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Congenital Malformations Australia 1981-1992

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Requests for data

Any enquiries about data for regions within States and Territories and for individual hospitals should be directed initially to State and Territory health departments. Other enquiries should be made to the address below.

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Abbreviations

NSW	-	New South Wales
Vic	-	Victoria
Qld	-	Queensland
WA	-	Western Australia
SA	-	South Australia
Tas	-	Tasmania
ACT	-	Australian Capital Territory
NT	-	Northern Territory
ABS	-	Australian Bureau of Statistics
AIHW	-	Australian Institute of Health and Welfare
NPSU	-	National Perinatal Statistics Unit
a/s	-	atresia/stenosis
ASD	-	atrial septal defect
BPA	-	British Paediatric Association
bronch.	-	bronchus
cerv.	-	cervix
dis.	-	disease
dysgen.	-	dysgenesis
grt.	-	great
ICD	-	International Classification of Diseases
L	-	left
musculoskelet.	-	musculoskeletal
NEC	-	not elsewhere classified
NOS	-	not otherwise specified
Pat.	-	patent
pulm.	-	pulmonary
spec.	-	specified
st./insuffic.	-	stenosis/insufficiency
synd.	-	syndrome
TOF	-	tracheo-oesophageal fistula
trach.	-	trachea
transpstn.	-	transposition
Vent.	-	ventricular

Highlights

- Among 2.85 million births in the period from 1981 to 1992, 44,338 (1.6 per cent) infants with major congenital malformations diagnosed at birth or in the first 28 days were notified to the national monitoring system. In 1992, 4,500 infants were notified.

- The data collected by State and Territory perinatal data systems and birth defects registers provided important information about the occurrence of congenital malformations, their regional variations, the characteristics of the mothers, and the survival of malformed infants.

- Anencephalus and the other neural tube defects, spina bifida and encephalocele, declined in occurrence among births between 1982 and 1992. The decrease was more pronounced for anencephalus than for spina bifida or encephalocele. Induced abortions after prenatal diagnosis of these neural tube defects increased during the same period.

- Increasing trends in reported rates occurred for ventricular septal defect, hypospadias, obstructive defects of the renal pelvis and ureter, gastroschisis and trisomy 18. There was a downward trend for microcephalus. Improving ascertainment was likely to be an important factor contributing to increasing trends of some of these malformations.

- Many infants with major congenital malformations, especially those with multiple malformations, had an increased risk of stillbirth or neonatal death within 28 days of birth.

- Neural tube defects were more common among births to younger than to older mothers. Gastroschisis was markedly more common for younger than for older mothers. Small intestinal atresia or stenosis and exomphalos were more common among births to older mothers. The well known association of increasing rates of trisomy 21 and trisomy 18 with advancing maternal age was confirmed.

- Most of the 25 selected major congenital malformations were more common in twins than in singleton births. Those with a rate in twins more than twice the rate in singletons were anencephalus, hydrocephalus, coarctation of the aorta, oesophageal atresia or stenosis, small intestinal atresia or stenosis, renal agenesis and dysgenesis, cystic kidney disease, and exomphalos. Trisomy 21 (Down syndrome) and trisomy 18 occurred slightly less commonly in twins than in singleton births.

- Compared with the usual sex ratio at birth of 105 males to 100 females, there were high sex ratios in excess of 120:100 for hydrocephalus, transposition of the great vessels, hypoplastic left heart, coarctation of the aorta, cleft lip, oesophageal atresia, anorectal atresia, renal agenesis, cystic kidney disease, obstructive defects of the renal pelvis and ureter, limb reduction defects, diaphragmatic hernia, exomphalos, and trisomy 21. Major malformations that occurred more commonly in females than in males were anencephalus, spina bifida, encephalocele, microcephalus, cleft palate, congenital dislocation of the hip, and trisomy 18.

- Many infants with major congenital malformations were born preterm (less than 37 weeks' gestation) or had a low birthweight (less than 2500g).

- The lack of complete data on induced abortions of malformed fetuses in some States hampers interpretation of trends of those malformations that are often diagnosed prenatally.

1 Introduction

Congenital malformations are a significant public health problem because they are relatively common, they are major reasons for admission to hospital during infancy and childhood, they may frequently lead to disabilities and handicaps, and some types are fatal. In 1992, 20.4 per cent (512/2,508) of all perinatal deaths in Australia, and 27.0 per cent (498/1,843) of infant deaths, were due to congenital malformations.

Data collected in the State and Territory perinatal data systems, by birth defects registers, and from hospitals provide valuable information on the number of children with malformations diagnosed early in life. These data enable analysis of trends over time and variations by region; collaborative studies of the descriptive epidemiology of congenital malformations, both within Australia and internationally; and evaluation of the impact of prenatal diagnosis or other interventions on trends in occurrence. Almost universal prenatal screening of pregnant women by ultrasound in Australia, and the frequent use of amniocentesis or chorionic villus sampling in high-risk women, has increased the likelihood of detecting some types of congenital malformations during fetal life. When this occurs, couples must then decide on the most appropriate course of action after they have been counselled about available options. If they elect to have the pregnancy terminated, it is important to collect information about these pregnancies so that the effect on trends can be monitored adequately.

This report contains national data on congenital malformations among births that occurred in the period 1981 to 1992. Data for the years prior to 1992 were published previously in quarterly congenital malformations monitoring reports.

1.1 Criteria

Congenital malformations are anatomical defects or chromosomal abnormalities that are present at birth. Major congenital malformations are either lethal or significantly affect the individual's function or appearance. Minor malformations do not have functional or cosmetic importance but may sometimes signify an underlying genetic disorder.

Major congenital malformations diagnosed in liveborn infants in the first 28 days, or in stillbirths of at least 20 weeks' gestation or 400g birthweight, are included in this report. Some tables on selected malformations also give incomplete data on fetuses aborted after prenatal diagnosis of congenital malformations or chromosomal abnormalities.

1.2 Sources of data

Congenital malformations are notified on forms designed to obtain data on all births occurring in each State and Territory. Ascertainment of congenital malformations is improved by using additional sources of notification including children's hospitals and other referral hospitals, cytogenetics laboratories, perinatal death certificates, autopsy reports and notifications of induced abortions. Four States - New South Wales, Victoria, Western Australia and South Australia - have birth defects registers that include notifications of malformations diagnosed in infants and children after the perinatal period. The upper age limit of infants notified to the national monitoring system is 28 days.

Only South Australia and the Northern Territory have mandatory notification of induced abortions. Ascertainment of abortions performed because of fetal abnormality is variable in the other States and the Australian Capital Territory, except for chromosomal abnormalities which have been reported by cytogenetics laboratories since 1982.

Data for 1981 were incomplete in New South Wales and excluded births in Victoria, Western Australia, the Australian Capital Territory and the Northern Territory. Notifications of congenital malformations in the Northern Territory began in 1986.

1.3 Data items

Demographic, maternal and infant or fetal data are recorded on each notification to the AIHW National Perinatal Statistics Unit (NPSU). The data items are listed in Appendix 1. Some items are incomplete, either because they are not recorded on notification forms or because the information may not be readily available at the data source (eg children's hospitals, cytogenetics laboratories).

South Australia is the only State that routinely collects some information on the family history of birth defects or on maternal exposures to drugs and environmental agents. Such information is not coded in the national monitoring system but has been used to review reported associations between specific drugs (eg isotretinoin) and congenital malformations.

1.4 Data processing

Data on congenital malformations are coded in each State and Territory by the groups responsible for perinatal data collection and birth defects registers. Major congenital malformations and chromosomal abnormalities listed in the chapter on congenital anomalies in the Ninth Revision of the International Classification of Diseases (ICD) are notified to the NPSU. Both the NPSU and some States code malformations using the British Paediatric Association (BPA) Classification of Diseases which is a 5-digit system compatible with ICD at the 4-digit level. The BPA classification enables more specific coding of malformations and, with some modification of codes for malformations syndromes, limb reduction defects and other selected malformations, has been used by the NPSU since 1981. The list of minor malformations that are excluded from the national data are given in Appendix 2. If notification forms contain information on the side of the body affected by a malformation, this information is coded by the NPSU.

The State and Territory groups send copies of notifications in regular batches to the NPSU throughout the year. Since 1994, some States have provided data in an agreed format on floppy disk. Whenever possible, coding by State and Territory groups and the NPSU is based on written descriptions of congenital malformations. Further information is requested if diagnoses are doubtful or if key data items such as maternal age are missing. While this report gives widely accepted definitions of selected major congenital malformations, it is not always possible to ensure that notified diagnoses of malformations conform to these definitions.

1.5 Contents of report

Data in all tables, graphs and maps are based on the year of birth, or the year of induced abortion, and on the State or Territory in which birth or abortion occurred. Denominators for calculating rates are based on the State or Territory of registration, obtained from the Australian Bureau of Statistics. Malformation rates are expressed per 10,000 total births, including those malformations that are specific to one sex. As the criteria used by the States and Territories for their published reports may differ from those used here, numbers and rates may not be comparable with those in this report. Also, the criteria and sources of notifications vary among the States and Territories, so variations in malformation rates should be interpreted cautiously. Small numbers of specific types of malformations may also influence variations in rates.

Tables 1-7 are similar in content to annual tables published previously in some quarterly congenital malformations monitoring reports. Tables 1-4 give national data, and data for each

State and Territory, on the total number of infants and fetuses with major congenital malformations in the years 1981 to 1992. In Tables 5-7, State/Territory and national data are given on major malformations affecting all anatomical systems. National data are presented separately for 1981-1990, 1991, 1992 and the whole period; data on selected malformations in each State and Territory are given for the same years.

Tables 8-107 and the accompanying graphs and maps provide data on national trends, variations by State and Territory, and the descriptive epidemiology of 25 congenital malformations or chromosomal abnormalities that are either lethal, have significant consequences for surviving children and their families, or are relatively common.

As the level of ascertainment of induced abortions before 20 weeks' gestation is uncertain in most States and Territories, these abortions have been excluded from the reported rates of the 25 selected malformations. Induced abortions of fetuses less than 20 weeks' gestation or unstated gestational age are given under that heading in the tables. Induced abortions at gestational ages of 20 weeks and over are included in the figures for stillbirths but these had not necessarily been reported as perinatal deaths. The inclusion of stillbirths in these Australian data will affect comparisons with other countries where data on stillbirths are not available. Because many of the countries that do include stillbirths use 28 weeks' gestation as the lower limit for registration, the number of births occurring before 28 weeks (and less than 1,000g birthweight) are shown in the tables on selected major malformations so that there is some indication of the effect of different definitions on reported rates.

The data on the proportion of stillborn and liveborn infants with selected malformations who die before birth or in the neonatal period (within 28 days of birth) may not always be reliable for several reasons. If a malformed infant dies of some related complication such as an infection or cardiac failure, the congenital malformation may not always be recorded on the perinatal death certificate. On the other hand, if there is incomplete reporting of malformations on birth notifications, the proportion of stillbirths and neonatal deaths may be overestimated because ascertainment of malformations recorded on perinatal death certificates is complete in all States and Territories. Also, there may be relatively high proportions of stillbirths and neonatal deaths for some apparently mild malformations because infants with multiple malformations will be included in the tables for each malformation.

For each congenital malformation, the proportion occurring as an isolated malformation, in association with one or more other major malformations, or as part of a chromosomal syndrome is given. As ascertainment of major malformations has generally continued to improve in the States and Territories in recent years, comparative data by State and Territory of birth are presented for the three-year period of 1990 to 1992. For some less common malformations, these comparisons are affected by the relatively small number of births in some States and Territories. It is apparent from the examination of these malformation rates that even more striking variations are likely when areas with fewer births in shorter time periods are considered.

During the period from 1982 to 1992, the annual number of births increased from 238,684 in 1982 (excluding the Northern Territory) to 265,644 in 1992 with some fluctuations in the intervening years (Table 108).

1.6 International monitoring of congenital malformations

National, regional or hospital-based monitoring systems similar to the Australian national system operate in numerous other countries around the world. Through the International Clearinghouse for Birth Defects Monitoring Systems, and its International Centre for Birth Defects located in Rome, Australia participates in quarterly and annual reporting of congenital malformations and in studies of the epidemiology and causes of congenital malformations. The definitions of selected major congenital malformations in this report are generally those adopted by the International Clearinghouse for Birth Defects Monitoring Systems.

2 Major congenital malformations

There were 44,338 infants and fetuses with major congenital malformations notified in the years 1981 to 1992 among 2.85 million births, a total rate of 155.6 per 10,000 births, or 1.6 per cent (Table 1). The total malformation rate in 1992 was slightly less than in 1991. Overall, 76.9 per cent of infants had malformations affecting a single body system, 7.7 per cent had multiple malformations affecting more than one system, and 15.4 per cent had identifiable chromosomal or other syndromes.

Reported malformation rates were highest in South Australia (186.5 per 10,000 births), Queensland (172.4 per 10,000 births) and Victoria (164.5 per 10,000 births) and lowest in the Australian Capital Territory (117.2 per 10,000 births) and the Northern Territory (124.1 per 10,000 births) (Table 2).

The major source of notifications was the perinatal data collected on all births in each State and Territory (Table 3). Other important sources were children's hospitals to which malformed infants were transferred soon after birth, perinatal death certificates and sometimes autopsy reports, and reports of chromosomal abnormalities from cytogenetics laboratories. Notifications from children's hospitals in New South Wales were no longer specified in the data for 1992, accounting for the sharp decline in the proportion of notifications from that source.

The main anatomical systems in which major malformations occurred were the musculoskeletal and cardiovascular systems and genital organs (Table 4). The specific malformations contributing to these different systems are shown for Australia for births in 1981 to 1990, 1991 and 1992 (Table 5) and for each State and Territory (Tables 6, 7).

Comparison of total malformation rates by year and by State and Territory may be influenced both by the completeness of clinical detection and notification of major malformations and by the extent to which the various sources of notifications are used. The ascertainment of three relatively common malformations - congenital dislocation of the hip, ventricular septal defect, and hypospadias - may vary considerably, affecting total malformation rates. Congenital dislocation of the hip accounted for more than 60 per cent of musculoskeletal malformations, ventricular septal defect was the most frequently notified congenital heart defect, and 80 per cent of malformations of the genital organs were due to hypospadias.

More than one-third of the slight fall in total malformation rates for Australia between 1991 and 1992 was due to fewer notifications of congenital dislocation of the hip in 1992. In the period 1981 to 1992, ventricular septal defect was notified more than twice as commonly in the Northern Territory (21.0 per 10,000 births) as in Tasmania (9.4 per 10,000 births) and Western Australia (10.2 per 10,000 births). Hypospadias was much less frequently notified in the Northern Territory than in the other States and the Australian Capital Territory (Tables 6,7); the rates in South Australia (22.6 per 10,000 births) and Victoria (21.6 per 10,000 births) were about 50-60 per cent higher than in the Australian Capital Territory (13.8 per 10,000 births) and Tasmania (14.9 per 10,000 births). Even greater variations among the States and Territories occurred for congenital dislocation of the hip. These findings emphasise that variations in total malformation rates should be interpreted cautiously because differences in ascertainment may often be the most likely explanation.

Table 1: *Single and multiple congenital malformations, Australia, 1981–1992*

Type of malformation	1981–1990	1991	1992	Total	1981–1990	1991	1992	Total
	Number				Rate per 10,000 births			
Total	35,249	4,589	4,500	44,338	151.6	177.4	169.4	155.6
Single system	27,031	3,540	3,542	34,113	116.2	136.8	133.3	119.7
Multiple systems	2,857	290	263	3,410	12.3	11.2	9.9	12.0
– 2 systems	1,893	211	179	2,283	8.1	8.2	6.7	8.0
– 3+ systems	919	78	81	1,078	4.0	3.0	3.0	3.8
– unknown	45	1	3	49	0.2	0.0	0.1	0.2
Syndrome	5,361	759	695	6,815	23.1	29.3	26.2	23.9

Note: Data for 1981 exclude Vic, WA, ACT, NT and some hospitals in NSW; data for 1982–85 exclude NT.

Table 2: *Single and multiple congenital malformations by State or Territory of birth, 1981–1992*

Type of malformation	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Total	14,477	11,409	8,629	3,417	4,424	1,063	612	307	44,338
Single system	10,873	8,749	6,963	2,588	3,481	798	424	237	34,113
Multiple systems	1,311	839	496	267	336	86	50	25	3,410
– 2 systems	876	573	324	185	222	54	35	14	2,283
– 3+ systems	397	265	167	81	114	28	15	11	1,078
– unknown	38	1	5	1	–	4	–	–	49
Syndrome	2,293	1,821	1,170	562	607	179	138	45	6,815
					Rate per 10,000 births				
Total	145.8	164.5	172.4	129.1	186.5	126.4	117.2	124.1	155.6
Single system	109.5	126.2	139.1	97.8	146.7	94.9	81.2	95.8	119.7
Multiple systems	13.2	12.1	9.9	10.1	14.2	10.2	9.6	10.1	12.0
– 2 systems	8.8	8.3	6.5	7.0	9.4	6.4	6.7	5.7	8.0
– 3+ systems	4.0	3.8	3.3	3.1	4.8	3.3	2.9	4.4	3.8
– unknown	0.4	0.0	0.1	0.0	–	0.5	–	–	0.2
Syndrome	23.1	26.3	23.4	21.2	25.6	21.3	26.4	18.2	23.9

Note: Data for 1981 exclude Vic, WA, ACT, NT and some hospitals in NSW; data for 1982–85 exclude NT.

