotavirus and adenovirus were observed as virus-antibody aggregates. The EM observations are shown in Table 1.

Table 1.

Number of specimens examined by EM for suspected Rotavirus infection from May to mid-August 1979

EM OBSERVATIONS	MAY	JUNE	JULY	MID-AUGUST	TOTAL
Rotavirus	19	12	21	19	71
Adenovirus	1	3	4	1	9
Rotavirus and Adenovirus	4	0	1	0	5
22-25 nm Parvovirus-like	0	0	4	2	6
Rotavirus and 22-25 nm Parvovirus-like	1	1	3	1	6
Norwalk virus	0	0	4	0	4
Reovirus	0	0	1	0	1
Astrovirus	0	0	1	0	1
Calicivirus	0	0	1	0	1
Negative	5	25	21	10	61
TOTAL	30	41	61	33	165

The detection of Norwalk virus in the stools of four children is of interest. Up to the present time this virus has not been shown to be an important cause of gastroenteritis in young children. In a study of 143 infants[1], in America, Norwalk virus was not detected in any stool specimens and in 51 convalescent sera[2] Norwalk antibody was not detected.

1 Kapikian, A.Z., et. al. The New England Journal of Medicine, 294 : 965-972, 1976.

2 Kapikian, A.Z., et. al. Journal of Medical Virology, 2 : 281-294, 1978.

Bacterial meningitis (contributed by A. Hewstone, Royal Children's Hospital, Melbourne)

Streptococcus pneumoniae (serotype 23) was obtained from the spinal fluid of a year old Yugoslavian boy who had been resident in Australia for two months.

The following minimum inhibitory concentrations were obtained by the Seward Sensitive Kit. The penicillin M.I.C. was confirmed by conventional tube dilution.

Penicillin	0.5 ug/ml
Ampicillin	0.25 ug/ml
Chloramphenicol	8 ug/ml
Amikacin	32 ug/ml
Gentamicin	8 ug/ml
Tetracycline	16 ug/ml
Clindamycin	0.12 ug/ml

The M.I.C. of pencillin is 10 times the level expected and that of chloramphenicol four times the level expected.

Dr David Hansman, Director of Microbiology Children's Hospital, Adelaide kindly serotyped the strain.

Haemophilus influenzae, from the spinal fluid of a 20 month old boy, failed to agglutinate with type b Haemophilus influenzae antiserum. The strain was submitted to the Bacteriology Department of the Fairfield Infectious Diseases Hospital who identified the strain as Haemophilus influenzae type e.

All the strains of Haemophilus influenzae grown from the C.S.F. of 326 children admitted to the R.C.H. Melbourne (1968-1978) were typeable with type b antiserum.

Editor's comment: There is as yet no national collection of figures on the frequency of the current causative organisms of bacterial meningitis in Australia. However, the MMWR of 22nd June 1979 reported on the incidence of bacterial meningitis in 38 States in the U.S.A. during 1978. A total of 4081 cases were reported, representing a reported national rate of 2.69 cases per 100 000 population.

Hemophilus influenzae, Neisseria meningitidis, and Streptococcus pneumoniae accounted for 84% of all reported cases. In 5% of cases the responsible organism was unknown.

Age-specific incidence rates showed that the peak incidence of reported disease occurred in neonates, with the secondary peak in infants 6 to 8 months of age. Nearly 70% of all reported cases of bacterial meningitis occurred in children less than 5 years of age and slightly over 20% of cases were adults.

The distribution of pathogens varied considerably in the different age groups. Neonates were more frequently infected with Group B Streptococcus, Escherichia coli and Listeria monocytogenes. Meningitis in individuals in the age group 1 month to 10 years most commonly was caused by H. influenzae, N. meningitidis, and S. pneumoniae. In persons over 10 years of age, N. meningitidis, and S. pneumoniae predominated.

Marked seasonal trends were observed. Reported cases of meningitis due to N. meningitidis and S. pneumoniae peaked in the winter months; cases due to H. influenzae peaked in the autumn and spring months; and cases due to L. monocytogenes peaked in late autumn-early winter and in the summer months. No seasonality was demonstrated for Group B streptococcus.

The distribution of meningococcal serogroups reported were: serogroup A, 3.9%; serogroup B, 49.1%; serogroup C, 20.2%; serogroup Y, 8.6%; and other serogroups (predominantly W135), 7.7%. Ten percent of isolates were reported to be ungroupable.

