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Communicable Diseases Intelligence

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Contents:

VIRUS REPORTING SCHEME - A total of 1,007 reports were processed for this period.

Chlamydia psittaci was reported in a 61 year old Western Australian bird fancier who presented with atypical bilateral pneumonia.

A 45 year old South Australian woman who worked on a dairy farm presented with a finger lesion. Electron microscopy of fluid from this lesion showed paravaccinia-like virus (milkers nodules virus) particles.

Nine cases of Q fever were reported in Queensland; seven were clearly occupation-related (meatworkers, farmers etc.). In the other cases a history of occupational exposure was not available.

Ross River Virus infections were reported from Queensland (28) and New South Wales (4). Other reports of interest were:-

. An out of season influenza serotype was reported by the OIC WHO Influenza Reference Centre, B/Victoria/1/85 which closely resembled B/USSR/$_{100}$/83.

. Additionally, 60 cases of Ross River Virus and one case of Q fever in a meatworker were reported from a private pathology laboratory in Rockhampton, Queensland (T.B. Lynch, personal communication).

AUSTRALIAN NATIONAL REFERENCE LABORATORY IN MEDICAL MYCOLOGY

The Department of Mycology attached to the Department of Microbiology of the Royal North Shore Hospital of Sydney, was officially designated the National Reference Laboratory in Medical Mycology by the National Health and Medical Research Council in 1965.

Although this laboratory is well known within Australia by those interested in mycology, it has been found that many institutions, who may require assistance do not know of its existence.

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.

The laboratory provides the following services:

- Identificaton of fungal isolates from clinical material,
- Information and assistance with diagnostic and technical problems in the field of medical and veterinary mycology,
- Maintenance of a collection of fungi of medical importance,
- Distribution of cultures of medical interest for teaching and research purposes (Catalogue available on request),

and is interested in obtaining unusual fungal isolates from Australia for its collection. Assistance from interested laboratories would be appreciated.

DELTA AGENT

The delta agent has now acquired the status of "hepatitis D virus" (HDV) and its clinical importance as a cause of rapidly progressing chronic liver disease is established.

It is an RNA virus which replicates in patients with acute and chronic hepatitis B virus infection. The delta antigen is coated in HBs antigen and is associated ith the RNA genome of the virus. The antigen produces a systemic immune response initially of IgM[1] and subsequently of IgG class.[2] In some cases the acute infection can be diagnosed by the demonstration of the delta antigen in the serum, after cleavage of the hepatitis B surface antigen coat from the virus particles.[3] However, immunoassays for IgM anti-delta are now considered the most convenient diagnostic techniques in this group of patients [1].

The delta antigen can be shown in unfixed and fixed liver tissue by direct immunofluorescence and immunoperoxidase techniques during the chronic infection.[4] Chronic delta replication is usually associated with the presence of IgM anti-delta in the serum and is closely connected with delta antigen in the liver.[5] cDNA probes now enable the detection of the delta RNA in serum [6,7] and have established a close assoicaion with this and the presence of delta antigen in the liver.

The delta agent is highly infectious to patients who are HBs antigen carriers and thus it may spread rapidly through a family or community with a high prevalence of chronic HBV infection.[8] The prevalence of superinfection is widespread geographically,[9] with its prevalence varying from 0.5% to 65% in some areas of North-Western Kenya.

Delta superinfection in children has been described [10] and it has been noted that it is associated with an increased level of inflammatory activity and necrosis of liver cells, and thus with a more rapidly progressive form of HBV related chronic liver disease. Rapidly progressive liver disease has been reported in adult HBV carriers superinfected with the delta virus [11,12] with, in some cases, progression from minimal liver disease to cirrhosis in a period of one year.

As the delta virus can only replicate in the presence of acute or chronic HBV infection and because most delta superinfected carriers are of low HBV infectivity (anti-HBe positive), these patients rarely transmit the infecton to non-HBV infected individuals.

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HEPATITIS B - HEALTH RISK FOR DENTISTS

Recent studies[1,2] confirm the prevalence of hepatitis B markers in dental care personnel, reflecting their exposure to hepatitis B virus (HBV).

HBV is well documented as a significant health risk to dental and medical personnel.[3,4,5] These groups are rarely associated with the transmission of hepatitis B infection to their patients. However, this has been reported for a general practitioner,[6] oral surgeons,[7,8,9] an inhalation therapist,[11] a gynaecologist[10] and recently a dentist in the U.S.A.