Table 3: *Source of notification of congenital malformations, Australia, 1981–1992*

Source	1981–1990	1991	1992	Total	1981–1990	1991	1992	Total
	Number				Per cent			
All sources	35,249	4,589	4,500	44,338	100.0	100.0	100.0	100.0
Birth notification	31,450	4,168	4,376	39,994	89.2	90.8	97.2	90.2
Referral hospital	3,840	498	1	4,339	10.9	10.9	0.0	9.8
Death certificate	5,824	391	229	6,444	16.5	8.5	5.1	14.5
Pathology report	2,296	210	186	2,692	6.5	4.6	4.1	6.1
Cytogenetics report	3,361	394	430	4,185	9.5	8.6	9.6	9.4

Note: Data for 1981 exclude Vic, WA, ACT, NT and some hospitals in NSW; data for 1982–85 exclude NT.

Table 4: *Congenital malformations by major anatomical system, Australia, 1981–1992*

Codes	Malformations	1981–1990	1991	1992	Total	1981–1990	1991	1992	Total
		Number				Rate per 10,000 births			
	Total	35,249	4,589	4,500	44,338	151.6	177.4	169.4	155.6
740–2	Nervous system	4,563	403	383	5,349	19.6	15.6	14.4	18.8
743	Eye	681	101	74	856	2.9	3.9	2.8	3.0
744	Ear, face & neck	237	43	33	313	1.0	1.7	1.2	1.1
745–6	Heart	6,423	806	894	8,123	27.6	31.2	33.7	28.5
747	Circulatory system	2,478	316	327	3,121	10.7	12.2	12.3	11.0
748	Respiratory system	672	75	75	822	2.9	2.9	2.8	2.9
749	Cleft palate/lip	3,440	367	387	4,194	14.8	14.2	14.6	14.7
750–1	Digestive system	2,631	324	326	3,281	11.3	12.5	12.3	11.5
752	Genital organs	5,466	724	701	6,891	23.5	28.0	26.4	24.2
753	Urinary system	2,766	471	430	3,667	11.9	18.2	16.2	12.9
755	Limbs	3,114	421	403	3,938	13.4	16.3	15.2	13.8
754,6	Other musculoskeletal	8,059	1,085	929	10,073	34.7	41.9	35.0	35.3
757	Integument	253	30	28	311	1.1	1.2	1.1	1.1
758	Chromosomal	4,325	583	545	5,453	18.6	22.5	20.5	19.1
759	Other & unspecified	909	111	105	1,125	3.9	4.3	4.0	3.9
760	Maternal conditions	48	4	1	53	0.2	0.2	0.0	0.2

Note: Data for 1981 exclude Vic, WA, ACT, NT and some hospitals in NSW; data for 1982–85 exclude NT.

Table 5: *Selected congenital malformations, Australia, 1981–1992*

Codes	Malformations	1981–1990	1991	1992	Total	1981–1990	1991	1992	Total
		Number				Rate per 10,000 births			
740	Anencephalus & similar anomalies	1,027	54	48	1,129	4.4	2.1	1.8	4.0
740.0	Anencephalus	878	46	40	964	3.8	1.8	1.5	3.4
740.1	Craniorachischisis	135	6	7	148	0.6	0.2	0.3	0.5
740.2	Iniencephaly	15	2	1	18	0.1	0.1	0.0	0.1
741	Spina bifida	1,566	145	125	1,836	6.7	5.6	4.7	6.4
742	Other nervous system	2,035	210	216	2,461	8.7	8.1	8.1	8.6
742.0	Encephalocele	303	23	25	351	1.3	0.9	0.9	1.2
742.1	Microcephalus	443	43	34	520	1.9	1.7	1.3	1.8
742.2	Brain reduction	436	61	55	552	1.9	2.4	2.1	1.9
742.3	Hydrocephalus	940	89	97	1,126	4.0	3.4	3.7	4.0
742.4–9	Other	163	19	27	209	0.7	0.7	1.0	0.7
743	Eye	681	101	74	856	2.9	3.9	2.8	3.0
743.0	Anophthalmos	67	10	5	82	0.3	0.4	0.2	0.3
743.1	Microphthalmos	219	26	19	264	0.9	1.0	0.7	0.9
743.2	Buphthalmos	52	7	5	64	0.2	0.3	0.2	0.2
743.3	Cataract & lens	196	38	26	260	0.8	1.5	1.0	0.9
743.32	Cataract	189	38	26	253	0.8	1.5	1.0	0.9
743.4–9	Other	243	32	34	309	1.0	1.2	1.3	1.1
744	Ear, face & neck	237	43	33	313	1.0	1.7	1.2	1.1
744.0	Ear–affecting hearing	197	26	17	240	0.8	1.0	0.6	0.8
744.00	Auditory canal a/s	175	19	12	206	0.8	0.7	0.5	0.7
744.01	Absent auricle	22	6	5	33	0.1	0.2	0.2	0.1
744.1–3	Other ear	14	6	15	35	0.1	0.2	0.6	0.1
744.4–9	Face & neck	33	12	3	48	0.1	0.5	0.1	0.2
745	Bulbus cordis & cardiac septal closure	5,108	636	713	6,457	22.0	24.6	26.8	22.7
745.0	Common truncus	186	4	13	203	0.8	0.2	0.5	0.7
745.1	Transpstn. grt. vessels	824	88	106	1,018	3.5	3.4	4.0	3.6
745.2	Tetralogy of Fallot	311	62	59	432	1.3	2.4	2.2	1.5
745.3	Common ventricle	159	19	9	187	0.7	0.7	0.3	0.7
745.4	Vent. septal defect	3,393	416	499	4,308	14.6	16.1	18.8	15.1
745.5	Ostium secundum ASD	960	127	132	1,219	4.1	4.9	5.0	4.3
745.6	Endocardial cushion	411	52	54	517	1.8	2.0	2.0	1.8
745.7–9	Other	29	4	3	36	0.1	0.2	0.1	0.1

Table 5: *Selected congenital malformations, Australia, 1981–1992 (cont.)*

Codes	Malformations	1981–1990	1991	1992	Total	1981–1990	1991	1992	Total
		Number				Rate per 10,000 births			
746	Other heart	2,260	284	312	2,856	9.7	11.0	11.7	10.0
746.0	Pulmonary valve	824	114	124	1,062	3.5	4.4	4.7	3.7
746.00	atresia	300	38	39	377	1.3	1.5	1.5	1.3
746.01	stenosis	436	67	70	573	1.9	2.6	2.6	2.0
746.1	Tricuspid a/s	299	39	45	383	1.3	1.5	1.7	1.3
746.2	Ebstein anomaly	63	12	15	90	0.3	0.5	0.6	0.3
746.3–4	Aortic valve stenosis, insufficiency	263	34	35	332	1.1	1.3	1.3	1.2
746.5–6	Mitral st./insuffic.	161	20	30	211	0.7	0.8	1.1	0.7
746.7	Hypoplastic L heart	544	72	55	671	2.3	2.8	2.1	2.4
746.8	Other specified	345	37	46	428	1.5	1.4	1.7	1.5
746.9	Unspecified	166	12	24	202	0.7	0.5	0.9	0.7
747	Circulatory	2,478	316	327	3,121	10.7	12.2	12.3	11.0
747.0	Pat.ductus arteriosus	1,517	215	196	1,928	6.5	8.3	7.4	6.8
747.1	Coarctation of aorta	697	62	80	839	3.0	2.4	3.0	2.9
747.2	Other aorta	278	28	30	336	1.2	1.1	1.1	1.2
747.3	Pulmonary artery	191	25	37	253	0.8	1.0	1.4	0.9
747.4	Great veins	251	33	31	315	1.1	1.3	1.2	1.1
747.42	Total anomalous pulm. venous return	154	14	18	186	0.7	0.5	0.7	0.7
747.6	Peripheral vascular	89	9	13	111	0.4	0.3	0.5	0.4
747.8	Other specified	27	3	3	33	0.1	0.1	0.1	0.1
747.9	Unspecified	1	–	1	2	0.0	–	0.0	0.0
748	Respiratory	672	75	75	822	2.9	2.9	2.8	2.9
748.0	Choanal atresia	226	31	30	287	1.0	1.2	1.1	1.0
748.1	Other nose	72	5	6	83	0.3	0.2	0.2	0.3
748.2–3	Larynx/trach./bronch.	142	17	9	168	0.6	0.7	0.3	0.6
748.4–6	Lung	245	23	30	298	1.1	0.9	1.1	1.0
748.8–9	Other respiratory	19	–	1	20	0.1	–	0.0	0.1
749	Cleft palate/lip	3,440	367	387	4,194	14.8	14.2	14.6	14.7
749.0	Cleft palate	1,291	153	161	1,605	5.6	5.9	6.1	5.6
749.1	Cleft lip	722	89	74	885	3.1	3.4	2.8	3.1
749.2	Cleft palate + lip	1,428	123	151	1,702	6.1	4.8	5.7	6.0
750	Upper alimentary tract	755	83	92	930	3.2	3.2	3.5	3.3
750.3	TOF oesophageal a/s	712	77	88	877	3.1	3.0	3.3	3.1
750.*	Other	47	7	4	58	0.2	0.3	0.2	0.2

Table 5: *Selected congenital malformations, Australia, 1981-1992 (cont.)*

Codes	Malformations	1981-1990	1991	1992	Total	1981-1990	1991	1992	Total
		Number				Rate per 10,000 births			
751	Other digestive	2,019	252	246	2,517	8.7	9.7	9.3	8.8
751.1	Small intestine a/s	490	60	60	610	2.1	2.3	2.3	2.1
751.10	Duodenum a/s	286	43	41	370	1.2	1.7	1.5	1.3
751.11	Jejunum a/s	100	12	6	118	0.4	0.5	0.2	0.4
751.12	Ileum a/s	77	6	7	90	0.3	0.2	0.3	0.3
751.19	Unspecified a/s	42	2	6	50	0.2	0.1	0.2	0.2
751.2	Large intestine, rectum,anal canal a/s	790	87	84	961	3.4	3.4	3.2	3.4
751.20	Large intestine a/s	58	7	10	75	0.2	0.3	0.4	0.3
751.21-2	Rectum a/s	94	5	3	102	0.4	0.2	0.1	0.4
751.23-4	Anus a/s	681	79	73	833	2.9	3.1	2.7	2.9
751.3	Hirschsprung dis.,etc.	262	43	27	332	1.1	1.7	1.0	1.2
751.4	Intestinal fixation	309	24	34	367	1.3	0.9	1.3	1.3
751.5-9	Other digestive	322	60	53	435	1.4	2.3	2.0	1.5
752	Genital organs	5,466	724	701	6,891	23.5	28.0	26.4	24.2
752.0-1	Ovaries/fallopian,etc.	83	6	3	92	0.4	0.2	0.1	0.3
752.2-3	Uterus	145	15	9	169	0.6	0.6	0.3	0.6
752.4	Cerv.,vagina,external	134	14	12	160	0.6	0.5	0.5	0.6
752.6	Hypospadias etc.	4,650	623	638	5,911	20.0	24.1	24.0	20.7
752.60,3-5	Hypospadias	4,319	593	600	5,512	18.6	22.9	22.6	19.3
752.61	Epispadias	62	6	6	74	0.3	0.2	0.2	0.3
752.62	Chordee	710	91	94	895	3.1	3.5	3.5	3.1
752.7	Indeterminate sex,etc.	354	41	30	425	1.5	1.6	1.1	1.5
752.74	Ambiguous genitalia	174	14	12	200	0.7	0.5	0.5	0.7
752.79	Indeterminate sex NOS	150	26	15	191	0.6	1.0	0.6	0.7
752.8	Other specified	298	50	27	375	1.3	1.9	1.0	1.3
752.9	Unspecified	20	1	-	21	0.1	0.0	-	0.1
753	Urinary	2,766	471	430	3,667	11.9	18.2	16.2	12.9
753.0	Renal agenesis/dysgen.	844	109	69	1,022	3.6	4.2	2.6	3.6
753.00	Bilateral	520	63	34	617	2.2	2.4	1.3	2.2
753.01	Unilateral	287	44	34	365	1.2	1.7	1.3	1.3
753.1	Cystic kidney disease	564	89	77	730	2.4	3.4	2.9	2.6
753.11-3	Polycystic	257	32	37	326	1.1	1.2	1.4	1.1
753.16	Multicystic	270	49	38	357	1.2	1.9	1.4	1.3
753.2	Obstructive defects renal pelvis/ureter	982	196	190	1,368	4.2	7.6	7.2	4.8
753.20	Hydronephrosis	622	133	129	884	2.7	5.1	4.9	3.1
753.21-9	Other	454	66	64	584	2.0	2.6	2.4	2.0
753.3	Other spec. kidney	319	55	65	439	1.4	2.1	2.4	1.5
753.32	Horseshoe kidney,etc.	179	24	30	233	0.8	0.9	1.1	0.8
753.4	Other spec. ureter	127	15	22	164	0.5	0.6	0.8	0.6

Table 5: *Selected congenital malformations, Australia, 1981–1992 (cont.)*

Codes	Malformations	1981–1990	1991	1992	Total	1981–1990	1991	1992	Total
		Number				Rate per 10,000 births			
753.5	Exstrophy of urinary bladder	88	5	7	100	0.4	0.2	0.3	0.4
753.6	Atresia/stenosis of urethra,bladder neck	190	25	26	241	0.8	1.0	1.0	0.8
753.7	Urachus	26	4	1	31	0.1	0.2	0.0	0.1
753.8	Other bladder/urethra	115	10	9	134	0.5	0.4	0.3	0.5
753.9	Unspecified	23	4	6	33	0.1	0.2	0.2	0.1
754	Certain musculoskelet.	5,079	659	582	6,320	21.8	25.5	21.9	22.2
754.30	Dislocation of hip	4,975	630	571	6,176	21.4	24.4	21.5	21.7
754.*	Other	109	31	12	152	0.5	1.2	0.5	0.5
755	Limb	3,114	421	403	3,938	13.4	16.3	15.2	13.8
755.0	Polydactyly	1,392	192	187	1,771	6.0	7.4	7.0	6.2
755.1	Syndactyly	567	72	65	704	2.4	2.8	2.4	2.5
755.2	Reduction,upper limb	781	104	93	978	3.4	4.0	3.5	3.4
755.3	Reduction,lower limb	374	37	49	460	1.6	1.4	1.8	1.6
755.4	Reduction,unspec limb	18	–	3	21	0.1	–	0.1	0.1
755.5	Other upper limb	218	41	30	289	0.9	1.6	1.1	1.0
755.6	Other lower limb	130	26	23	179	0.6	1.0	0.9	0.6
755.8	Other specified	167	17	18	202	0.7	0.7	0.7	0.7
755.80	Arthrogryposis multiplex congenita	132	13	14	159	0.6	0.5	0.5	0.6
755.9	Unspecified	6	2	–	8	0.0	0.1	–	0.0
756	Other musculoskeletal	3,079	439	362	3,880	13.2	17.0	13.6	13.6
756.0	Skull,face & bones	660	125	62	847	2.8	4.8	2.3	3.0
756.00	Craniosynostosis	317	72	22	411	1.4	2.8	0.8	1.4
756.03	Pierre Robin synd.	208	29	23	260	0.9	1.1	0.9	0.9
756.1	Spine	391	57	51	499	1.7	2.2	1.9	1.8
756.3	Ribs & sternum	170	19	18	207	0.7	0.7	0.7	0.7
756.4	Chondrodystrophy	248	28	27	303	1.1	1.1	1.0	1.1
756.43	Achondroplasia	128	12	11	151	0.6	0.5	0.4	0.5
756.44	Other dwarfing synd.	82	12	11	105	0.4	0.5	0.4	0.4
756.5	Osteodystrophies	136	13	26	175	0.6	0.5	1.0	0.6
756.50	Osteogenesis imperfecta	107	8	19	134	0.5	0.3	0.7	0.5
756.6	Diaphragm	751	103	89	943	3.2	4.0	3.4	3.3
756.61	Diaphragmatic hernia	655	98	82	835	2.8	3.8	3.1	2.9

Table 5: *Selected congenital malformations, Australia, 1981–1992 (cont.)*

Codes	Malformations	1981–1990	1991	1992	Total	1981–1990	1991	1992	Total
		Number				Rate per 10,000 births			
756.7	Abdominal wall	876	109	105	1,090	3.8	4.2	4.0	3.8
756.70	Exomphalos	532	56	48	636	2.3	2.2	1.8	2.2
756.71	Gastroschisis	241	37	46	324	1.0	1.4	1.7	1.1
756.8	Other specified	65	15	7	87	0.3	0.6	0.3	0.3
756.9	Unspecified	10	1	1	12	0.0	0.0	0.0	0.0
757	Integument	253	30	28	311	1.1	1.2	1.1	1.1
757.80	Cystic hygroma	165	20	24	209	0.7	0.8	0.9	0.7
758	Chromosomal	4,325	583	545	5,453	18.6	22.5	20.5	19.1
758.0	Trisomy 21 (Down)	2,767	335	318	3,420	11.9	12.9	12.0	12.0
758.1	Trisomy 13 (Patau)	210	32	22	264	0.9	1.2	0.8	0.9
758.2	Trisomy 18 (Edwards)	448	72	59	579	1.9	2.8	2.2	2.0
758.3	Autosomal deletion	155	30	24	209	0.7	1.2	0.9	0.7
758.5	Other autosomal	357	55	59	471	1.5	2.1	2.2	1.7
758.6	Turner syndrome	191	27	30	248	0.8	1.0	1.1	0.9
758.7	Klinefelter syndrome	58	11	14	83	0.2	0.4	0.5	0.3
758.8	Other sex chromosomes	131	20	24	175	0.6	0.8	0.9	0.6
758.9	Unspecified	20	3	2	25	0.1	0.1	0.1	0.1
759	Other & unspecified	909	111	105	1,125	3.9	4.3	4.0	3.9
759.0	Spleen	64	10	14	88	0.3	0.4	0.5	0.3
759.1	Adrenal gland	54	2	–	56	0.2	0.1	–	0.2
759.2	Other endocrine glands	93	6	10	109	0.4	0.2	0.4	0.4
759.3	Situs inversus	66	7	10	83	0.3	0.3	0.4	0.3
759.4	Conjoined twins	24	2	–	26	0.1	0.1	–	0.1
759.6	Hamartoses NEC	12	2	–	14	0.1	0.1	–	0.0
759.7	Multiple,so described	60	5	5	70	0.3	0.2	0.2	0.2
759.8	Other specified	577	83	71	731	2.5	3.2	2.7	2.6
759.9	Unspecified	10	1	1	12	0.0	0.0	0.0	0.0
760.2	Congenital rubella	18	1	–	19	0.1	0.0	–	0.1
760.70	Fetal hydantoin synd.	11	–	–	11	0.0	–	–	0.0
760.76	Fetal alcohol synd.	19	3	1	23	0.1	0.1	0.0	0.1

Note: Data for 1981 exclude Vic, WA, ACT, NT and some hospitals in NSW; data for 1982–85 exclude NT.