A wide variation of meningococcal serogroups was observed in the different geographic regions and these may have important implications from the standpoint of sulphonamide chemoprophylaxis. Most serogroup B, Y, and W135 isolates are sentsitive to sulphonamides, while a considerable proportion of serogroup C isolates were resistant.

Eighteen percent of H. influenzae isolates were reported to be resistant to ampicillin. Little geographical variation in resistance was observed. The percentage of H. influenzae isolates resistant to ampicillin observed in the survey was considerably higher than that in most other reports. In 1976-1977, a survey of 45 of the largest pediatric medical centres in the United States found that 5% of H. influenzae strains causing meningitis or bacteremia were resistant to ampicillin. The 18% rate of resistance in reported cases in 1978, an unexpectedly high figure, may have been inflated by preferential reporting of cases caused by ampicillin-resistant strains.

Through States participating in the national surveillance program, CDC has recently prospectively examined the risk of acquiring severe H. influenzae illness in household contacts of a patient with H. influenzae meningitis. It was found that the risk for this group (0.2%) in the month after exposure was similar to the risk of acquiring secondary meningococcal disease and was especially high in contacts under 6 years of age (0.5%). These results have prompted a nationwide prospective study to examine the efficacy of chemoprophylaxis in preventing secondary cases of H. influenzae disease.

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

REPORTING PERIOD - 9 - 8 - 79 . 22 - 8 - 79 **BULLETIN NUMBER** 79. 17

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	2			1	1	4	11		19
0101 ADENOVIRUS TYPE 1					3	3		1	7
0102 ADENOVIRUS TYPE 2	1			1	2	6		1	11
0103 ADENOVIRUS TYPE 3					1				1
0105 ADENOVIRUS TYPE 5					1	2			3
0107 ADENOVIRUS TYPE 7		1		5	5				11
0119 ADENOVIRUS TYPE 19								4	4
0199 ADENOVIRUS TYPING PENDING					6	4			10
0201 INFLUENZA A VIRUS	10			8	3	8	10		39
0203 INFLUENZA B VIRUS								19	19
0301 PARAINFLUENZA VIRUS TYPE 1	1					1	2	2	6
0302 PARAINFLUENZA VIRUS TYPE 2							2		2
0303 PARAINFLUENZA VIRUS TYPE 3		1			7	3	4		15
0399 PARAINFLUENZA VIRUS TYPING PENDING						1			1
0400 RESPIRATORY SYNCYTIAL VIRUS (RS)	1	18		12	61	46	55	15	208
0500 RHINOVIRUS (ALL TYPES)	2			2	1	7	8	2	22
0600 MYCOPLASMA PNEUMONIAE	2	1			4	4	9	2	22
0821 COXSACKIEVIRUS A21				1					1
0902 COXSACKIEVIRUS B2							5		5
0903 COXSACKIEVIRUS B3				1	1				2
0904 COXSACKIEVIRUS B4				2	5			1	8
0905 COXSACKIEVIRUS B5						1			1
1003 ECHOVIRUS TYPE 3					2			2	4
1011 ECHOVIRUS TYPE 11				1	3	17			21
1022 ECHOVIRUS TYPE 22			2		2	1			5
1030 ECHOVIRUS TYPE 30				2			1		3
1099 ECHOVIRUS TYPING PENDING			1						1
1101 POLIOVIRUS TYPE 1				2					2
1102 POLIOVIRUS TYPE 2	1	1		2					4
1103 POLIOVIRUS TYPE 3		1				1		1	3
1104 POLIOVIRUS-VACCINAL STRAIN					5	1			6
1200 MUMPS VIRUS	3			3			4	2	12

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

REPORTING PERIOD - 9 - 8 - 79 . 22 - 8 - 79 BULLETIN NUMBER 79.17 2.