This latter study was reported in the Centers for Disease Control Morbidity and Mortality Weekly Report (1985) 34:5:-

Between 1 April and 30 December 1984, nine cases of clinical hepatitis B occurred in a rural Indiana county (population 35,000), this being nine times the normal yearly HB incidence for the previous decade. All cases, except one, had been treated by a dentist in the county.

In mid-September, the dentist who had practised in the county for 20 years and who saw between 100 and 150 patients per week, noted that all three of the cases to date had been his patients. Because of his possible involvement, he was tested for hepatitis B surface antigen (HBsAg) and found to be positive. He then voluntarily suspended his practice and notified health authorities. Initial investigation by the Indiana State Board of Health and CDC revealed that seven patients who had developed clinical HB between 1 April and 1 October were among the dentist's patients. All were positive for HBsAg, subtype ad, and all of six available sera were positive for the IgM fraction of hepatitis B core antibody (anti-HBc IgM), indicating probable recent infection. Although the dentist had no known history of HB infection, his serum was positive for HBsAg, subtype ad, and hepatitis e antigen (HBeAg) but negative for anti-HBcIgM.

The dentist did not routinely wear gloves when treating patients but denied lacerations or dermatitis on the hands. He gave no history of hepatitis and had no knowledge of HB carriers in his practice. Other than practising dentistry, he

denied all risk factors for HB. He was not a blood donor and had never been tested serologically for hepatitis. On 25 April, and 30 May, 1984 he had received his first two doses of HB vaccine.

Further investigation of the outbreak by CDC in late October concentrated on case-finding and interviews of the dentist, his assistants, and the known HB patients and their families. Appropriate blood specimens were also taken. A comparison of the dentist's 1984 patient list with reported HB cases in Indiana uncovered no new cases. However, a review of county residents rejected for blood donation because of HBsAg-positivity found one patient, who, asymptomatic at the time, had been treated by the dentist several times between May and July and was rejected for blood donation in August. Since she had donated blood in March her HB infection was considered outbreak-related. Clinical disease, however, did not develop until 13 November, nearly 3 months after she became antigen-positive.

The spouse of one HB patient was found to be HBsAg positive, serotype ad, HBeAg positive, and anti-HBc IgM negative. He had not been treated by the dentist within the last 2 years but had other risk factors for HB. No other patient's family member had positive HB markers. The patients had no histories of risk factors for HB except traumatic dental work (procedures that produced bleeding) by the dentist 3-5 months before onset of symptoms. None of the HB patients were taking hepatotoxic drugs. Antibody and antigen tests for delta virus were negative on the dentist and all seven of the HB patients tested.

In mid-December, a large seroprevalence study was carried out on the dentist's patients in an attempt to determine the degree of subclinical transmission; results of this study are pending. The dentist has not resumed his practice.

A recent Australian study[2] comments that dentists should consider being tested for evidence of exposure to hepatitis B virus and that those who are not immune should consider vaccination.

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SUBOPTIMAL RESPONSE TO HEPATITIS B VACCINE GIVEN BY INJECTION INTO THE BUTTOCK (from MMWR (1985) 34 : 105-106, 113)

Hepatitis B (HB) vaccine was licensed in the USA in November 1981 as a highly immunogenic and effective vaccine against hepatitis B virus (HBV) infection. Large studies before licensure demonstrated, with one exception, that the vaccine induced antibody in over 90% of healthy adult recipients of the three-dose series.[1,2,3] The one exception, in which only

85% of recipients responded to vaccination, was later shown to be caused by partial freezing of the vaccine during shipment.(4)

Since the vaccine licensure, however, the vaccine manufacturer (Merck, Sharp & Dohme) and CDC have received reports of suboptimal response to vaccine in the health-care personnel of a number of hospitals and other vaccine users. Two such examples, in which only 82% and 68% of normal adults responded to vaccination, have recently been published.(5,6) Initial investigations of these and other reports by the manufacturer and by CDC included site visits, repeat serologic testing of vaccine recipients to confirm poor response, assays of residual vaccine for evidence of freezing and for retention of potency, and review of vaccine lots used. These investigations generally confirmed suboptimal vaccine response but failed to identify any specific cause. The investigations did indicate that, in many such instances, vaccine had been given by buttock (gluteal) injection, in contrast to the arm (deltoid) injection used in all prelicensure vaccine studies.