Table 6: *Selected congenital malformations, by State or Territory of birth, 1981–1992*

Codes	Malformations	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
						Number				
	Total									
	1991	1,447	1,381	883	311	368	98	65	36	4,589
	1992	1,363	1,393	860	318	378	91	48	49	4,500
	1981–92	14,477	11,409	8,629	3,417	4,424	1,063	612	307	44,338
740	Anencephalus									
	1991	13	11	15	9	3	–	3	–	54
	1992	14	8	12	8	–	2	–	4	48
	1981–92	349	266	273	130	51	37	8	15	1,129
741	Spina bifida									
	1991	47	35	28	23	7	2	1	2	145
	1992	48	33	22	11	4	2	2	3	125
	1981–92	611	482	313	189	147	58	22	14	1,836
742.0	Encephalocele									
	1991	7	5	4	4	2	–	1	–	23
	1992	7	14	1	1	1	–	–	1	25
	1981–92	111	97	65	26	30	11	7	4	351
742.1	Microcephalus									
	1991	18	11	6	4	3	–	–	1	43
	1992	13	9	5	4	–	1	1	1	34
	1981–92	189	116	95	41	51	19	6	3	520
742.3	Hydrocephalus									
	1991	36	25	13	4	2	3	6	–	89
	1992	33	29	18	8	6	1	2	–	97
	1981–92	435	282	172	82	86	27	34	8	1,126
745.1	Transposition of great vessels									
	1991	26	31	13	4	13	1	–	–	88
	1992	37	32	16	11	7	3	–	–	106
	1981–92	397	259	138	86	99	19	17	3	1,018
745.2	Tetralogy of Fallot									
	1991	24	19	5	4	7	–	3	–	62
	1992	17	21	11	6	3	–	–	1	59
	1981–92	162	111	83	27	33	6	8	2	432
745.4	Ventricular septal defect									
	1991	157	122	57	26	42	6	–	6	416
	1992	149	162	92	31	48	4	6	7	499
	1981–92	1,670	1,004	701	269	463	79	70	52	4,308

Table 6: *Selected congenital malformations, by State or Territory of birth, 1981–1992 (cont.)*

Codes	Malformations	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
						Number				
745.5	Ostium secundum atrial septal defect									
	1991	55	36	12	10	11	–	1	2	127
	1992	41	52	9	14	15	–	–	1	132
	1981–92	428	342	140	109	146	30	13	11	1,219
746.00	Pulmonary valve atresia									
	1991	13	12	4	3	5	1	–	–	38
	1992	13	8	5	3	8	2	–	–	39
	1981–92	127	92	45	43	52	7	10	1	377
746.01	Pulmonary valve stenosis									
	1991	18	22	7	7	9	2	–	2	67
	1992	14	33	11	5	3	2	–	2	70
	1981–92	238	149	60	43	56	15	5	7	573
746.7	Hypoplastic left heart									
	1991	23	16	13	8	7	2	–	3	72
	1992	9	21	10	5	7	1	–	2	55
	1981–92	225	185	99	65	55	24	6	12	671
747.0	Patent ductus arteriosus									
	1991	107	65	17	12	11	–	3	–	215
	1992	69	73	20	16	13	4	1	–	196
	1981–92	912	523	168	128	125	27	38	7	1,928
747.1	Coarctation of aorta									
	1991	20	22	7	6	7	–	–	–	62
	1992	25	34	12	6	2	1	–	–	80
	1981–92	304	275	107	57	67	8	18	3	839
748.0	Choanal atresia									
	1991	9	12	3	3	2	1	–	1	31
	1992	7	11	5	2	5	–	–	–	30
	1981–92	78	104	31	22	33	11	6	2	287
749.0	Cleft palate									
	1991	66	32	19	9	14	7	3	3	153
	1992	51	46	23	19	14	2	–	6	161
	1981–92	531	408	265	150	151	55	26	19	1,605

Table 6: *Selected congenital malformations, by State or Territory of birth, 1981–1992 (cont.)*

Codes	Malformations	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
						Number				
749.1	Cleft lip									
	1991	31	34	18	1	2	1	2	–	89
	1992	17	28	13	2	8	3	3	–	74
	1981–92	299	240	156	73	75	24	12	6	885
749.2	Cleft palate + lip									
	1991	38	28	25	12	8	5	4	3	123
	1992	49	36	34	8	12	9	1	2	151
	1981–92	558	413	308	175	146	58	28	16	1,702
750.3	TOF, oesophageal atresia/ stenosis									
	1991	23	17	17	7	10	3	–	–	77
	1992	30	29	12	4	10	2	1	–	88
	1981–92	285	232	150	64	101	29	11	5	877
751.1	Small intestine atresia/ stenosis									
	1991	19	17	8	6	8	–	1	1	60
	1992	16	21	11	6	5	–	1	–	60
	1981–92	215	155	98	58	60	13	8	3	610
751.2	Large intestine, rectum, anal canal atresia/stenosis									
	1991	28	26	12	8	12	–	–	1	87
	1992	24	30	10	11	8	–	–	1	84
	1981–92	334	243	150	86	107	20	11	10	961
751.3	Hirschsprung disease, etc									
	1991	19	16	4	2	1	1	–	–	43
	1992	4	14	2	5	1	–	1	–	27
	1981–92	129	112	29	22	27	8	4	1	332
752.60,3–5	Hypospadias									
	1991	191	178	105	50	44	18	7	–	593
	1992	190	209	79	54	49	10	8	1	600
	1981–92	1,798	1,496	971	504	536	125	72	10	5,512
752.7	Indeterminate sex, etc									
	1991	6	19	8	6	1	–	–	1	41
	1992	8	13	2	4	1	1	–	1	30
	1981–92	126	140	66	41	28	12	7	5	425
753.0	Renal agenesis/dysgenesis									
	1991	27	30	26	9	16	–	–	1	109
	1992	28	17	12	4	5	3	–	–	69
	1981–92	332	258	182	83	122	23	8	14	1,022

Table 6: *Selected congenital malformations, by State or Territory of birth, 1981–1992 (cont.)*

Codes	Malformations	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
						Number				
753.1	Cystic kidney disease									
	1991	29	23	15	6	12	1	–	3	89
	1992	15	22	12	9	11	3	1	4	77
	1981–92	221	213	120	58	83	17	8	10	730
753.2	Obstructive defects renal pelvis/ureter									
	1991	56	83	29	10	11	1	2	4	196
	1992	44	68	36	11	22	3	5	1	190
	1981–92	441	466	207	58	137	19	24	16	1,368
754.30	Dislocation of hip									
	1991	113	192	206	24	81	5	–	9	630
	1992	117	162	201	18	60	6	–	7	571
	1981–92	1,239	1,540	2,029	288	948	60	25	47	6,176
755.0	Polydactyly									
	1991	76	53	29	14	19	1	–	–	192
	1992	70	59	33	11	10	3	1	–	187
	1981–92	576	458	319	168	182	38	25	5	1,771
755.1	Syndactyly									
	1991	17	20	18	6	10	1	–	–	72
	1992	24	15	11	3	11	–	1	–	65
	1981–92	222	174	151	53	76	21	6	1	704
755.2–4	Limb reduction defects									
	1991	51	25	27	8	11	3	3	–	128
	1992	50	32	22	6	18	1	1	3	133
	1981–92	437	325	254	101	146	33	15	9	1,320
756.00	Craniosynostosis									
	1991	49	13	–	2	8	–	–	–	72
	1992	8	11	2	–	1	–	–	–	22
	1981–92	215	72	48	15	44	10	4	3	411
756.4	Chondrodystrophy									
	1991	12	4	5	2	3	–	2	–	28
	1992	10	4	3	4	2	1	2	1	27
	1981–92	113	63	50	33	32	6	5	1	303
756.5	Osteodystrophies									
	1991	2	7	3	–	–	1	–	–	13
	1992	7	10	4	2	1	1	1	–	26
	1981–92	47	58	28	13	16	10	3	–	175

Table 6: *Selected congenital malformations, by State or Territory of birth, 1981–1992 (cont.)*

Codes	Malformations	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
						Number				
756.61	Diaphragmatic hernia									
	1991	28	30	18	10	6	5	1	–	98
	1992	24	20	17	9	7	4	1	–	82
	1981–92	285	203	169	65	68	30	8	7	835
756.70	Exomphalos									
	1991	15	15	11	7	6	1	1	–	56
	1992	15	16	5	5	5	1	1	–	48
	1981–92	210	174	110	60	55	17	8	2	636
756.71	Gastroschisis									
	1991	13	5	8	8	1	2	–	–	37
	1992	12	14	10	6	3	1	–	–	46
	1981–92	120	66	57	40	29	9	3	–	324
758.0	Trisomy 21 (Down)									
	1991	105	105	63	21	17	12	11	1	335
	1992	105	86	57	31	23	10	2	4	318
	1981–92	1,166	918	602	273	267	101	74	19	3,420
758.1	Trisomy 13 (Patau)									
	1991	8	10	8	1	–	2	2	1	32
	1992	6	6	3	5	–	2	–	–	22
	1981–92	86	70	46	20	23	12	6	1	264
758.2	Trisomy 18 (Edwards)									
	1991	22	25	13	7	2	1	1	1	72
	1992	22	10	14	3	5	–	3	2	59
	1981–92	200	166	97	48	47	8	10	3	579
758.6	Turner syndrome									
	1991	9	11	3	3	1	–	–	–	27
	1992	11	9	4	2	2	1	1	–	30
	1981–92	89	69	38	17	24	7	3	1	248
758.3–5,	Other chromosomal									
758.7–9	1991	34	41	15	12	7	3	5	1	118
	1992	49	33	12	6	12	4	3	1	120
	1981–92	301	294	157	52	95	25	27	5	956

Note: Data for 1981 exclude Vic, WA, ACT, NT and some hospitals in NSW; data for 1982–85 exclude NT.

Table 7: *Selected congenital malformation rates, by State or Territory of birth, 1981–1992*

Codes	Malformations	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Rate per 10,000 births					
	Total									
	1991	165.3	209.0	200.1	122.0	185.5	142.1	126.4	99.4	177.4
	1992	146.9	209.8	186.4	126.3	193.6	130.2	98.5	130.0	169.4
	1981–92	145.8	164.5	172.4	129.1	186.5	126.4	117.2	124.1	155.6
740	Anencephalus									
	1991	1.5	1.7	3.4	3.5	1.5	–	5.8	–	2.1
	1992	1.5	1.2	2.6	3.2	–	2.9	–	10.6	1.8
	1981–92	3.5	3.8	5.5	4.9	2.1	4.4	1.5	6.1	4.0
741	Spina bifida									
	1991	5.4	5.3	6.3	9.0	3.5	2.9	1.9	5.5	5.6
	1992	5.2	5.0	4.8	4.4	2.0	2.9	4.1	8.0	4.7
	1981–92	6.2	7.0	6.3	7.1	6.2	6.9	4.2	5.7	6.4
742.0	Encephalocele									
	1991	0.8	0.8	0.9	1.6	1.0	–	1.9	–	0.9
	1992	0.8	2.1	0.2	0.4	0.5	–	–	2.7	0.9
	1981–92	1.1	1.4	1.3	1.0	1.3	1.3	1.3	1.6	1.2
742.1	Microcephalus									
	1991	2.1	1.7	1.4	1.6	1.5	–	–	2.8	1.7
	1992	1.4	1.4	1.1	1.6	–	1.4	2.1	2.7	1.3
	1981–92	1.9	1.7	1.9	1.5	2.1	2.3	1.1	1.2	1.8
742.3	Hydrocephalus									
	1991	4.1	3.8	2.9	1.6	1.0	4.4	11.7	–	3.4
	1992	3.6	4.4	3.9	3.2	3.1	1.4	4.1	–	3.7
	1981–92	4.4	4.1	3.4	3.1	3.6	3.2	6.5	3.2	4.0
745.1	Transposition of great vessels									
	1991	3.0	4.7	2.9	1.6	6.6	1.5	–	–	3.4
	1992	4.0	4.8	3.5	4.4	3.6	4.3	–	–	4.0
	1981–92	4.0	3.7	2.8	3.2	4.2	2.3	3.3	1.2	3.6
745.2	Tetralogy of Fallot									
	1991	2.7	2.9	1.1	1.6	3.5	–	5.8	–	2.4
	1992	1.8	3.2	2.4	2.4	1.5	–	–	2.7	2.2
	1981–92	1.6	1.6	1.7	1.0	1.4	0.7	1.5	0.8	1.5
745.4	Ventricular septal defect									
	1991	17.9	18.5	12.9	10.2	21.2	8.7	–	16.6	16.1
	1992	16.1	24.4	19.9	12.3	24.6	5.7	12.3	18.6	18.8
	1981–92	16.8	14.5	14.0	10.2	19.5	9.4	13.4	21.0	15.1

Table 7: *Selected congenital malformation rates, by State or Territory of birth, 1981–1992 (cont.)*

Codes	Malformations	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Rate per 10,000 births					
745.5	Ostium secundum atrial septal defect									
	1991	6.3	5.4	2.7	3.9	5.5	–	1.9	5.5	4.9
	1992	4.4	7.8	2.0	5.6	7.7	–	–	2.7	5.0
	1981–92	4.3	4.9	2.8	4.1	6.2	3.6	2.5	4.4	4.3
746.00	Pulmonary valve atresia									
	1991	1.5	1.8	0.9	1.2	2.5	1.5	–	–	1.5
	1992	1.4	1.2	1.1	1.2	4.1	2.9	–	–	1.5
	1981–92	1.3	1.3	0.9	1.6	2.2	0.8	1.9	0.4	1.3
746.01	Pulmonary valve stenosis									
	1991	2.1	3.3	1.6	2.7	4.5	2.9	–	5.5	2.6
	1992	1.5	5.0	2.4	2.0	1.5	2.9	–	5.3	2.6
	1981–92	2.4	2.1	1.2	1.6	2.4	1.8	1.0	2.8	2.0
746.7	Hypoplastic left heart									
	1991	2.6	2.4	2.9	3.1	3.5	2.9	–	8.3	2.8
	1992	1.0	3.2	2.2	2.0	3.6	1.4	–	5.3	2.1
	1981–92	2.3	2.7	2.0	2.5	2.3	2.9	1.1	4.9	2.4
747.0	Patent ductus arteriosus									
	1991	12.2	9.8	3.9	4.7	5.5	–	5.8	–	8.3
	1992	7.4	11.0	4.3	6.4	6.7	5.7	2.1	–	7.4
	1981–92	9.2	7.5	3.4	4.8	5.3	3.2	7.3	2.8	6.8
747.1	Coarctation of aorta									
	1991	2.3	3.3	1.6	2.4	3.5	–	–	–	2.4
	1992	2.7	5.1	2.6	2.4	1.0	1.4	–	–	3.0
	1981–92	3.1	4.0	2.1	2.2	2.8	1.0	3.4	1.2	2.9
748.0	Choanal atresia									
	1991	1.0	1.8	0.7	1.2	1.0	1.5	–	2.8	1.2
	1992	0.8	1.7	1.1	0.8	2.6	–	–	–	1.1
	1981–92	0.8	1.5	0.6	0.8	1.4	1.3	1.1	0.8	1.0
749.0	Cleft palate									
	1991	7.5	4.8	4.3	3.5	7.1	10.2	5.8	8.3	5.9
	1992	5.5	6.9	5.0	7.5	7.2	2.9	–	15.9	6.1
	1981–92	5.3	5.9	5.3	5.7	6.4	6.5	5.0	7.7	5.6