VIRAL IDENTIFICATIONS FROM CONTRIBUTING LABORATORIES-CONTINUED

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
1300 HERPES VIRUS GROUP-NOT TYPED				4		1			5
1301 HERPES SIMPLEX VIRUS-NOT TYPED	8	1	5	1	2		22	26	65
1303 VARICELLA-ZOSTER VIRUS			1			3			4
1306 HERPES SIMPLEX TYPE 1	3			14		6			23
1307 HERPES SIMPLEX TYPE 2	14			28		1			43
1399 HERPES VIRUS TYPING PENDING						9			9
1401 COXIELLA BURNETI	2			7		3	9		21
1521 MEASLES VIRUS	1			1			2		4
1522 RUBELLA VIRUS	2			2		3		2	9
1530 HEPATITIS A VIRUS								3	3
1532 HEPATITIS B ANTIGEN	2		6	25		6	8	5	52
1535 HEPATITIS A ANTIBODY						2			2
1541 CHLAMYDIA A - TRIC TYPE	38					1		11	50
1555 PAPOVAVIRUS GROUP (PAPILLOMA-HUMAN WART)						1			1
1556 CMV - CYTOMEGALOVIRUS	4	2		7	1	2	3	4	23
1562 REOVIRUS (ALL TYPES)								1	1
1564 ROTAVIRUS	40	4	11	4	25	46		2	132
1565 CALICI VIRUS	1								1
1566 NORWALK AGENT	1					3			4
1571 ENTEROVIRUS TYPE 71 (BRCR)				2					2
1599 ENTEROVIRUS TYPING PENDING					13	1	1		15
ROSS RIVER VIRUS				2			5	1	8
ASTROVORUS	1								1
PARVOVIRUS (LIKE)	10					1			11
Total	150	30	26	140	154	199	161	107	967

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

REPORTING PERIOD - 9-8-79 . 22-8-79 BULLETIN NUMBER 79-17 3

VIRAL IDENTIFICATIONS CATEGORISED INTO SOURCE SPECIMENS

VIRUS OR VIRAL ANTIGEN	FA	BL	NA	CS	SK	EY	UR	BR	GE	OT	TOTAL
0100 ADENOVIRUS NOT TYPED	13	1	6								20
0101 ADENOVIRUS TYPE 1	6		2				1				9
0102 ADENOVIRUS TYPE 2	8		2							1	11
0103 ADENOVIRUS TYPE 3	1										1
0105 ADENOVIRUS TYPE 5	2		1								3
0107 ADENOVIRUS TYPE 7	3		9								12
0119 ADENOVIRUS TYPE 19						1			3		4
0199 ADENOVIRUS TYPING PENDING	4		5			1					10
0201 INFLUENZA A VIRUS		29	10								39
0203 INFLUENZA B VIRUS		11	7	1							19
0301 PARAINFLUENZA VIRUS TYPE 1		1	5								6
0302 PARAINFLUENZA VIRUS TYPE 2		2									2
0303 PARAINFLUENZA VIRUS TYPE 3		2	13								15
0399 PARAINFLUENZA VIRUS TYPING PENDING			1								1
0400 RESPIRATORY SYNCYTIAL VIRUS (RS)	1	13	192					1		1	208
0500 RHINOVIRUS (ALL TYPES)			21							1	22
0600 MYCOPLASMA PNEUMONIAE		22									22
0821 COXSACKIEVIRUS A21			1								1
0902 COXSACKIEVIRUS B2	2		3								5
0903 COXSACKIEVIRUS B3			1	1							2
0904 COXSACKIEVIRUS B4	5		3	1							9
0905 COXSACKIEVIRUS B5	1										1
1003 ECHOVIRUS TYPE 3	1		1	2							4
1011 ECHOVIRUS TYPE 11	16		5	6			1				28
1022 ECHOVIRUS TYPE 22	3		1							1	5
1030 ECHOVIRUS TYPE 30	1		1	1							3
1099 ECHOVIRUS TYPING PENDING	1										1
1101 POLIOVIRUS TYPE 1			1				1				2
1102 POLIOVIRUS TYPE 2			2				1				3
1103 POLIOVIRUS TYPE 3	2		1								3
1104 POLIOVIRUS-VACCINAL STRAIN	5		1								6
1200 MUMPS VIRUS		8	3	1							12
1300 HERPES VIRUS GROUP-NOT TYPED					5						5