Two recent investigations, one by the vaccine manufacturer and the other by CDC, indicate that site of vaccine injection is important in explaining suboptimal response to vaccine in many vaccine programs. Both studies were retrospective telephone surveys of hospitals or hemodialysis units that had vaccinated and then serotested significant numbers of persons after vaccination.

Vaccine manufacturer's study: In December 1984, the vaccine manufacturer surveyed two groups of vaccine users: over 90 hospitals that had contacted the manufacturer reporting suboptimal vaccine response and an additional 12 hospitals known to have conducted large vaccination programs and to have done postvaccination testing. The telephone survey verified the exact number of persons completing vaccination and the number failing to respond to vaccine and determined the vaccine injection site. Injection site for the hospital was classified as arm if over 90% of persons received vaccine in the arm; buttock if over 90% received vaccine in the buttock; and mixed for all others.

In both surveys, vaccine response rate was significantly higher in hospitals using arm injection than in those using buttock injection (Table 1). Among hospitals that reported suboptimal vaccine reponse, the pooled response rate for vaccinees was 88% in hospitals using arm injection and 73% in those using buttock injection (p 0.01). Among the 12 other hospitals, response rates were higher, as would be expected for hospitals not selected for poor vaccine response; however, response to arm injection was higher than for buttock injection. Furthermore, when 55 hospitals that had vaccinated and tested 50 or more persons were ranked by response rate to vaccine and compared, arm injection was clearly superior (Figure 1). Among 18 institutions reporting 90% or better response, 13 used arm injection, and one used buttock. Among 21 reporting lower than 80% response, 18 used buttock injection, and two used arm injection.

CDC's study: To avoid selection bias inherent in the above study and to more accurately assess vaccine response in a representative group of vaccine users, in January 1985, CDC's Hepatitis Branch assessed vaccine response among staff in all hemodialysis units known to have vaccinated 20 or more staff as

of December 1983. Sixty-three centres were contacted and interviewed, and 57 were included in the final data. Among six centres not included, one refused to participate; two did not do postvaccination testing; two tested only a small sample of vaccinees; and one had participated in a prelicensure vaccine trial. In addition to the questions in the first survey, centres were asked to identify the laboratory method of postvaccination testing, length of needle used for injection, and proportions of vaccinees who were over 40 years of age or who were significantly overweight. Among the 57 centres, 20 used arm injection (as defined above); 23 used buttock injection; and 14 used mixed sites of injection.

Antibody response was significantly higher in centres using the arm as the injection site (Table 2). The average vaccine response in such centres was 93%, compared with 82% response in sites using buttock injection ($p < 0.01$). This difference remained highly significant when the method of postvaccination testing and the proportions of vaccinees who were over 40 years old or overweight were considered in the analysis. Despite overall poorer response with buttock injection, response in individual centres varied widely (Figure 1). Among centres using buttock injection, eight (35%) reported excellent response to vaccine (over 90% responding), and nine (39%) reported poor response rates (fewer than 80% responding). In contrast, 75% of centres using arm injection reported excellent response, and only one (5%) reported poor response. Seventeen centres using the buttock as injection site reported using 1 1/2-inch needles, while the other six used 1-inch needles. There was no difference in response rates among these two groups.

TABLE 1. Vaccine response in hospitals reporting suboptimal and normal response to HBV vaccine, by injection site — Merck, Sharp & Dohme study, December 1984

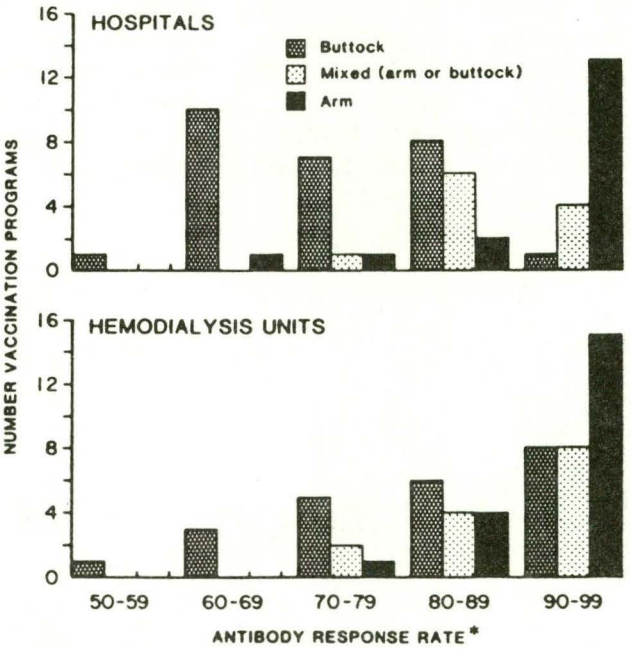
Group	Injection site	Reported seroconversion rate		p value*
		No. tested	% with antibody	
Suboptimal response†	Arm	1,780	88	< 0.01
	Mixed	764	85	
	Buttock	4,786	73	
Normal response§	Arm	2,058	96	< 0.05
	Mixed	307	94	
	Buttock	81	90	