Table 7: *Selected congenital malformation rates, by State or Territory of birth, 1981–1992 (cont.)*

Codes	Malformations	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Rate per 10,000 births					
749.1	Cleft lip									
	1991	3.5	5.1	4.1	0.4	1.0	1.5	3.9	–	3.4
	1992	1.8	4.2	2.8	0.8	4.1	4.3	6.2	–	2.8
	1981–92	3.0	3.5	3.1	2.8	3.2	2.9	2.3	2.4	3.1
749.2	Cleft palate + lip									
	1991	4.3	4.2	5.7	4.7	4.0	7.3	7.8	8.3	4.8
	1992	5.3	5.4	7.4	3.2	6.1	12.9	2.1	5.3	5.7
	1981–92	5.6	6.0	6.2	6.6	6.2	6.9	5.4	6.5	6.0
750.3	TOF, oesophageal atresia/ stenosis									
	1991	2.6	2.6	3.9	2.7	5.0	4.4	–	–	3.0
	1992	3.2	4.4	2.6	1.6	5.1	2.9	2.1	–	3.3
	1981–92	2.9	3.3	3.0	2.4	4.3	3.4	2.1	2.0	3.1
751.1	Small intestine atresia/ stenosis									
	1991	2.2	2.6	1.8	2.4	4.0	–	1.9	2.8	2.3
	1992	1.7	3.2	2.4	2.4	2.6	–	2.1	–	2.3
	1981–92	2.2	2.2	2.0	2.2	2.5	1.5	1.5	1.2	2.1
751.2	Large intestine, rectum, anal canal atresia/stenosis									
	1991	3.2	3.9	2.7	3.1	6.1	–	–	2.8	3.4
	1992	2.6	4.5	2.2	4.4	4.1	–	–	2.7	3.2
	1981–92	3.4	3.5	3.0	3.2	4.5	2.4	2.1	4.0	3.4
751.3	Hirschsprung disease, etc									
	1991	2.2	2.4	0.9	0.8	0.5	1.5	–	–	1.7
	1992	0.4	2.1	0.4	2.0	0.5	–	2.1	–	1.0
	1981–92	1.3	1.6	0.6	0.8	1.1	1.0	0.8	0.4	1.2
752.60,3–5	Hypospadias									
	1991	21.8	26.9	23.8	19.6	22.2	26.1	13.6	–	22.9
	1992	20.5	31.5	17.1	21.5	25.1	14.3	16.4	2.7	22.6
	1981–92	18.1	21.6	19.4	19.0	22.6	14.9	13.8	4.0	19.3
752.7	Indeterminate sex, etc									
	1991	0.7	2.9	1.8	2.4	0.5	–	–	2.8	1.6
	1992	0.9	2.0	0.4	1.6	0.5	1.4	–	2.7	1.1
	1981–92	1.3	2.0	1.3	1.5	1.2	1.4	1.3	2.0	1.5
753.0	Renal agenesis/dysgenesis									
	1991	3.1	4.5	5.9	3.5	8.1	–	–	2.8	4.2
	1992	3.0	2.6	2.6	1.6	2.6	4.3	–	–	2.6
	1981–92	3.3	3.7	3.6	3.1	5.1	2.7	1.5	5.7	3.6

Table 7: *Selected congenital malformation rates, by State or Territory of birth, 1981–1992 (cont.)*

Codes	Malformations	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Rate per 10,000 births					
753.1	Cystic kidney disease									
	1991	3.3	3.5	3.4	2.4	6.1	1.5	–	8.3	3.4
	1992	1.6	3.3	2.6	3.6	5.6	4.3	2.1	10.6	2.9
	1981–92	2.2	3.1	2.4	2.2	3.5	2.0	1.5	4.0	2.6
753.2	Obstructive defects renal pelvis/ureter									
	1991	6.4	12.6	6.6	3.9	5.5	1.5	3.9	11.0	7.6
	1992	4.7	10.2	7.8	4.4	11.3	4.3	10.3	2.7	7.2
	1981–92	4.4	6.7	4.1	2.2	5.8	2.3	4.6	6.5	4.8
754.30	Dislocation of hip									
	1991	12.9	29.1	46.7	9.4	40.8	7.3	–	24.8	24.4
	1992	12.6	24.4	43.6	7.2	30.7	8.6	–	18.6	21.5
	1981–92	12.5	22.2	40.5	10.9	40.0	7.1	4.8	19.0	21.7
755.0	Polydactyly									
	1991	8.7	8.0	6.6	5.5	9.6	1.5	–	–	7.4
	1992	7.5	8.9	7.2	4.4	5.1	4.3	2.1	–	7.0
	1981–92	5.8	6.6	6.4	6.3	7.7	4.5	4.8	2.0	6.2
755.1	Syndactyly									
	1991	1.9	3.0	4.1	2.4	5.0	1.5	–	–	2.8
	1992	2.6	2.3	2.4	1.2	5.6	–	2.1	–	2.4
	1981–92	2.2	2.5	3.0	2.0	3.2	2.5	1.1	0.4	2.5
755.2–4	Limb reduction defects									
	1991	5.8	3.8	6.1	3.1	5.5	4.4	5.8	–	4.9
	1992	5.4	4.8	4.8	2.4	9.2	1.4	2.1	8.0	5.0
	1981–92	4.4	4.7	5.1	3.8	6.2	3.9	2.9	3.6	4.6
756.00	Craniosynostosis									
	1991	5.6	2.0	–	0.8	4.0	–	–	–	2.8
	1992	0.9	1.7	0.4	–	0.5	–	–	–	0.8
	1981–92	2.2	1.0	1.0	0.6	1.9	1.2	0.8	1.2	1.4
756.4	Chondrodystrophy									
	1991	1.4	0.6	1.1	0.8	1.5	–	3.9	–	1.1
	1992	1.1	0.6	0.7	1.6	1.0	1.4	4.1	2.7	1.0
	1981–92	1.1	0.9	1.0	1.2	1.3	0.7	1.0	0.4	1.1
756.5	Osteodystrophies									
	1991	0.2	1.1	0.7	–	–	1.5	–	–	0.5
	1992	0.8	1.5	0.9	0.8	0.5	1.4	2.1	–	1.0
	1981–92	0.5	0.8	0.6	0.5	0.7	1.2	0.6	–	0.6

Table 7: *Selected congenital malformation rates, by State or Territory of birth, 1981–1992 (cont.)*

Codes	Malformations	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Rate per 10,000 births					
756.61	Diaphragmatic hernia									
	1991	3.2	4.5	4.1	3.9	3.0	7.3	1.9	–	3.8
	1992	2.6	3.0	3.7	3.6	3.6	5.7	2.1	–	3.1
	1981–92	2.9	2.9	3.4	2.5	2.9	3.6	1.5	2.8	2.9
756.70	Exomphalos									
	1991	1.7	2.3	2.5	2.7	3.0	1.5	1.9	–	2.2
	1992	1.6	2.4	1.1	2.0	2.6	1.4	2.1	–	1.8
	1981–92	2.1	2.5	2.2	2.3	2.3	2.0	1.5	0.8	2.2
756.71	Gastroschisis									
	1991	1.5	0.8	1.8	3.1	0.5	2.9	–	–	1.4
	1992	1.3	2.1	2.2	2.4	1.5	1.4	–	–	1.7
	1981–92	1.2	1.0	1.1	1.5	1.2	1.1	0.6	–	1.1
758.0	Trisomy 21 (Down)									
	1991	12.0	15.9	14.3	8.2	8.6	17.4	21.4	2.8	12.9
	1992	11.3	13.0	12.4	12.3	11.8	14.3	4.1	10.6	12.0
	1981–92	11.7	13.2	12.0	10.3	11.3	12.0	14.2	7.7	12.0
758.1	Trisomy 13 (Patau)									
	1991	0.9	1.5	1.8	0.4	–	2.9	3.9	2.8	1.2
	1992	0.6	0.9	0.7	2.0	–	2.9	–	–	0.8
	1981–92	0.9	1.0	0.9	0.8	1.0	1.4	1.1	0.4	0.9
758.2	Trisomy 18 (Edwards)									
	1991	2.5	3.8	2.9	2.7	1.0	1.5	1.9	2.8	2.8
	1992	2.4	1.5	3.0	1.2	2.6	–	6.2	5.3	2.2
	1981–92	2.0	2.4	1.9	1.8	2.0	1.0	1.9	1.2	2.0
758.6	Turner syndrome									
	1991	1.0	1.7	0.7	1.2	0.5	–	–	–	1.0
	1992	1.2	1.4	0.9	0.8	1.0	1.4	2.1	–	1.1
	1981–92	0.9	1.0	0.8	0.6	1.0	0.8	0.6	0.4	0.9
758.3–5,	Other chromosomal									
758.7–9	1991	3.9	6.2	3.4	4.7	3.5	4.4	9.7	2.8	4.6
	1992	5.3	5.0	2.6	2.4	6.1	5.7	6.2	2.7	4.5
	1981–92	3.0	4.2	3.1	2.0	4.0	3.0	5.2	2.0	3.4

Note: Data for 1981 exclude Vic, WA, ACT, NT and some hospitals in NSW; data for 1982–85 exclude NT.

2.1 Anencephalus

- Anencephalus is a congenital malformation characterised by total or partial absence of the cranial vault, the covering skin and the brain.

- The International Classification of Diseases codes for anencephalus are 740.0-740.2.

- The national rate of anencephalus in births declined markedly from 5.9 per 10,000 births in 1982 to 1.8 per 10,000 births in 1992 (Table 8, Figure 1). During the same period, the number of induced abortions performed before 20 weeks' gestation for anencephalus increased, but notification of these abortions was incomplete.

- 67.8 per cent of 1,039 anencephalic infants with known outcome were stillborn; neonatal deaths were reported in all but 5 of the liveborn infants. As anencephalus is always a lethal malformation, occasional failure to report the death of a liveborn infant is the most likely explanation for these 5 instances.

- Associated major malformations were reported in 14.2 per cent of the births with anencephalus and one infant had a chromosomal abnormality.

- In the period 1990 to 1992, the reported rates of anencephalus were lower in South Australia (1.0 per 10,000 births) than in the other States and Territories (Table 9, Figure 2), probably attributable to a statewide screening program for anencephalus and other neural tube defects in South Australia.

- Younger mothers were more likely than older mothers to give birth to infants with anencephalus. The maternal age-specific rate ranged from 4.8 per 10,000 births for teenage mothers to 1.6 per 10,000 births for mothers aged 40 years and over (Table 10). More frequent prenatal screening of older pregnant women and subsequent induced abortion of malformed fetuses probably contribute to these variations.

- Compared with its occurrence in singleton births, anencephalus was more than twice as likely in twins and more than 5 times higher in other multiple births (Table 10).

- The sex ratio of anencephalus was 60.5 male births per 100 female births (Table 10).

- Among infants of known birthweight with anencephalus, 89.1 per cent were low birthweight (less than 2500g) and 45.5 per cent were extremely low birthweight (less than 1000g) (Table 11).

- Preterm birth (less than 37 weeks) occurred in 78.7 per cent of infants of stated gestational age with anencephalus; 31.1 per cent were born before 28 weeks (Table 11).

Table 8: *Anencephalus by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	39	43	37	47	36	29	26	28	25	15	10	335
Stillbirths	101	96	64	77	69	63	61	50	48	37	38	704
Total births*	140	139	101	124	107	94	90	83	74	54	48	1,054
Induced abortions	0	0	1	3	29	26	29	39	51	52	62	292
Neonatal deaths	38	43	36	47	36	29	25	28	25	15	8	330
						Rate per 10,000 births						
Total births	5.9	5.8	4.3	5.1	4.4	3.8	3.6	3.3	2.8	2.1	1.8	3.9
						Number						
Isolated	116	124	80	110	89	85	73	71	69	45	41	903
Associated	24	15	21	13	18	9	17	12	5	9	7	150
Chromosomal	0	0	0	1	0	0	0	0	0	0	0	1
						Rate per 10,000 births						
Isolated	4.9	5.1	3.4	4.6	3.6	3.5	2.9	2.8	2.6	1.7	1.5	3.3
Associated	1.0	0.6	0.9	0.5	0.7	0.4	0.7	0.5	0.2	0.3	0.3	0.5
Chromosomal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

** Total includes 'not stated'*

Table 9: *Anencephalus, States and Territories, Australia, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	12	12	16	5	1	2	1	1	50
Stillbirths	31	19	35	24	3	4	2	5	123
Total births*	43	31	51	29	6	7	3	6	176
Induced abortions	21	65	0	26	46	5	2	0	165
					Rate per 10,000 births				
Total births	1.6	1.6	3.7	3.8	1.0	3.3	2.2	5.5	2.3
					Number				
Isolated	38	22	47	27	6	7	3	5	155
Associated	5	9	4	2	0	0	0	1	21
Chromosomal	0	0	0	0	0	0	0	0	0
					Rate per 10,000 births				
Isolated	1.4	1.1	3.5	3.5	1.0	3.3	2.2	4.5	2.0
Associated	0.2	0.5	0.3	0.3	0.0	0.0	0.0	0.9	0.3
Chromosomal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

** Total includes 'not stated'*

Figure 1: Anencephalus, Australia, 1982-1992

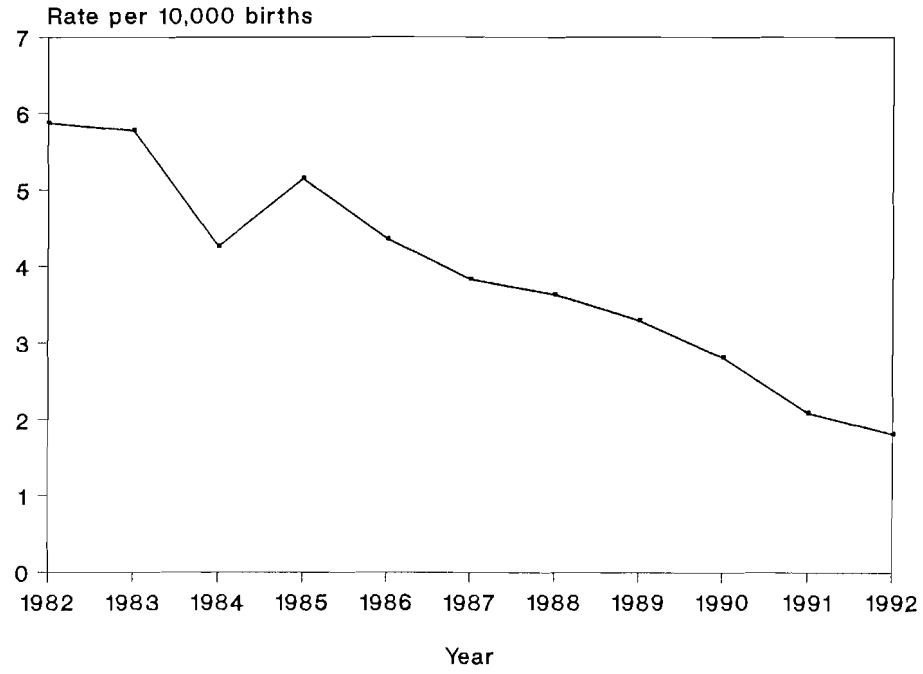

Figure 2: Anencephalus, States and Territories, 1990-1992

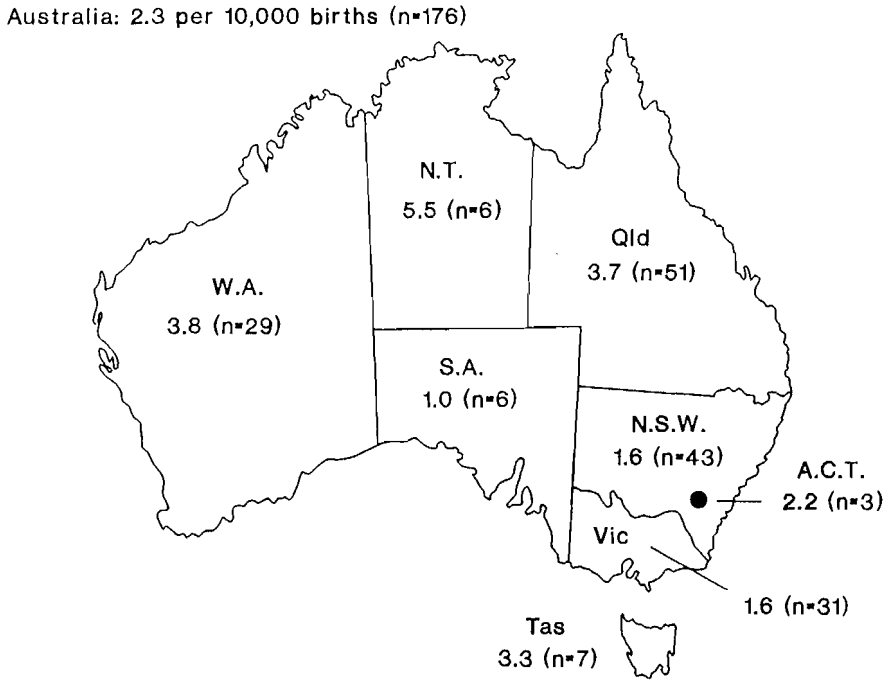

Table 10: *Anencephalus by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	78	163,050	4.8
20–24	271	640,160	4.2
25–29	413	1,029,355	4.0
30–34	212	665,613	3.2
35–39	64	207,031	3.1
40 and over	5	30,450	1.6
Not stated	11		
Plurality			
Singleton	973	2,675,229	3.6
Twin	61	62,315	9.8
Other multiple	5	2,438	20.5
Not stated	15		
Infant's sex			
Male	389	1,404,758	2.8
Female	643	1,331,788	4.8
Indeterminate	12		
Not stated	10		

Table 11: *Proportion of births with anencephalus by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	455	45.5
1000–2499	435	43.5
2500 and over	109	10.9
Not stated	55	
Gestational age (weeks)		
Less than 28	321	31.1
28–36	490	47.5
37 and over	220	21.3
Not stated	23	

2.2 Spina bifida

- Spina bifida is a congenital malformation characterised by herniation or exposure of the spinal cord and/or meninges through an incompletely closed spine. It is not counted as a separate malformation when present with anencephalus; this combination of malformations is often described as craniorachischisis.