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

REPORTING PERIOD - 9 - 8 -79 . 22-8-79 BULLETIN NUMBER 79.17 4

VIRAL IDENTIFICATIONS CATEGORISED INTO SOURCE SPECIMENS-CONTINUED

VIRUS OR VIRAL ANTIGEN	FA	BL	NA	CS	SK	EY	UR	BR	GE	OT	TOTAL
1301 HERPES SIMPLEX VIRUS-NOT TYPED.....		4	18	1	19	1			24	1	68
1303 VARICELLA-ZOSTER VIRUS.....		1			3						4
1306 HERPES SIMPLEX TYPE 1.....			12		9				2		23
1307 HERPES SIMPLEX TYPE 2.....			2		3				40		45
1399 HERPES VIRUS TYPING PENDING.....			1		6				2		9
1401 COXIELLA BURNETI.....		21									21
1521 MEASLES VIRUS.....		2	1	1							4
1522 RUBELLA VIRUS.....		9									9
1530 HEPATITIS A VIRUS.....		3									3
1532 HEPATITIS B ANTIGEN.....		52									52
1535 HEPATITIS A ANTIBODY.....		2									2
1541 CHLAMYDIA A - TRIC TYPE.....									50		50
1555 PAPOVAVIRUS GROUP (PAPILLOMA-HUMAN WART).....					1						1
1556 CMV - CYTOMEGALOVIRUS.....		5	7	1			5		4		22
1562 REOVIRUS (ALL TYPES).....		1									1
1564 ROTAVIRUS.....	132										132
1565 CALICI VIRUS.....	1										1
1566 NORWALK AGENT.....	4										4
1571 ENTEROVIRUS TYPE 71 (BRCR).....	2										2
1599 ENTEROVIRUS TYPING PENDING.....	9		8		1						18
ROSS RIVER VIRUS		8									8
ASTROVIRUS	1										1
PARVOVIRUS	11										11
Total.....	235	197	347	16	47	3	9	1	125	5	985

NOTIFIABLE DISEASES REPORTED IN AUSTRALIA

..7th 4 Weekly Period for .1979..

BULLETIN .79/17...

16.6.79 to 13.7.79 incl.

DISEASE	Total	N.S.W.	VIC	QLD	S.A.	W.A.	TAS.	N.T.	A.C.T.	CUMULATIVE TOTAL TO DATE FOR YEAR
Amoebiasis	2				1	1				10
Ankylostomiasis										* 97
Anthrax										1
Arbovirus infection										45
Brucellosis	3		2		1					35
Campylobacter infections										-
Chancroid	1	1								13
Cholera										-
Congenital rubella syndrome										-
Diphtheria										-
Donovanosis										16
Giardiasis										-
Genital herpes										-
Gonococcal ophthalmia neonatorum										-
Gonorrhoea	733	256	212		61	92	14	83	15	6512
Hepatitis A (infectious)	117	32	35	10	4	4	1	28	3	* 1137
Hepatitis B (serum)	57	9	26	4	14	1		3		* 426
Hepatitis - unspecified	5				5					44
Hydatid disease	4		2		1		1			14
Lassa Fever										-
Legionnaires disease										-
Leprosy	3		1	1		1				28
Leptospirosis	3		1	1	1					37
Lymphogranuloma venereum										1
Malaria	32	8	4	8	7	5				180
Marburg Disease										-
Meningococcal infections	12			11	1					47
Non-specific urethritis										-
Ornithosis	1				1					9
Pertussis (whooping cough)	9		9							151
Plague										-
Poliomyelitis										-
Q. fever	27	1	14	7	5					291
Rabies										-

DISEASE	Total	N.S.W.	VIC	QLD	S.A.	W.A.	TAS.	N.T.	A.C.T.	CUMULATIVE TOTAL TO DATE FOR YEAR
Salmonella infections	97		5	9	21	41	4	17		1270
Shigella infections	35			6	2	9		18		* 318
Smallpox										-
Syphilis	163	78	5		25	21	1	33		1302
Tetanus	1			1						8
Trachoma										-
Tuberculosis (all forms)	113	44	33	6	8	21			1	* 856
Typhoid fever										17
Typhus (all forms)										2
Vibrio parahaemolyticus infections										-
Yellow Fever										-
Yersinia enterocolitica infections										-

Data collected under the Notificable Diseases Returns may bear little or no correlation to that collected under the CDI laboratory scheme. Whilst the latter is a sampling program, the Notifiable Diseases data is dependent upon voluntary reporting by medical practitioners etc.

* Ankylostomiasis

+ 26 cases for the Northern Territory since the last report. Total is now 97 instead of 71.

* Hepatitis A

- 3 cases for Victoria and - 2 cases for the Northern Territory since the last report. Total is now 1137 instead of 1142.

* Hepatitis B

- 2 cases for South Australia since the last report. Total is now 426 instead of 428.

* Shigella

+ 4 cases for Victoria and - 1 case for Western Australia since the last report. Total is now 318 instead of 315.

* Tuberculosis

- 6 cases for Victoria since the last report. Total is now 856 instead of 862.