*Arm, compared with buttock.
†Ninety-three institutions.
§Twelve institutions.

TABLE 2. Response to hepatitis B vaccine in hemodialysis staff, by injection site — CDC study, January 1985

Injection site	No. centers	Average response (%)		Total seroconversion rate in vaccinees	
		Mean	S.D.	No. vaccinated	% with antibody
Arm	20	93.0	± 7.3	733	93.9
Mixed	14	89.1	± 8.7	478	91.2
Buttock	23	81.9	± 12.1	664	81.0
Buttock, compared with arm		$p < 0.01$		$p < 0.001$	
Mixed, compared with arm		NS		NS	

FIGURE 1. Response rates to hepatitis B vaccine in hospitals and hemodialysis units, by injection site — Merck, Sharp & Dohme and CDC studies, December 1984 and January 1985



*Percentage of vaccinated persons in each program who developed antibody after vaccination. Antibody was detected by commercial radioimmunoassay or enzyme immunoassay tests.

MMWR EDITORIAL COMMENT Although these studies are preliminary, they strongly suggest that response to HB vaccine is higher when vaccine is given in the arm than in the buttock. Furthermore, they appear to provide an explanation for poor rates of response to HB vaccine reported in some vaccine programs. These data are the first to indicate that response to any inactivated vaccine given intramuscularly to adults may vary with injection site. The Immunization Practices Advisory Committee (ACIP) has previously recommended that the arm is the preferred site of injection for all adult vaccines.(7) However, the present studies demonstrate that the buttock is a commonly used site for HB vaccination. Because of the important implications for use of HB vaccine and other killed vaccines, a prospective study has been initiated to confirm these data.

The physiologic reasons for lower response rate to vaccine injections in the buttock are yet to be defined. The most likely explanation is that injections given in the buttock frequently fail to reach muscle and are instead deposited in fat where the vaccine may not be well mobilized. The authors of a recent study using CAT scans to assess gluteal fat thickness estimated that, when adults are given injections in the buttock using a 3.5-cm (1-3/8-inch) needle, 85% of injections in men and 95% of those in women are deposited in fat rather than muscle.(8) An earlier study showed that lidocaine is mobilized more slowly when injected in the buttock than when given in the arm.(9)

Pending further data, the ACIP and CDC recommend that the arm be used as the site of HB vaccine administration in all adults. For hemodialysis patients, who do not respond as well to vaccine as immunocompetent individuals, vaccine should be given in the arm unless this will jeopardize shunt access. For infants born to HBV-carrier mothers, the preferred site for HB vaccination remains the anterolateral thigh.

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AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