- The International Classification of Diseases codes for spina bifida are 741.0-741.9.

- The national rate of spina bifida declined from 7.5 and 7.9 per 10,000 births in 1982 and 1983, respectively, to 4.7 per 10,000 births in 1992 (Table 12, Figure 3). As for anencephalus, induced abortions performed before 20 weeks' gestation for spina bifida increased in number during the same period. Again, notification of these abortions was incomplete.

- Among 1,755 infants with spina bifida and known outcome, 18.1 per cent were stillborn; 26.0 per cent of liveborn infants died in the neonatal period.

- Associated major malformations were reported in 15.5 per cent of infants with spina bifida and another 2.7 per cent had a chromosomal abnormality.

- For births in 1990-1992, the reported rates of spina bifida were highest in Western Australia and lowest in the Australian Capital Territory, South Australia and Tasmania (Table 13, Figure 4).

- Spina bifida was more likely among births to younger than to older mothers. Teenage mothers had the highest rate (8.3 per 10,000 births) and successive five-year age groups each had lower rates, except for a higher rate for births to mothers aged 40 years and over (Table 14). As for anencephalus, prenatal screening of older women may contribute to these variations by maternal age.

- Spina bifida was slightly more common in twins than in singleton births (Table 14). Other multiple births had a rate more than double that of singleton births, but there were only 4 infants with spina bifida in this group.

- The sex ratio of spina bifida was 89.1 male births per 100 female births (Table 14).

- Low birthweight (less than 2500g) occurred in 30.7 per cent of infants with spina bifida and known birthweight; 12.6 per cent were extremely low birthweight (Table 15).

- Preterm birth (less than 37 weeks) occurred in 31.0 per cent of infants with spina bifida and stated gestational age; 12.5 per cent were born before 28 weeks (Table 15).

Table 12: *Spina bifida by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	154	160	130	124	124	136	141	139	129	111	89	1,437
Stillbirths	24	30	21	30	33	39	28	28	25	30	30	318
Total births*	178	190	151	154	157	176	171	171	155	145	125	1,773
Induced abortions	–	–	1	2	12	13	21	26	29	25	45	174
Neonatal deaths	48	44	36	45	35	32	34	35	29	21	15	374
						Rate per 10,000 births						
Total births	7.5	7.9	6.4	6.4	6.4	7.2	6.9	6.8	5.9	5.6	4.7	6.5
						Number						
Isolated	146	156	124	120	131	151	145	136	122	118	102	1,451
Associated	31	31	24	28	22	20	22	26	28	23	20	275
Chromosomal	1	3	3	6	4	5	4	9	5	4	3	47
						Rate per 10,000 births						
Isolated	6.1	6.5	5.2	5.0	5.3	6.2	5.9	5.4	4.6	4.6	3.8	5.3
Associated	1.3	1.3	1.0	1.2	0.9	0.8	0.9	1.0	1.1	0.9	0.8	1.0
Chromosomal	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.4	0.2	0.2	0.1	0.2

** Total includes 'not stated'*

Table 13: *Spina bifida, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	114	69	72	47	14	5	1	7	329
Stillbirths	20	32	17	7	3	3	3	–	85
Total births*	135	104	90	54	22	8	5	7	425
Induced abortions	14	32	–	12	39	–	2	–	99
					Rate per 10,000 births				
Total births	5.0	5.2	6.6	7.1	3.7	3.8	3.6	6.4	5.5
					Number				
Isolated	102	81	85	44	14	5	5	6	342
Associated	29	20	3	8	8	3	–	–	71
Chromosomal	4	3	2	2	–	–	–	1	12
					Rate per 10,000 births				
Isolated	3.7	4.1	6.2	5.8	2.4	2.4	3.6	5.5	4.4
Associated	1.1	1.0	0.2	1.0	1.4	1.4	–	–	0.9
Chromosomal	0.1	0.2	0.1	0.3	–	–	–	0.9	0.2

** Total includes 'not stated'*

Figure 3: Spina bifida, Australia, 1982-1992

Figure 4: Spina bifida, States and Territories, 1990-1992

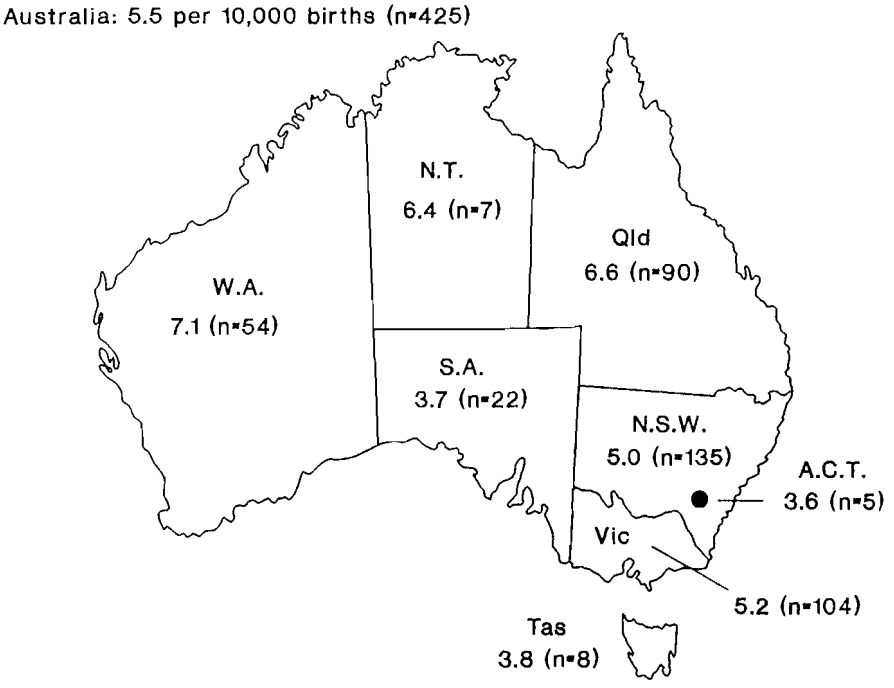

Table 14: *Spina bifida by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	135	163,050	8.3
20–24	440	640,160	6.9
25–29	667	1,029,355	6.5
30–34	380	665,613	5.7
35–39	99	207,031	4.8
40 and over	20	30,450	6.6
Not stated	32		
Plurality			
Singleton	1,636	2,675,229	6.1
Twin	52	62,315	8.3
Other multiple	4	2,438	16.4
Not stated	81		
Infant's sex			
Male	818	1,404,758	5.8
Female	918	1,331,788	6.9
Indeterminate	30		
Not stated	7		

Table 15: *Proportion of births with spina bifida by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	206	12.6
1000–2499	296	18.1
2500 and over	1,132	69.3
Not stated	139	
Gestational age (weeks)		
Less than 28	209	12.5
28–36	312	18.6
37 and over	1,157	69.0
Not stated	95	

2.3 Encephalocele

- Encephalocele is a congenital malformation characterised by herniation of the brain and/or meninges through a defect in the skull. It is not counted as a separate malformation when present with spina bifida. Anencephalus, spina bifida and encephalocele are collectively known as neural tube defects.

- The International Classification of Diseases code for encephalocele is 742.0.

- The national rate of encephalocele declined from 1.8 per 10,000 births in 1982 to 0.9 per 10,000 births in 1992 (Table 16, Figure 5). There was a small increase in the number of induced abortions performed for encephalocele during the same period.

- Among 329 infants with encephalocele and known outcome, 23.4 per cent were stillborn; 43.7 per cent of liveborn infants died in the neonatal period.

- Associated major malformations were reported in 33.9 per cent of infants with encephalocele and another 1.8 per cent had a chromosomal abnormality.

- For births in 1990-1992, the reported rates of encephalocele were higher in Victoria than in other States and Territories (Table 17, Figure 6).

- Encephalocele was more likely among births to younger mothers. The maternal age-specific rate ranged from 1.7 per 10,000 births for teenage mothers to 0.7 per 10,000 births for mothers aged 40 years and over (Table 18). As for the other neural tube defects (anencephalus and spina bifida), prenatal screening of older pregnant women and induced abortion of malformed fetuses may contribute to variations by maternal age.

- Encephalocele was more common in twins than in singleton births (Table 18).

- The sex ratio of encephalocele was 94.0 male births per 100 female births (Table 18).

- Low birthweight (less than 2500g) occurred in 50.7 per cent of infants with encephalocele and known birthweight; 17.5 per cent were extremely low birthweight (Table 19).

- Preterm birth (less than 37 weeks) occurred in 45.6 per cent of infants with encephalocele and stated gestational age; 17.2 per cent were born before 28 weeks (Table 19).

Table 16: *Encephalocele by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	31	26	31	21	35	18	21	17	18	15	19	252
Stillbirths	11	11	6	8	8	4	8	4	4	8	5	77
Total births*	42	38	37	29	43	23	30	21	22	23	25	333
Induced abortions	–	–	1	2	1	3	1	3	7	8	6	32
Neonatal deaths	18	12	11	9	18	9	10	8	6	4	5	110
						Rate per 10,000 births						
Total births	1.8	1.6	1.6	1.2	1.8	0.9	1.2	0.8	0.8	0.9	0.9	1.2
						Number						
Isolated	25	21	30	21	24	16	23	11	13	15	15	214
Associated	15	17	6	8	18	7	7	9	9	7	10	113
Chromosomal	2	–	1	–	1	–	–	1	–	1	–	6
						Rate per 10,000 births						
Isolated	1.0	0.9	1.3	0.9	1.0	0.7	0.9	0.4	0.5	0.6	0.6	0.8
Associated	0.6	0.7	0.3	0.3	0.7	0.3	0.3	0.4	0.3	0.3	0.4	0.4
Chromosomal	0.1	–	0.0	–	0.0	–	–	0.0	–	0.0	–	0.0

** Total includes 'not stated'*

Table 17: *Encephalocele, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	18	21	5	6	2	–	–	–	52
Stillbirths	6	5	2	2	–	–	1	1	17
Total births*	24	26	7	8	3	–	1	1	70
Induced abortions	4	5	–	4	8	–	–	–	21
					Rate per 10,000 births				
Total births	0.9	1.3	0.5	1.0	0.5	–	0.7	0.9	0.9
					Number				
Isolated	17	16	4	4	1	–	1	–	43
Associated	7	10	2	4	2	–	–	1	26
Chromosomal	–	–	1	–	–	–	–	–	1
					Rate per 10,000 births				
Isolated	0.6	0.8	0.3	0.5	0.2	–	0.7	–	0.6
Associated	0.3	0.5	0.1	0.5	0.3	–	–	0.9	0.3
Chromosomal	–	–	0.1	–	–	–	–	–	0.0

** Total includes 'not stated'*

Figure 5: Encephalocele, Australia, 1982-1992

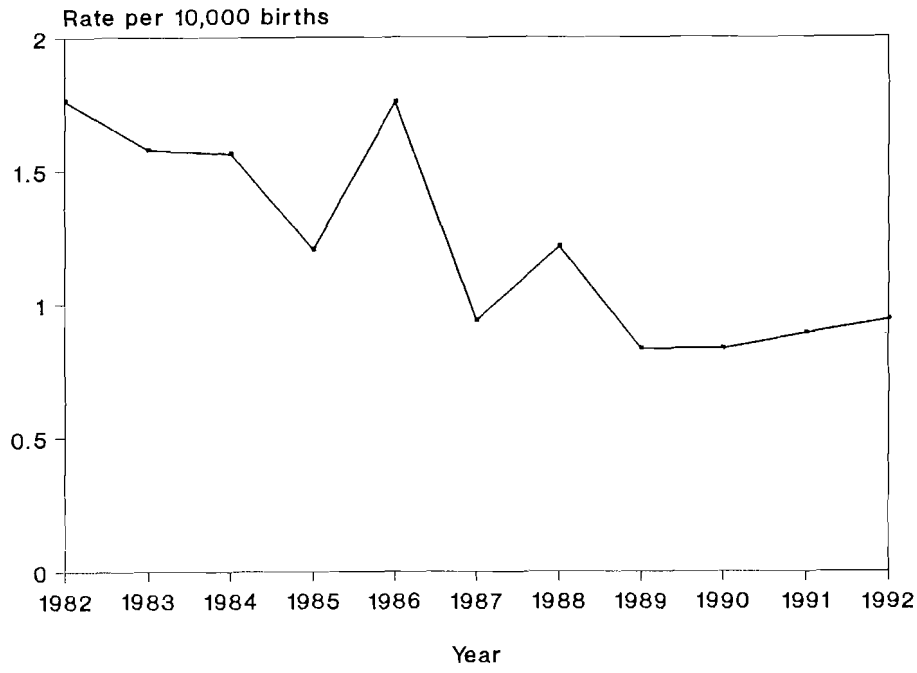

Figure 6: Encephalocele, States and Territories, 1990-1992

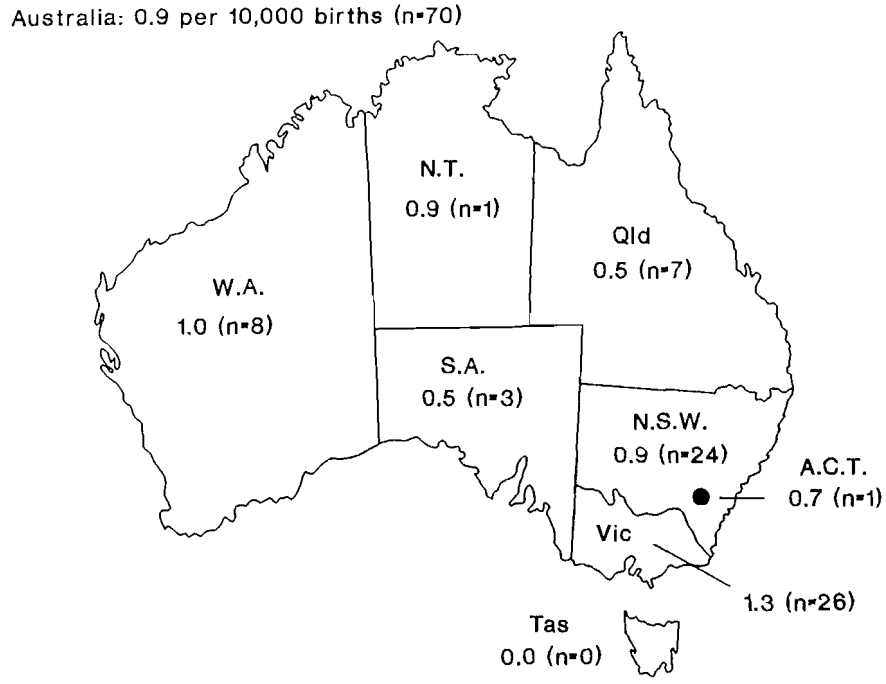

Table 18: *Encephalocele by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	27	163,050	1.7
20–24	82	640,160	1.3
25–29	116	1,029,355	1.1
30–34	81	665,613	1.2
35–39	23	207,031	1.1
40 and over	2	30,450	0.7
Not stated	2		
Plurality			
Singleton	297	2,675,229	1.1
Twin	11	62,315	1.8
Other multiple	–	2,438	–
Not stated	25		
Infant's sex			
Male	157	1,404,758	1.1
Female	167	1,331,788	1.3
Indeterminate	7		
Not stated	2		

Table 19: *Proportion of births with encephalocele by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	53	17.5
1000–2499	100	33.1
2500 and over	149	49.3
Not stated	31	
Gestational age (weeks)		
Less than 28	53	17.2
28–36	88	28.5
37 and over	168	54.4
Not stated	24	

2.4 Microcephalus

- Microcephalus is a congenital malformation characterised by a reduced brain size and head circumference. The head circumference is more than 3 standard deviations below the mean measurement of infants of the same gestational age.
- The International Classification of Diseases code for microcephalus is 743.1.
- The national rate of microcephalus showed a downward trend from 2.6 per 10,000 births in 1982 to 1.3 per 10,000 births in 1992 but the rate varied from year to year (Table 20, Figure 7).
- Among 496 infants with microcephalus and known outcome, 8.9 per cent were stillborn; 32.1 per cent of liveborn infants died in the neonatal period.
- Associated major malformations were reported in 35.9 per cent of infants with microcephalus and another 23.3 per cent had a chromosomal abnormality.
- For births in 1990-1992, the Northern Territory had the highest reported rate of microcephalus (2.7 per 10,000 births) (Table 21, Figure 8).
- The rate of microcephalus was higher for younger and older mothers than for those aged 25-29 years (Table 22).
- Microcephalus was slightly more common in twins than in singleton births (Table 22).
- The sex ratio of microcephalus was 70.5 male births per 100 female births (Table 22).
- Low birthweight (less than 2500g) occurred in 50.8 per cent of infants with microcephalus and known birthweight; 4.4 per cent were extremely low birthweight (Table 23).
- Preterm birth (less than 37 weeks) occurred in 31.1 per cent of infants with microcephalus and stated gestational age; 3.2 per cent were born before 28 weeks (Table 23).

