

Additional Reports

Rotavirus Surveillance

The National Rotavirus Reference Centre (NRRC) undertakes surveillance and characterisation of rotavirus strains causing annual epidemics of severe diarrhoea in young children throughout Australia.

There are currently fourteen laboratories contributing data and rotavirus specimens for the characterisation of representative rotavirus serotypes.

The NRRC is happy to give and receive notifications of rotavirus outbreaks Australia-wide. The NRRC can be contacted at the Department of Gastroenterology and Clinical Nutrition, Royal Children's Hospital, Flemington Road, Parkville, Victoria 3052. Telephone: (03) 9345 5069, Facsimile: (03) 9345 6240, Email: masendyp@cryptic.rch.unimelb.edu.au. For more information see *CDI* 2000;24:10.

June – December 1999

The last report (*CDI* 1999;23:315) presented data collected retrospectively for the period January to July 1999. Active rotavirus surveillance began in June 1999. From June to December 1999 over 1,300 rotavirus specimens were collected from 14 centres Australia-wide. Most centres reported rotavirus seasons, with Sydney experiencing a 'big season' (over 200 specimens). In contrast, Hobart reported only 7 rotavirus positives for the same period. Serotype analysis of representative specimens has shown serotype G1 to be the dominant infecting serotype Australia-wide. This result is consistent with previous findings in Australia.^{1,2}

Serotype G9 rotaviruses appeared in Australia for the first time in Sydney in June 1999.³ The G9 rotaviruses appeared in Sydney, Melbourne and Brisbane initially, and were considered a random occurrence and exclusive to the three cities. However, ongoing serotyping analysis has shown G9 rotaviruses to be the second most common serotype. They were detected in (in order of chronological appearance) Alice Springs, Narrabri, Perth, Adelaide and Newcastle. The serotyping EIA results were confirmed by northern hybridisation analysis and/or reverse transcriptase/polymerase chain reaction (RT/PCR) assay, using G9 specific oligonucleotide primers for the outer capsid viral protein, VP7.

The G9 viruses displayed genetic variation with three different RNA electrophoretic migration patterns. Differing reactivities with the G9-specific monoclonal antibody, suggests that they are antigenically different viruses. Sequence analysis has shown that one of the viruses resembles a G9 strain from India.³ The detection of G9 rotaviruses in the United States of America (USA),⁴ Bangladesh,⁵ India,⁶ the United Kingdom,^{7,8} Malawi,⁹ and Nigeria¹⁰ suggests that G9 viruses may be emerging as important human pathogens. G9 rotaviruses isolated in the USA have been shown to display more than one subgroup specificity.¹¹ To date, the G9 viruses reported in Australia have been limited to only one subgroup. Further analysis of these specimens is warranted.

Retrospective RT/PCR analysis of specimens that were previously unable to be assigned a serotype, has shown that G9 rotaviruses were present in Perth and Melbourne in 1997 and 1998. These were isolated incidents, and do not appear to be as important as those seen in 1999. The virus took 3 months to cross the country, and appeared simultaneously in Melbourne and Sydney in June 1999. The extent of the spread shows the importance of this pathogen. The appearance of G9 viruses coincides with the diminishing prevalence of serotype G4 viruses, which share some serological similarities with the G9 virus. This leads us to believe there are active selective pressures on circulating rotavirus serotypes. This observation is limited to the 1999 sampling period and requires further investigation.

The National Rotavirus Reference Centre welcomes notifications of rotavirus outbreaks and receipt of rotavirus positive specimens from those outbreaks wherever possible.