REPORTING PERIOD - 28/2/85 – 13/3/85 BULLETIN NUMBER 85/6

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	3	1	3			2	11	2	22
0101 ADENOVIRUS TYPE 1	2			1		1			4
0102 ADENOVIRUS TYPE 2		1		1		2		1	5
0103 ADENOVIRUS TYPE 3				3		1		4	8
0104 ADENOVIRUS TYPE 4								1	1
0105 ADENOVIRUS TYPE 5						1			1
0112 ADENOVIRUS TYPE 12		1							1
0119 ADENOVIRUS TYPE 19	1								1
0135 ADENOVIRUS TYPE 35				1					1
0199 ADENOVIRUS TYPING PENDING			1			1			2
0201 INFLUENZA A VIRUS	1		1					3	5
0203 INFLUENZA B VIRUS								1	1
0302 PARAINFLUENZA VIRUS TYPE 2						2		1	3
0303 PARAINFLUENZA VIRUS TYPE 3	3			1			1	2	7
0304 PARAINFLUENZA VIRUS TYPE 4								1	1
0399 PARAINFLUENZA VIRUS TYPING PENDING						1			1
0400 RESPIRATORY SYNCYTIAL VIRUS (RS)	2	5				4	2		13
0500 RHINOVIRUS (ALL TYPES)				2		8	3		13
0600 MYCOPLASMA PNEUMONIAE	1	1	1			3	1		7
0700 ORNITHOSIS-PSITTACOSIS								1	1
0809 COXSACKIEVIRUS A9								2	2
0905 COXSACKIEVIRUS B5	3					1			4
1001 ECHOVIRUS TYPE 1						1			1
1003 ECHOVIRUS TYPE 3		1							1
1007 ECHOVIRUS TYPE 7	4							2	6
1011 ECHOVIRUS TYPE 11			1						1
1012 ECHOVIRUS TYPE 12								1	1
1013 ECHOVIRUS TYPE 13								1	1
1020 ECHOVIRUS TYPE 20				2					2
1030 ECHOVIRUS TYPE 30	1			1					2
1031 ECHOVIRUS TYPE 31				1					1
1100 POLIOVIRUS NOT TYPED			6						6
1101 POLIOVIRUS TYPE 1	1	1							2
1102 POLIOVIRUS TYPE 2		1							1
1103 POLIOVIRUS TYPE 3				1					1
1200 MUMPS VIRUS	2	1					1		4
1300 HERPES VIRUS GROUP-NOT TYPED	26			1				2	29
1301 HERPES SIMPLEX VIRUS NOT-TYPED		1					1	1	3
1302 EPSTEIN-BARR VIRUS (EB VIRUS)	6		1					8	15
1303 VARICELLA-ZOSTER VIRUS	2		1	2		2	1	1	9
1306 HERPES SIMPLEX TYPE 1	13		11	17		21	25	34	121
1307 HERPES SIMPLEX TYPE 2	69		21	44		26	68	69	297
1399 HERPES VIRUS TYPING PENDING				2		3			5
1401 COXIELLA BURNETI							9		9
1502 PICORNA VIRUS-NOT TYPED	4		12						16
1514 MOLLUSCUM CONTAGIOSUM						1			1
1516 MILKERS NODULE VIRUS						1			1
1521 MEASLES VIRUS			2					2	4
1522 RUBELLA VIRUS	5					3	2	1	11
1530 HEPATITIS A VIRUS	3	1	1						5
1531 HEPATITIS B VIRUS	58		8	13				4	83
1532 HEPATITIS B ANTIGEN	6		3			12	4		25
1535 HEPATITIS A ANTIBODY						4	1	1	6
1541 CHLAMYDIA A - C TRACHOMATIS	33		2	11			20	76	142
1556 CMV - CYTOMEGALOVIRUS	5	1	2	10		1	6	3	28
1563 CORONAVIRUS								1	1
1564 ROTAVIRUS	1		9			15		1	26
1599 ENTEROVIRUS TYPING PENDING		2	1						3
9992 ROSS RIVER VIRUS							32		32
9994 SMALL VIRUS (LIKE) PARTICLE				1					1
Total	255	18	87	115		117	188	227	1,007