Table 20: *Microcephalus by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	56	46	33	47	42	30	27	55	45	39	32	452
Stillbirths	5	7	4	5	4	3	5	2	3	4	2	44
Total births*	61	53	37	52	46	33	33	57	49	43	34	498
Induced abortions	–	–	–	1	–	–	–	1	–	2	–	4
Neonatal deaths	21	16	13	21	17	8	8	14	11	9	7	145
						Rate per 10,000 births						
Total births	2.6	2.2	1.6	2.2	1.9	1.3	1.3	2.3	1.9	1.7	1.3	1.8
						Number						
Isolated	16	20	13	22	16	13	14	27	27	16	19	203
Associated	33	19	19	15	17	9	10	18	10	18	11	179
Chromosomal	12	14	5	15	13	11	9	12	12	9	4	116
						Rate per 10,000 births						
Isolated	0.7	0.8	0.5	0.9	0.7	0.5	0.6	1.1	1.0	0.6	0.7	0.7
Associated	1.4	0.8	0.8	0.6	0.7	0.4	0.4	0.7	0.4	0.7	0.4	0.7
Chromosomal	0.5	0.6	0.2	0.6	0.5	0.4	0.4	0.5	0.5	0.3	0.2	0.4

** Total includes 'not stated'*

Table 21: *Microcephalus, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	48	34	16	8	3	2	2	3	116
Stillbirths	1	1	2	4	1	–	–	–	9
Total births*	50	35	18	12	4	2	2	3	126
Induced abortions	–	–	–	2	–	–	–	–	2
					Rate per 10,000 births				
Total births	1.8	1.8	1.3	1.6	0.7	1.0	1.5	2.7	1.6
					Number				
Isolated	22	24	6	3	2	2	2	1	62
Associated	19	6	3	8	1	–	–	2	39
Chromosomal	9	5	9	1	1	–	–	–	25
					Rate per 10,000 births				
Isolated	0.8	1.2	0.4	0.4	0.3	1.0	1.5	0.9	0.8
Associated	0.7	0.3	0.2	1.0	0.2	–	–	1.8	0.5
Chromosomal	0.3	0.3	0.7	0.1	0.2	–	–	–	0.3

** Total includes 'not stated'*

Figure 7: Microcephalus, Australia, 1982-1992

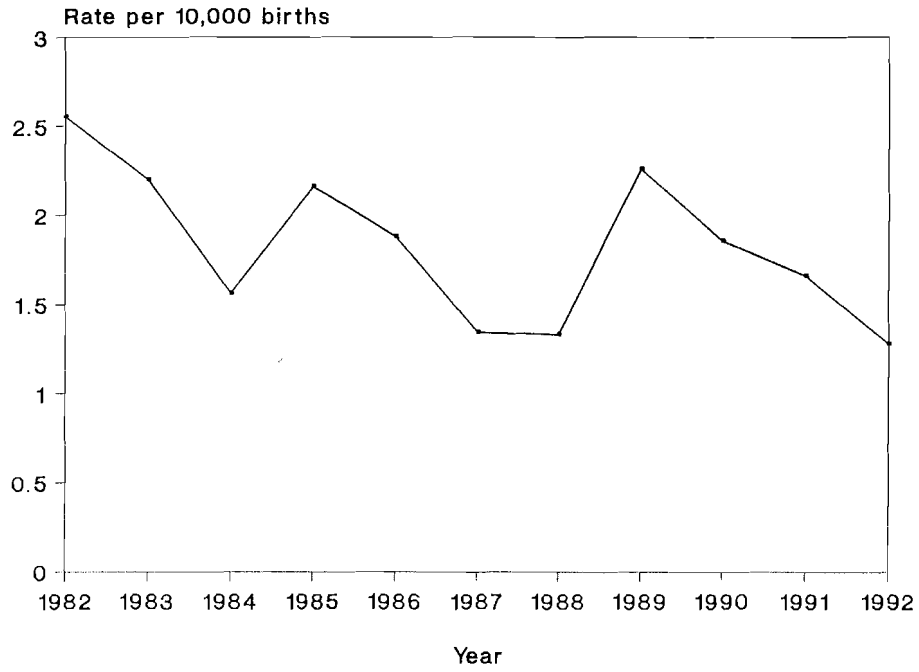

Figure 8: Microcephalus, States and Territories, 1990-1992

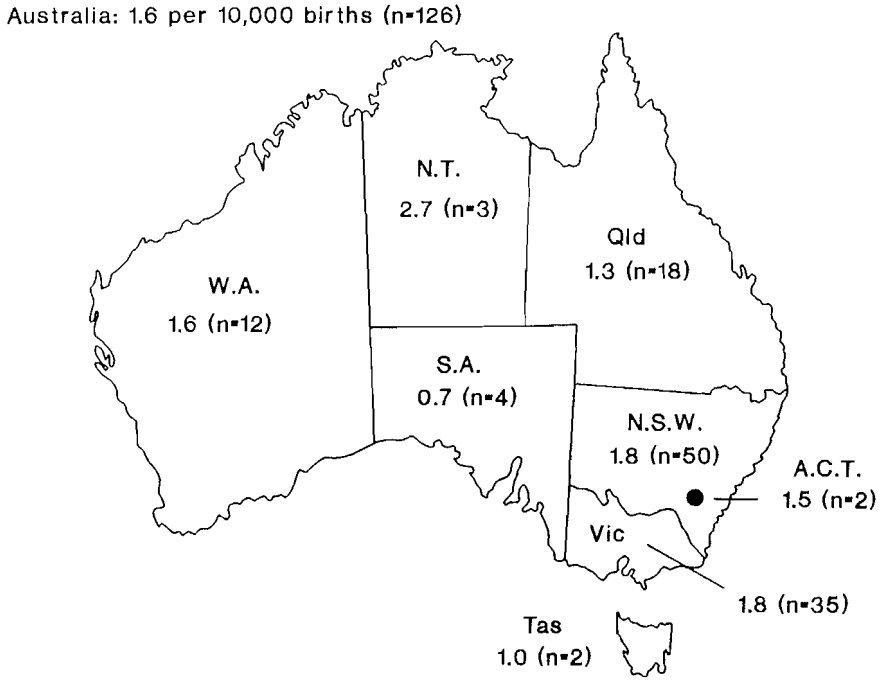

Table 22: *Microcephalus by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	34	163,050	2.1
20–24	108	640,160	1.7
25–29	156	1,029,355	1.5
30–34	123	665,613	1.8
35–39	46	207,031	2.2
40 and over	15	30,450	4.9
Not stated	16		
Plurality			
Singleton	453	2,675,229	1.7
Twin	18	62,315	2.9
Other multiple	–	2,438	–
Not stated	27		
Infant's sex			
Male	203	1,404,758	1.4
Female	288	1,331,788	2.2
Indeterminate	7		
Not stated	–		

Table 23: *Proportion of births with microcephalus by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	20	4.4
1000–2499	209	46.3
2500 and over	222	49.2
Not stated	47	
Gestational age (weeks)		
Less than 28	15	3.2
28–36	129	27.9
37 and over	319	68.9
Not stated	35	

2.5 Hydrocephalus

- Hydrocephalus is a congenital malformation characterised by dilatation of the ventricular system, not associated with primary brain atrophy, with or without enlargement of the head, and diagnosed before birth or during the first week of life. It is not counted as a separate malformation when present with encephalocele or open spina bifida.

- The International Classification of Diseases code for hydrocephalus is 742.3.

- There was no clear trend in the rate of hydrocephalus between 1982 and 1992 (Table 24, Figure 9). Relatively more induced abortions for hydrocephalus were reported for 1991 and 1992 than for earlier years.

- Among 1,068 infants with hydrocephalus and known outcome, 35.0 per cent were stillborn; 37.0 per cent of liveborn infants died in the neonatal period.

- Associated major malformations were reported in 31.7 per cent of infants with hydrocephalus and another 6.8 per cent had a chromosomal abnormality.

- For births in 1990-1992, the highest reported rate of hydrocephalus (8.0 per 10,000 births) was in the Australian Capital Territory (Table 25, Figure 10).

- Hydrocephalus was relatively more common at the lower and upper extremes of the reproductive age group (Table 26).

- Hydrocephalus was more common in twins and other multiple births than in singleton births (Table 26).

- The sex ratio of hydrocephalus was 127.8 male births per 100 female births (Table 26).

- Low birthweight (less than 2500g) occurred in 50.7 per cent of infants with hydrocephalus and known birthweight; 19.3 per cent were extremely low birthweight (Table 27).

- Preterm birth (less than 37 weeks) occurred in 55.4 per cent of infants with hydrocephalus and stated gestational age; 20.1 per cent were born before 28 weeks (Table 27).

Table 24: *Hydrocephalus by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	75	68	70	62	46	55	63	63	82	56	54	694
Stillbirths	35	32	33	40	25	34	33	30	40	32	40	374
Total births*	110	100	103	103	72	89	97	94	123	89	97	1,077
Induced abortions	–	–	1	–	8	6	7	8	8	16	17	71
Neonatal deaths	40	28	36	24	19	24	30	12	15	14	15	257
						Rate per 10,000 births						
Total births	4.6	4.1	4.3	4.3	2.9	3.6	3.9	3.7	4.7	3.4	3.7	3.9
						Number						
Isolated	58	63	63	62	42	63	56	58	88	55	55	663
Associated	43	31	37	33	23	22	32	32	26	31	31	341
Chromosomal	9	6	3	8	7	4	9	4	9	3	11	73
						Rate per 10,000 births						
Isolated	2.4	2.6	2.7	2.6	1.7	2.6	2.3	2.3	3.3	2.1	2.1	2.4
Associated	1.8	1.3	1.6	1.4	0.9	0.9	1.3	1.3	1.0	1.2	1.2	1.2
Chromosomal	0.4	0.2	0.1	0.3	0.3	0.2	0.4	0.2	0.3	0.1	0.4	0.3

** Total includes 'not stated'*

Table 25: *Hydrocephalus, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	93	40	29	13	6	4	4	3	192
Stillbirths	26	40	15	9	8	4	7	3	112
Total births*	120	81	45	22	16	8	11	6	309
Induced abortions	8	24	–	4	5	–	–	–	41
					Rate per 10,000 births				
Total births	4.4	4.1	3.3	2.9	2.7	3.8	8.0	5.5	4.0
					Number				
Isolated	78	52	27	12	10	7	7	5	198
Associated	38	21	11	10	6	–	2	–	88
Chromosomal	4	8	7	–	–	1	2	1	23
					Rate per 10,000 births				
Isolated	2.9	2.6	2.0	1.6	1.7	3.3	5.1	4.5	2.5
Associated	1.4	1.1	0.8	1.3	1.0	–	1.5	–	1.1
Chromosomal	0.1	0.4	0.5	–	–	0.5	1.5	0.9	0.3

** Total includes 'not stated'*

Figure 9: Hydrocephalus, Australia, 1982-1992

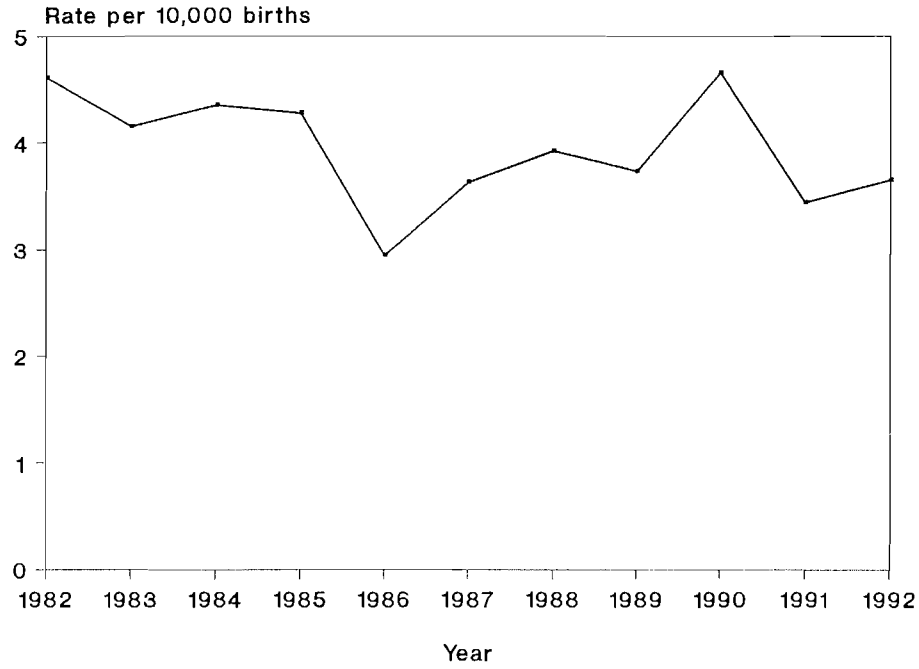

Figure 10: Hydrocephalus, States and Territories, 1990-1992

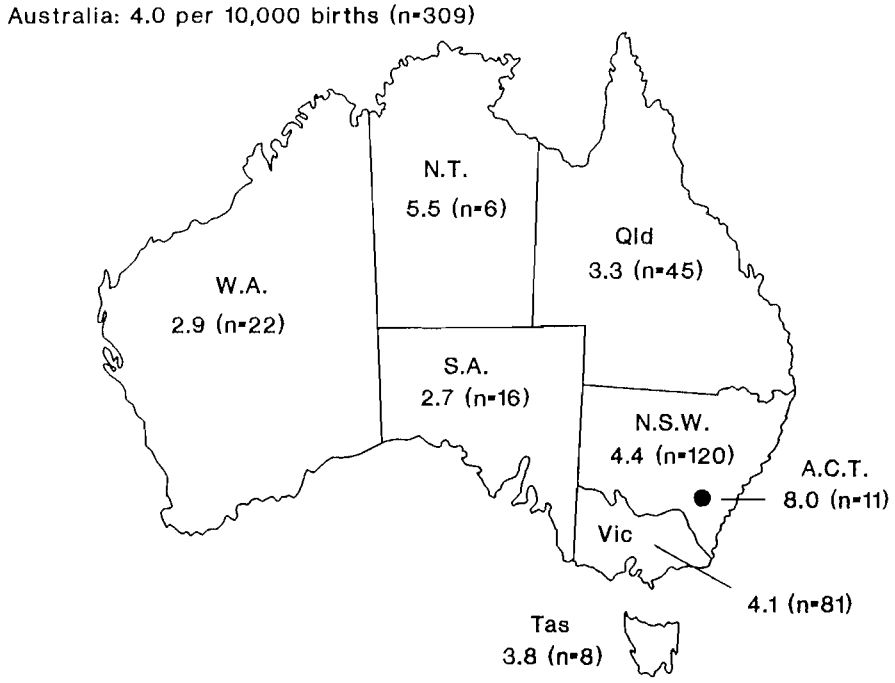

Table 26: *Hydrocephalus by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	97	163,050	5.9
20–24	252	640,160	3.9
25–29	331	1,029,355	3.2
30–34	243	665,613	3.7
35–39	86	207,031	4.2
40 and over	20	30,450	6.6
Not stated	48		
Plurality			
Singleton	985	2,675,229	3.7
Twin	55	62,315	8.8
Other multiple	2	2,438	8.2
Not stated	35		
Infant's sex			
Male	597	1,404,758	4.2
Female	467	1,331,788	3.5
Indeterminate	10		
Not stated	3		

Table 27: *Proportion of births with hydrocephalus by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	193	19.3
1000–2499	315	31.5
2500 and over	493	49.3
Not stated	76	
Gestational age (weeks)		
Less than 28	208	20.1
28–36	365	35.3
37 and over	462	44.6
Not stated	42	

2.6 Transposition of great vessels

- Transposition of the great vessels is a congenital heart defect usually characterised by the aorta arising from the right ventricle and the pulmonary artery from the left ventricle.
- The International Classification of Diseases code for transposition of the great vessels is 745.1.
- The national rate of transposition of the great vessels showed no clear trend and was 3.6 per 10,000 births for the period from 1982 to 1992 (Table 28, Figure 11).
- Among 988 infants with transposition of the great vessels and known outcome, 4.1 per cent were stillborn; 23.2 per cent of liveborn infants died in the neonatal period.
- Associated major malformations were reported in 30.5 per cent of infants with transposition of the great vessels and another 4.4 per cent had a chromosomal abnormality.
- For births in 1990-1992, the reported rates of transposition of the great vessels were highest in South Australia (5.1 per 10,000 births) and Victoria (4.4 per 10,000 births) (Table 29, Figure 12).
- Transposition of the great vessels showed little variation with maternal age, except for a higher rate for mothers aged 40 years and over (Table 30).
- Transposition of the great vessels was slightly more common in twins than in singleton births (Table 30).
- The sex ratio of transposition of the great vessels was 177.0 male births per 100 female births (Table 30).
- Low birthweight (less than 2500g) occurred in 17.5 per cent of infants with transposition of the great vessels and known birthweight; 2.7 per cent were extremely low birthweight (Table 31).
- Preterm birth (less than 37 weeks) occurred in 16.1 per cent of infants with transposition of the great vessels and stated gestational age; 2.2 per cent were born before 28 weeks (Table 31).