References

- Bishop RF, Unicomb LE, Barnes GL. Epidemiology of rotavirus serotypes in Melbourne, Australia, 1973-1989. *J Clin Microbiol* 1991;29:862-868.
- Masendycz PJ, Unicomb LE, Kirkwood CD, Bishop RF. Rotavirus serotypes causing acute diarrhoea in young children in six Australian cities, 1989-1992. *J Clin Microbiol* 1994;32:2315-2317.
- Palombo EA, Masendycz PJ, Bugg HC, Bogdanovic-Sakran N, Barnes GL, Bishop RF. Emergence of serotype G9 human rotaviruses in Australia. *J Clin Microbiol* 2000;38:1305-1306.
- Ramachandran M, Gentsch JR, Parashar UD et al. Detection and characterisation of novel rotavirus strains in the United States. *J Clin Microbiol* 1998;36:3223-3229.
- Unicomb LE, Podder G, Gentsch JR et al. Evidence of high-frequency genomic reassortment of group A rotavirus strains in Bangladesh: emergence of type G9 in 1995. *J Clin Microbiol* 1999;37:1885-1891.
- Ramachandran M, Das BK, Vij A et al. Unusual diversity of human rotavirus G and P genotypes in India. *J Clin Microbiol* 1996;34:436-439.
- Itturizza M, Green J, Ramsay M, Brown D, Desselberger U, Gray JJ. Abstract 18th Annual Meeting American Society for Virology. 1999, abstr W43-2, p.136.
- Steele AD, Cubitt WD. Abstract 18th Annual Meeting American Society for Virology. 1999, abstr W43-3, p.136.
- Cunliffe. Rotavirus G and P types in children with acute diarrhea in Blantyre, Malawi, from 1997 to 1998: predominance of novel P(6) G8 strains. *J Med Virol* 57:308-312.
- Akran V, Mbida A, Mwenda J et al. Abstract X11th Int Cong Virol 1999, abstr. VP25.11, p.374.
- Griffin DD, Kirkwood CD, Parashar UD et al. A comparison of three consecutive rotavirus seasons in the United States and the identification of a rare strain (in press).

HIV and AIDS Surveillance

National surveillance for HIV disease is coordinated by the National Centre in HIV Epidemiology and Clinical Research (NCHECR), in collaboration with State and Territory health authorities and the Commonwealth of Australia. Cases of HIV infection are notified to the National HIV Database on the first occasion of diagnosis in Australia, by either the diagnosing laboratory (ACT, New South Wales, Tasmania, Victoria) or by a combination of laboratory and doctor sources (Northern Territory, Queensland, South Australia, Western Australia). Cases of AIDS are notified through the State and Territory health authorities to the National AIDS Registry. Diagnoses of both HIV infection and AIDS are notified with the person's date of birth and name code, to minimise duplicate notifications while maintaining confidentiality.

Tabulations of diagnoses of HIV infection and AIDS are based on data available three months after the end of the reporting interval indicated, to allow for reporting delay and to incorporate newly available information. More detailed information on diagnoses of HIV infection and AIDS is published in the quarterly Australian HIV Surveillance Report, and annually in HIV/AIDS and related diseases in Australia Annual Surveillance Report. The reports are available from the National Centre in HIV Epidemiology and Clinical Research, 376 Victoria Street, Darlinghurst NSW 2010. Telephone: (02) 9332 4648; Facsimile: (02) 9332 1837; <http://www.med.unsw.edu.au/nchechr>.

HIV and AIDS diagnoses and deaths following AIDS reported for 1 to 30 November 1999, as reported to 29 February 2000, are included in this issue of CDI (Tables 6 and 7).

Table 6. New diagnoses of HIV infection, new diagnoses of AIDS and deaths following AIDS occurring in the period 1 to 30 November 1999, by sex and State or Territory of diagnosis

										Totals for Australia			
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	This period 1999	This period 1998	Year to date 1999	Year to date 1998
HIV diagnoses	Female	0	3	1	0	0	0	1	2	7	11	70	87
	Male	0	27	1	7	1	0	10	3	49	61	554	585
	Sex not reported	0	0	0	0	0	0	0	0	0	1	3	6
	Total ¹	0	30	2	7	1	0	11	5	56	73	627	678
AIDS diagnoses	Female	0	1	0	0	0	0	0	0	1	1	14	16
	Male	0	4	0	3	0	0	3	0	10	14	113	254
	Total ¹	0	5	0	3	0	0	3	0	11	15	127	270
AIDS deaths	Female	0	0	0	0	0	0	0	0	0	0	3	8
	Male	0	2	0	0	0	0	4	0	6	12	88	135
	Total ¹	0	2	0	0	0	0	4	0	6	12	92	143