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

PERIOD : 28/2/85 to 13/3/85 .... 85/6

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.....	2	2					11				1
0101 ADENOVIRUS TYPE 1.....	1	2					1				
0102 ADENOVIRUS TYPE 2.....		3					1	1			
0103 ADENOVIRUS TYPE 3.....	1	1									
0104 ADENOVIRUS TYPE 4.....		1					1				
0105 ADENOVIRUS TYPE 5.....		1									
0112 ADENOVIRUS TYPE 12.....							1				
0201 INFLUENZA A VIRUS.....		3									
0203 INFLUENZA B VIRUS.....		1									
0302 PARAINFLUENZA VIRUS TYPE 2....		3									
0303 PARAINFLUENZA VIRUS TYPE 3....	1	5									
0304 PARAINFLUENZA VIRUS TYPE 4....		1									
0400 RESPIRATORY SYNCYTIAL VIRUS (RS).....		13									
0500 RHINOVIRUS (ALL TYPES).....		13									
0600 MYCOPLASMA PNEUMONIAE.....	1	5									
0700 ORNITHOSIS-PSITTACOSIS.....		1									
0809 COXSACKIEVIRUS A9.....		1									
0905 COXSACKIEVIRUS B5.....							4				
1001 ECHOVIRUS TYPE 1.....				1							
1003 ECHOVIRUS TYPE 3.....				1							
1007 ECHOVIRUS TYPE 7.....	2	2					1				
1011 ECHOVIRUS TYPE 11.....				1							
1013 ECHOVIRUS TYPE 13.....				1							
1020 ECHOVIRUS TYPE 20.....		1		1							
1030 ECHOVIRUS TYPE 30.....				1							
1031 ECHOVIRUS TYPE 31.....				1							
1100 POLIOVIRUS NOT TYPED.....							6				
1101 POLIOVIRUS TYPE 1.....		1					1				
1102 POLIOVIRUS TYPE 2.....		1									
1103 POLIOVIRUS TYPE 3.....		1									
1200 MUMPS VIRUS.....				1							
1300 HERPES VIRUS GROUP-NOT TYPED..	2										13
1301 HERPES SIMPLEX VIRUS NOT-TYPED		1									2
1302 EPSTEIN-BARR VIRUS (EB VIRUS).	2	3						1			
1303 VARICELLA-ZOSTER VIRUS.....		1				1					6
1306 HERPES SIMPLEX TYPE 1.....	5	4	1	1						1	61
1307 HERPES SIMPLEX TYPE 2.....	11										3
1401 COXIELLA BURNETI.....	4							3			
1502 PICORNA VIRUS-NOT TYPED.....		2					11				1
1514 MOLLUSCUM CONTAGIOSUM.....											1
1516 MILKERS NODULE VIRUS.....											1
1521 MEASLES VIRUS.....	1				1						1
1522 RUBELLA VIRUS.....	1										9
1530 HEPATITIS A VIRUS.....								5			
1531 HEPATITIS B VIRUS.....	54							25			
1532 HEPATITIS B ANTIGEN.....	6						1	11			
1535 HEPATITIS A ANTIBODY.....								6			
1556 CMV - CYTOMEGALOVIRUS.....	1	4								3	
1563 CORONAVIRUS.....	1										
1564 ROTAVIRUS.....	2						23				
9992 ROSS RIVER VIRUS.....	7										10
9994 SMALL VIRUS (LIKE) PARTICLE...							1				
Total.....	105	77	1	9	1	1	63	52		4	140

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

PERIOD : 28/2/85 to 13/3/85 ... 85/6

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
0100 ADENOVIRUS NOT TYPED.....	3				1			1		
0103 ADENOVIRUS TYPE 3.....	3						1	3		
0119 ADENOVIRUS TYPE 19.....		1								
0135 ADENOVIRUS TYPE 35.....									1	
0201 INFLUENZA A VIRUS.....			1							
0303 PARAINFLUENZA VIRUS TYPE 3....								1		
0304 PARAINFLUENZA VIRUS TYPE 4....								1		
0600 MYCOPLASMA PNEUMONIAE.....					2		1			
0809 COXSACKIEVIRUS A9.....							1	1		
1007 ECHOVIRUS TYPE 7.....								1	1	
1012 ECHOVIRUS TYPE 12.....	1									
1030 ECHOVIRUS TYPE 30.....							1			
1200 MUMPS VIRUS.....			3					1		
1300 HERPES VIRUS GROUP-NOT TYPED..		13								
1302 EPSTEIN-BARR VIRUS (EB VIRUS).		1	7				2			
1303 VARICELLA-ZOSTER VIRUS.....	1									
1306 HERPES SIMPLEX TYPE 1.....	11	37						1	2	
1307 HERPES SIMPLEX TYPE 2.....		252							3	
1399 HERPES VIRUS TYPING PENDING...		2								
1401 COXIELLA BURNETI.....					2			4		
1502 PICORNA VIRUS-NOT TYPED.....							2			
1521 MEASLES VIRUS.....					1					
1522 RUBELLA VIRUS.....					2				1	
1531 HEPATITIS B VIRUS.....					3				2	
1532 HEPATITIS B ANTIGEN.....					1				6	
1541 CHLAMYDIA A - C.TRACHOMATIS...	1	141								
1556 CMV - CYTOMEGALOVIRUS.....		5				3	3	1	8	
1564 ROTAVIRUS.....									1	
9992 ROSS RIVER VIRUS.....					23			9		
Total.....	20	452	11		35	3	11	24	25	