Table 28: *Transposition of great vessels by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	71	73	69	85	80	92	114	98	83	82	100	947
Stillbirths	3	3	3	6	1	3	1	3	6	6	6	41
Total births*	74	76	72	91	81	96	115	102	89	88	106	990
Induced abortions	–	–	–	–	–	–	2	–	–	1	1	4
Neonatal deaths	23	15	20	24	21	20	31	23	12	19	12	220
						Rate per 10,000 births						
Total births	3.1	3.2	3.0	3.8	3.3	3.9	4.6	4.0	3.4	3.4	4.0	3.6
						Number						
Isolated	43	48	47	57	53	67	73	65	58	49	84	644
Associated	29	27	22	28	23	25	37	34	25	33	19	302
Chromosomal	2	1	3	6	5	4	5	3	6	6	3	44
						Rate per 10,000 births						
Isolated	1.8	2.0	2.0	2.4	2.2	2.7	2.9	2.6	2.2	1.9	3.2	2.4
Associated	1.2	1.1	0.9	1.2	0.9	1.0	1.5	1.3	0.9	1.3	0.7	1.1
Chromosomal	0.1	0.0	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.2

** Total includes 'not stated'*

Table 29: *Transposition of great vessels, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	86	80	38	26	29	6	–	–	265
Stillbirths	4	7	3	1	1	2	–	–	18
Total births*	90	87	41	27	30	8	–	–	283
Induced abortions	1	1	–	–	–	–	–	–	2
					Rate per 10,000 births				
Total births	3.3	4.4	3.0	3.5	5.1	3.8	–	–	3.6
					Number				
Isolated	54	58	36	17	20	6	–	–	191
Associated	29	25	4	8	9	2	–	–	77
Chromosomal	7	4	1	2	1	–	–	–	15
					Rate per 10,000 births				
Isolated	2.0	2.9	2.6	2.2	3.4	2.9	–	–	2.5
Associated	1.1	1.3	0.3	1.0	1.5	1.0	–	–	1.0
Chromosomal	0.3	0.2	0.1	0.3	0.2	–	–	–	0.2

** Total includes 'not stated'*

Figure 11: Transposition of great vessels, Australia, 1982-1992

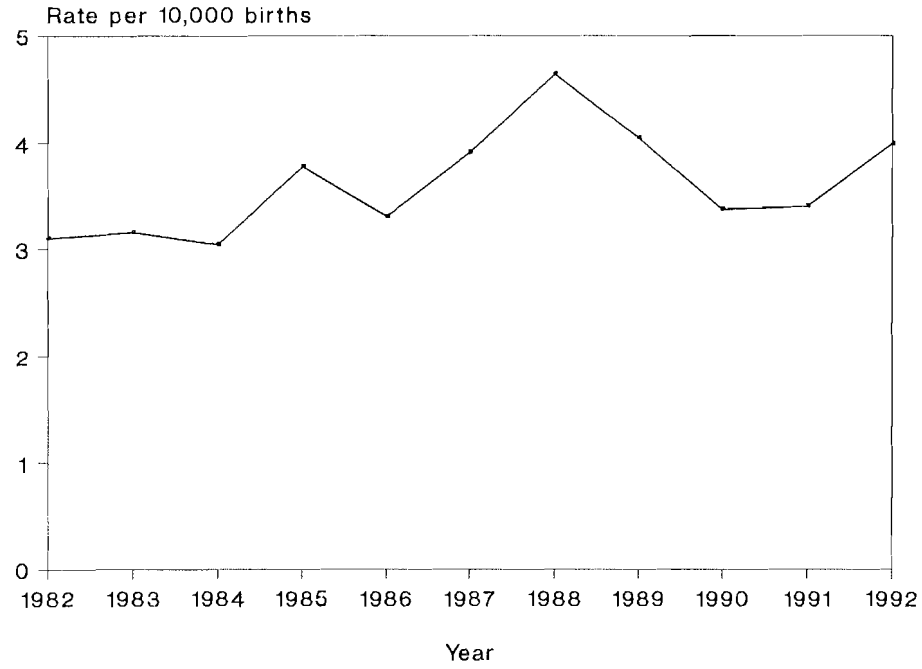

Figure 12: Transposition of great vessels, States and Territories, 1990-1992

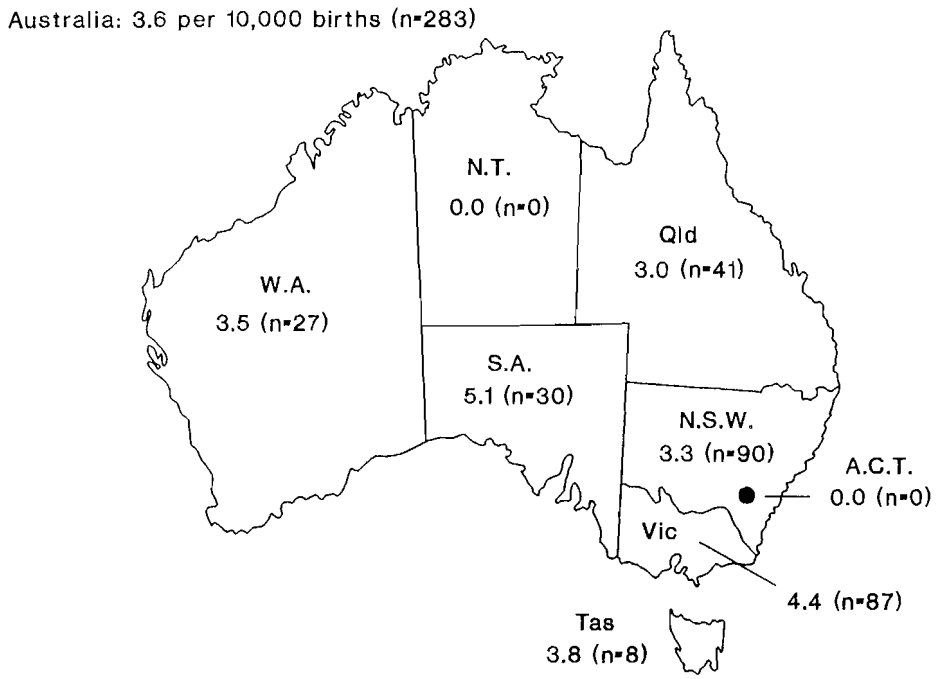

Table 30: *Transposition of great vessels by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	58	163,050	3.6
20–24	190	640,160	3.0
25–29	372	1,029,355	3.6
30–34	235	665,613	3.5
35–39	79	207,031	3.8
40 and over	18	30,450	5.9
Not stated	38		
Plurality			
Singleton	925	2,675,229	3.5
Twin	30	62,315	4.8
Other multiple	3	2,438	12.3
Not stated	32		
Infant's sex			
Male	630	1,404,758	4.5
Female	356	1,331,788	2.7
Indeterminate	3		
Not stated	1		

Table 31: *Proportion of births with transposition of great vessels by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	25	2.7
1000–2499	140	14.8
2500 and over	778	82.5
Not stated	47	
Gestational age (weeks)		
Less than 28	21	2.2
28–36	131	13.9
37 and over	791	83.9
Not stated	47	

2.7 Ventricular septal defect

- Ventricular septal defect is an abnormal communication between the ventricles of the heart, usually characterised by a heart murmur and sometimes by spontaneous closure in early childhood.
- The International Classification of Diseases code for ventricular septal defect is 745.4.
- The national rate of ventricular septal defect was higher in the early 1990s than in earlier years, reaching peak rates of 18.8 per 10,000 births in 1990 and 1992 (Table 32, Figure 13).
- Among 4,141 infants with ventricular septal defect and known outcome, 6.1 per cent were stillborn; 13.1 per cent of liveborn infants died in the neonatal period.
- Associated major malformations were reported in 34.5 per cent of infants with ventricular septal defect and another 11.6 per cent had a chromosomal abnormality.
- For births in 1990-1992, the highest reported rates were in the Northern Territory (25.5 per 10,000 births) and South Australia (22.7 per 10,000 births) (Table 33, Figure 14). In Tasmania (6.2 per 10,000 births) and the Australian Capital Territory (6.5 per 10,000 births), the reported rates were well below the national rate of 18.2 per 10,000 births, probably due to less complete ascertainment.
- Ventricular septal defect was more common among births to mothers in their 30s and especially for those aged 40 years and over than those in younger age groups (Table 34).
- Ventricular septal defect was more common in twins and in other multiple births than in singleton births (Table 34).
- The sex ratio of ventricular septal defect was 100.6 male births per 100 female births (Table 34).
- Low birthweight (less than 2500g) occurred in 26.3 per cent of infants with ventricular septal defect and known birthweight; 4.2 per cent were extremely low birthweight (Table 35).
- Preterm birth (less than 37 weeks) occurred in 21.4 per cent of infants with ventricular septal defect and stated gestational age; 3.2 per cent were born before 28 weeks (Table 35).

Table 32: *Ventricular septal defect by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	324	339	271	288	300	340	339	370	465	389	463	3,888
Stillbirths	19	17	26	23	14	23	23	24	26	24	34	253
Total births*	343	356	297	311	314	364	362	394	498	416	499	4,154
Induced abortions	–	–	–	1	1	2	5	7	6	9	7	38
Neonatal deaths	47	54	50	73	39	51	48	43	39	37	28	509
						Rate per 10,000 births						
Total births	14.4	14.8	12.5	12.9	12.8	14.8	14.6	15.6	18.8	16.1	18.8	15.2
						Number						
Isolated	214	207	170	144	172	185	167	200	263	228	290	2,240
Associated	99	114	101	121	106	138	150	137	166	140	161	1,433
Chromosomal	30	35	26	46	36	41	45	57	69	48	48	481
						Rate per 10,000 births						
Isolated	9.0	8.6	7.2	6.0	7.0	7.5	6.7	7.9	10.0	8.8	10.9	8.2
Associated	4.1	4.7	4.3	5.0	4.3	5.6	6.1	5.4	6.3	5.4	6.1	5.2
Chromosomal	1.3	1.5	1.1	1.9	1.5	1.7	1.8	2.3	2.6	1.9	1.8	1.8

** Total includes 'not stated'*

Table 33: *Ventricular septal defect, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	473	369	208	100	120	11	8	28	1,317
Stillbirths	20	31	11	7	12	2	1	–	84
Total births*	499	403	219	108	134	13	9	28	1,413
Induced abortions	–	15	–	–	6	1	–	–	22
					Rate per 10,000 births				
Total births	18.3	20.2	16.1	14.2	22.7	6.2	6.5	25.5	18.2
					Number				
Isolated	262	221	156	42	68	10	5	17	781
Associated	175	139	43	45	54	2	3	6	467
Chromosomal	62	43	20	21	12	1	1	5	165
					Rate per 10,000 births				
Isolated	9.6	11.1	11.5	5.5	11.5	4.8	3.6	15.5	10.0
Associated	6.4	7.0	3.2	5.9	9.1	1.0	2.2	5.5	6.0
Chromosomal	2.3	2.2	1.5	2.8	2.0	0.5	0.7	4.5	2.1

** Total includes 'not stated'*

Figure 13: Ventricular septal defect, Australia, 1982-1992

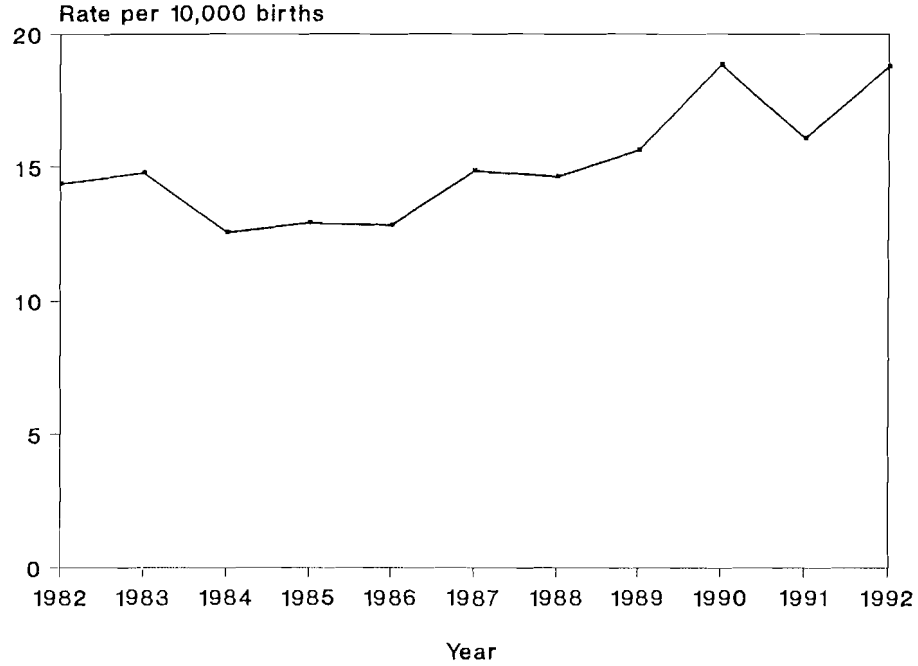

Figure 14: Ventricular septal defect, States and Territories, 1990-1992

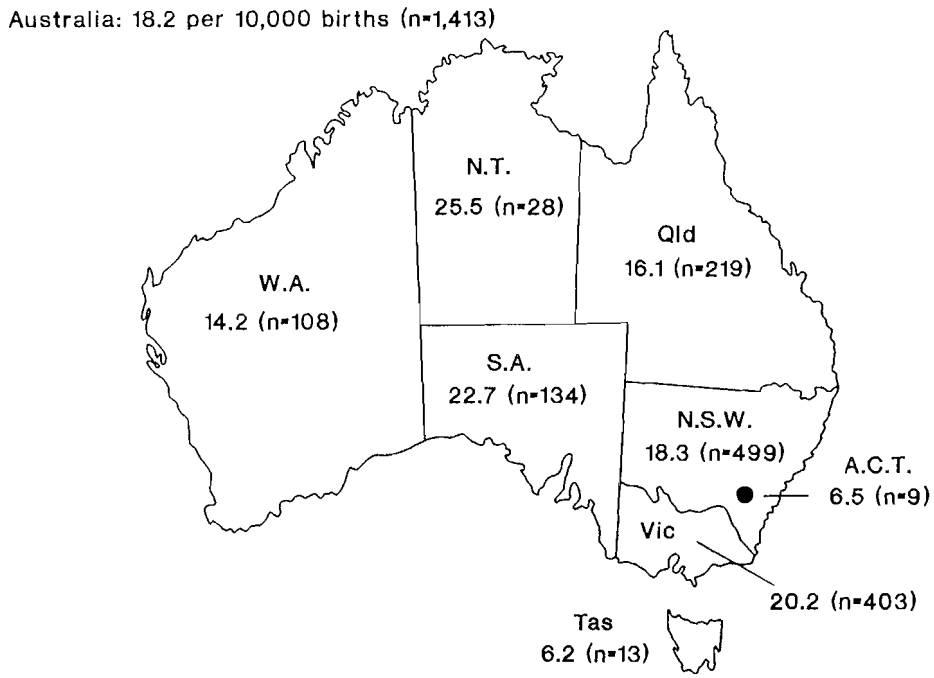

Table 34: *Ventricular septal defect by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	218	163,050	13.4
20–24	822	640,160	12.8
25–29	1,424	1,029,355	13.8
30–34	1,063	665,613	16.0
35–39	393	207,031	19.0
40 and over	85	30,450	27.9
Not stated	149		
Plurality			
Singleton	3,783	2,675,229	14.1
Twin	129	62,315	20.7
Other multiple	6	2,438	24.6
Not stated	236		
Infant's sex			
Male	2,076	1,404,758	14.8
Female	2,062	1,331,788	15.5
Indeterminate	12		
Not stated	4		

Table 35: *Proportion of births with ventricular septal defect by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	163	4.2
1000–2499	856	22.1
2500 and over	2,857	73.7
Not stated	278	
Gestational age (weeks)		
Less than 28	126	3.2
28–36	707	18.2
37 and over	3,059	78.6
Not stated	262	

2.8 Hypoplastic left heart

- Hypoplastic left heart is a congenital malformation resulting from an obstructive valvular and vascular lesion of the left side of the heart with varying degrees of hypoplasia of the left ventricle.
- The International Classification of Diseases code for hypoplastic left heart is 746.7.
- There was no clear trend in the national rate of hypoplastic left heart between 1982 and 1992 (Table 36, Figure 15).
- Among 644 infants with hypoplastic left heart and known outcome, 4.8 per cent were stillborn; 81.6 per cent of liveborn infants died in the neonatal period. As this is a lethal condition, there may be incomplete reporting of neonatal deaths, or the initial diagnosis reported on perinatal forms may sometimes be incorrect.
- Associated major malformations were reported in 12.2 per cent of infants with hypoplastic left heart and another 7.4 per cent had a chromosomal abnormality.
- For births in 1990-1992, the Northern Territory (4.5 per 10,000 births) had the highest reported rate but this was based on only 5 cases (Table 37, Figure 16). Low rates were reported in the Australian Capital Territory (0.7 per 10,000 births) and New South Wales (1.7 per 10,000 births).
- Except for a higher rate of hypoplastic left heart among infants whose mothers were aged 40 years and over, the rate was similar in the other age groups (Table 38).
- Hypoplastic left heart was slightly more common in twins than in singleton births (Table 38).
- The sex ratio of hypoplastic left heart was 148.4 male births per 100 female births (Table 38).
- Low birthweight (less than 2500g) occurred in 18.4 per cent of infants with hypoplastic left heart and known birthweight; 3.2 per cent were extremely low birthweight (Table 39).
- Preterm birth (less than 37 weeks) occurred in 15.2 per cent of infants with hypoplastic left heart and stated gestational age; 3.2 per cent were born before 28 weeks (Table 39).