1. Persons whose sex was reported as transgender are included in the totals.

Table 7. Cumulative diagnoses of HIV infection, AIDS and deaths following AIDS since the introduction of HIV antibody testing to 30 November 1999, by sex and State or Territory

		State or Territory									
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia	
HIV diagnoses	Female	25	603	11	145	61	6	212	113	1,176	
	Male	192	10,764	108	1,956	672	79	3,864	902	18,537	
	Sex not reported	0	259	0	0	0	0	24	0	283	
	Total ¹	217	11,645	119	2,108	733	85	4,113	1,018	20,038	
AIDS diagnoses	Female	8	182	0	47	25	3	68	26	359	
	Male	86	4,612	36	811	345	44	1,603	345	7,882	
	Total ¹	94	4,806	36	860	370	47	1,678	373	8,264	
AIDS deaths	Female	3	113	0	31	15	2	47	16	227	
	Male	65	3,165	24	564	230	28	1,260	246	5,582	
	Total ¹	68	3,286	24	597	245	30	1,313	263	5,826	

1. Persons whose sex was reported as transgender are included in the totals.

Childhood Immunisation Coverage

born between 1 October and 31 December 1997, according to the Australian Standard Vaccination Schedule.

Tables 8 and 9 provide the latest quarterly report on childhood immunisation coverage from the Australian Childhood Immunisation Register (ACIR).

A full description of the methodology used can be found in *CDI 1998;22:36-37*.

The data show the percentage of children fully immunised at age 12 months for the cohort born between 1 October and 31 December 1998 and at 24 months of age for the cohort

Table 8. Percentage of children immunised at 1 year of age, preliminary results by disease and State for the birth cohort 1 October to 31 December 1998; assessment date 31 March 2000.

Vaccine	State or Territory								Australia
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Total number of children	1,046	21,322	808	11,233	4,527	1,610	15,524	6,179	62,249
Diphtheria, Tetanus, Pertussis (%)	92.4	88.3	85.5	90.4	90.5	90.1	90.7	87.8	89.5
Poliomyelitis (%)	92.4	88.3	85.5	90.4	90.5	90.1	90.7	87.8	89.5
<i>Haemophilus influenzae</i> type b (%)	92.1	87.4	88.4	90.6	89.4	89.1	90.1	86.9	88.9
Fully immunised (%)	91.8	86.6	83.0	89.7	89.1	88.3	89.4	85.8	88.1
Change in fully immunised since last quarter (%)	+2.0	+1.9	-0.8	-0.2	+1.1	+0.1	+1.4	-0.1	+1.1

Table 9. Proportion of children immunised at 2 years of age, preliminary results by disease and State for the birth cohort 1 October to 31 December 1997; assessment date 31 March 2000¹

Vaccine	State or Territory								Australia
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Total number of children	1,055	22,021	843	11,867	4,568	1,536	15,667	6,146	63,703
Diphtheria, Tetanus, Pertussis (%)	85.8	82.8	77.3	86.6	84.2	84.6	84.0	79.8	83.6
Poliomyelitis (%)	85.8	82.8	77.3	86.6	84.2	84.6	84.1	79.9	83.7
<i>Haemophilus influenzae</i> type b (%)	85.6	82.0	85.6	86.9	83.0	84.4	83.8	79.4	83.4
Measles, Mumps, Rubella (%)	90.5	87.8	87.4	90.7	91.3	92.2	91.8	87.8	89.7
Fully immunised (%)²	82.6	73.8	73.0	81.5	77.9	78.7	77.7	73.3	76.7
Change in fully immunised since last quarter (%)	0.1	+2.8	+3.4	+2.1	+0.2	+4.7	+0.9	+0.3	+1.8

1. The 12 months age data for this cohort was published in *CDI 1999;23:110*.

2. These data relating to 2 year old children should be considered as preliminary. The proportions shown as "fully immunised" appear low when compared with the proportions for individual vaccines. This is at least partly due to poor identification of children on immunisation encounter forms.

Acknowledgment: These figures were provided by the Health Insurance Commission (HIC), to specifications provided by the Commonwealth Department of Health and Aged Care. For further information on these figures or data on the Australian Childhood Immunisation Register please contact the Immunisation Section of the HIC: Telephone 02 6124 6607.