Table 36: *Hypoplastic left heart by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	54	68	71	47	54	50	56	48	52	67	46	613
Stillbirths	2	1	3	–	1	1	2	3	5	4	9	31
Total births*	56	69	74	47	55	52	58	51	57	72	55	646
Induced abortions	–	–	–	–	–	–	–	1	3	6	2	12
Neonatal deaths	50	63	65	41	48	44	45	39	43	37	25	500
						Rate per 10,000 births						
Total births	2.3	2.9	3.1	1.9	2.2	2.1	2.3	2.0	2.2	2.8	2.1	2.4
						Number						
Isolated	43	59	59	38	51	43	49	39	43	53	42	519
Associated	6	4	11	4	2	8	8	6	10	12	8	79
Chromosomal	7	6	4	5	2	1	1	6	4	7	5	48
						Rate per 10,000 births						
Isolated	1.8	2.4	2.5	1.6	2.1	1.8	2.0	1.5	1.6	2.0	1.6	1.9
Associated	0.3	0.2	0.5	0.2	0.1	0.3	0.3	0.2	0.4	0.5	0.3	0.3
Chromosomal	0.3	0.2	0.2	0.2	0.1	0.0	0.0	0.2	0.2	0.3	0.2	0.2

** Total includes 'not stated'*

Table 37: *Hypoplastic left heart, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	45	45	30	19	16	4	1	5	165
Stillbirths	2	7	4	3	1	1	–	–	18
Total births*	47	52	34	23	17	5	1	5	184
Induced abortions	1	5	–	2	2	–	1	–	11
					Rate per 10,000 births				
Total births	1.7	2.6	2.5	3.0	2.9	2.4	0.7	4.5	2.4
					Number				
Isolated	36	38	29	13	13	3	1	5	138
Associated	9	8	4	5	3	1	–	–	30
Chromosomal	2	6	1	5	1	1	–	–	16
					Rate per 10,000 births				
Isolated	1.3	1.9	2.1	1.7	2.2	1.4	0.7	4.5	1.8
Associated	0.3	0.4	0.3	0.7	0.5	0.5	–	–	0.4
Chromosomal	0.1	0.3	0.1	0.7	0.2	0.5	–	–	0.2

** Total includes 'not stated'*

Figure 15: Hypoplastic left heart, Australia, 1982-1992

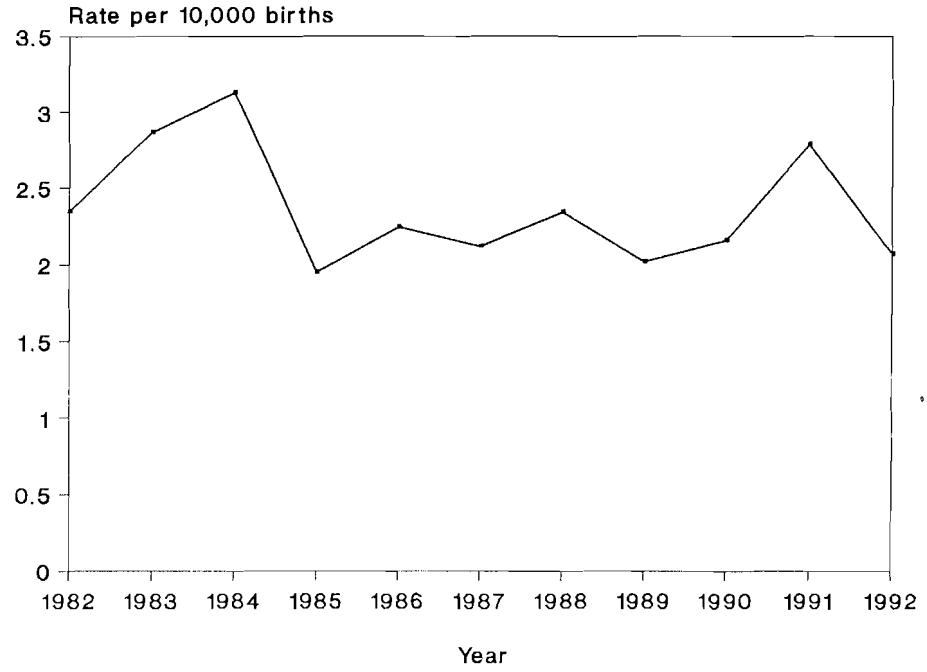

Figure 16: Hypoplastic left heart, States and Territories, 1990-1992

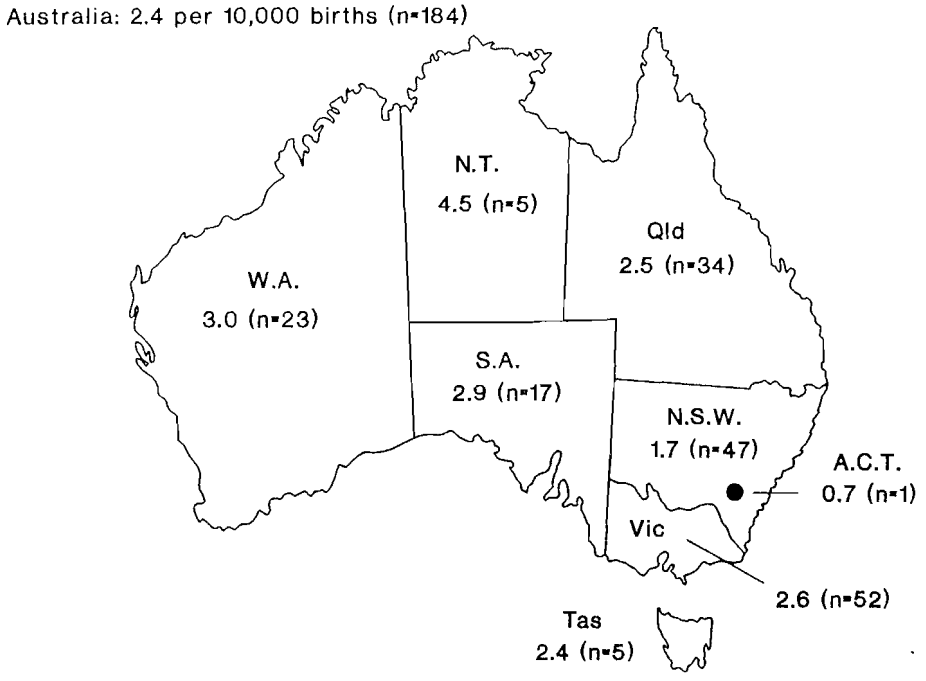

Table 38: *Hypoplastic left heart by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	38	163,050	2.3
20–24	143	640,160	2.2
25–29	236	1,029,355	2.3
30–34	143	665,613	2.1
35–39	51	207,031	2.5
40 and over	12	30,450	3.9
Not stated	23		
Plurality			
Singleton	616	2,675,229	2.3
Twin	21	62,315	3.4
Other multiple	–	2,438	–
Not stated	9		
Infant's sex			
Male	383	1,404,758	2.7
Female	258	1,331,788	1.9
Indeterminate	4		
Not stated	1		

Table 39: *Proportion of births with hypoplastic left heart by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	20	3.2
1000–2499	97	15.5
2500 and over	508	81.3
Not stated	21	
Gestational age (weeks)		
Less than 28	20	3.2
28–36	75	12.0
37 and over	531	84.8
Not stated	20	

2.9 Coarctation of aorta

- Coarctation of the aorta is a congenital malformation resulting from narrowing of the aorta, either proximal or distal to the ductus arteriosus.
- The International Classification of Diseases code for coarctation of the aorta is 747.1.
- Coarctation of the aorta increased between 1982 and the late 1980s, but then declined slightly (Table 40, Figure 17).
- Among 816 infants with coarctation of the aorta and known outcome, 3.3 per cent were stillborn; 23.3 per cent of liveborn infants died in the neonatal period.
- Associated major malformations were reported in 40.0 per cent of infants with coarctation of the aorta and another 6.1 per cent had a chromosomal abnormality.
- For births in 1990-1992, Victoria (4.8 per 10,000 births) had the highest reported rate of coarctation of the aorta; Tasmania (0.5 per 10,000 births) and the Australian Capital Territory (0.7 per 10,000 births) had low rates (Table 41, Figure 18). There were no cases in the Northern Territory.
- Coarctation of the aorta showed little variation with maternal age (Table 42).
- Coarctation of the aorta in twin births was more than double the rate in singleton births (Table 42).
- The sex ratio of coarctation of the aorta was 120.8 male births per 100 female births (Table 42).
- Low birthweight (less than 2500g) occurred in 24.6 per cent of infants with coarctation of the aorta and known birthweight; 2.9 per cent were extremely low birthweight (Table 43).
- Preterm birth (less than 37 weeks) occurred in 20.7 per cent of infants with coarctation of the aorta and stated gestational age; 2.2 per cent were born before 28 weeks (Table 43).

Table 40: *Coarctation of aorta by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	52	63	60	54	79	87	92	78	91	57	76	789
Stillbirths	2	2	3	3	1	2	1	3	2	4	4	27
Total births*	54	65	63	57	80	89	93	81	94	62	80	818
Induced abortions	–	–	–	–	1	–	–	1	–	1	2	5
Neonatal deaths	19	23	20	21	21	20	21	11	14	7	7	184
						Rate per 10,000 births						
Total births	2.3	2.7	2.7	2.4	3.3	3.6	3.8	3.2	3.6	2.4	3.0	3.0
						Number						
Isolated	26	35	29	28	47	53	49	46	51	32	45	441
Associated	26	28	31	23	26	31	41	29	34	27	31	327
Chromosomal	2	2	3	6	7	5	3	6	9	3	4	50
						Rate per 10,000 births						
Isolated	1.1	1.5	1.2	1.2	1.9	2.2	2.0	1.8	1.9	1.2	1.7	1.6
Associated	1.1	1.2	1.3	1.0	1.1	1.3	1.7	1.1	1.3	1.0	1.2	1.2
Chromosomal	0.1	0.1	0.1	0.2	0.3	0.2	0.1	0.2	0.3	0.1	0.2	0.2

** Total includes 'not stated'*

Table 41: *Coarctation of aorta, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	69	89	32	21	11	1	1	–	224
Stillbirths	2	6	–	–	2	–	–	–	10
Total births*	72	96	32	21	13	1	1	–	236
Induced abortions	–	1	–	–	2	–	–	–	3
					Rate per 10,000 births				
Total births	2.6	4.8	2.4	2.8	2.2	0.5	0.7	–	3.0
					Number				
Isolated	40	46	26	10	5	1	–	–	128
Associated	27	42	5	10	7	–	1	–	92
Chromosomal	5	8	1	1	1	–	–	–	16
					Rate per 10,000 births				
Isolated	1.5	2.3	1.9	1.3	0.8	0.5	–	–	1.6
Associated	1.0	2.1	0.4	1.3	1.2	–	0.7	–	1.2
Chromosomal	0.2	0.4	0.1	0.1	0.2	–	–	–	0.2

** Total includes 'not stated'*

Figure 17: Coarctation of aorta, Australia, 1982-1992

Figure 18: Coarctation of aorta,
States and Territories, 1990-1992

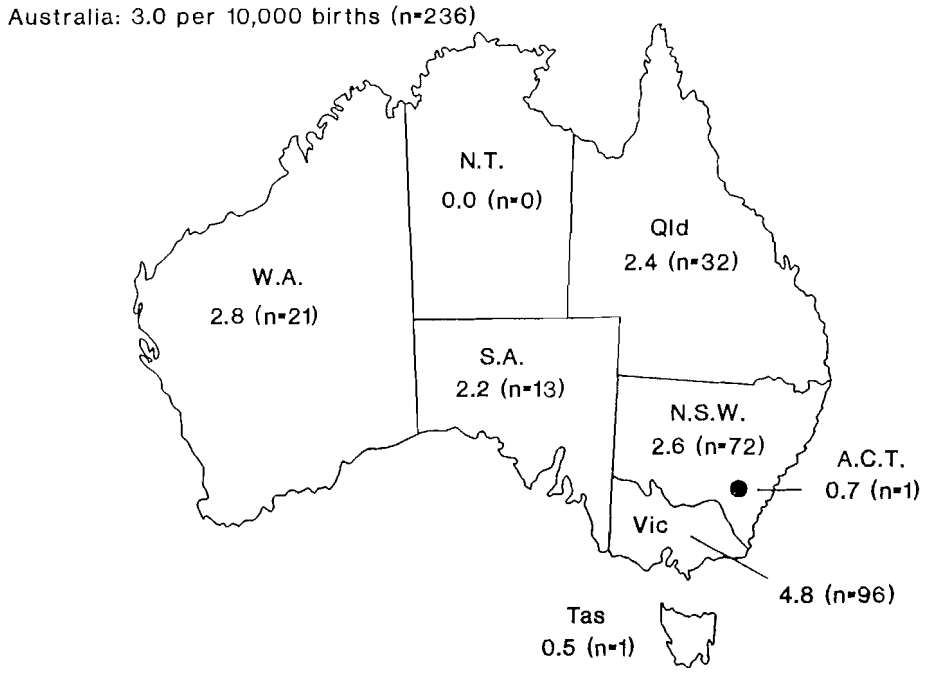

Table 42: *Coarctation of aorta by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	42	163,050	2.6
20–24	166	640,160	2.6
25–29	283	1,029,355	2.7
30–34	216	665,613	3.2
35–39	61	207,031	2.9
40 and over	11	30,450	3.6
Not stated	39		
Plurality			
Singleton	746	2,675,229	2.8
Twin	49	62,315	7.9
Other multiple	1	2,438	4.1
Not stated	22		
Infant's sex			
Male	447	1,404,758	3.2
Female	370	1,331,788	2.8
Indeterminate	1		
Not stated	–		

Table 43: *Proportion of births with coarctation of aorta by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	23	2.9
1000–2499	170	21.6
2500 and over	593	75.4
Not stated	32	
Gestational age (weeks)		
Less than 28	17	2.2
28–36	145	18.5
37 and over	620	79.3
Not stated	36	

2.10 Cleft palate

- Cleft palate is a congenital malformation characterised by a fissure defect of the hard and/or soft palate behind the foramen incisivum without cleft lip.
- The International Classification of Diseases code for cleft palate is 749.0.
- The trend in the national rate of cleft palate showed relatively little change between 1982 and 1992 (Table 44, Figure 19).
- Among 1,530 infants with cleft palate and known outcome, 5.5 per cent were stillborn; 11.5 per cent of liveborn infants died in the neonatal period.
- Associated major malformations were reported in 22.2 per cent of infants with cleft palate and another 7.4 per cent had a chromosomal abnormality.
- For births in 1990-1992, Northern Territory (9.1 per 10,000 births) had the highest and the Australian Capital Territory (2.2 per 10,000 births) the lowest reported rates of cleft palate (Table 45, Figure 20), but these were based on relatively small numbers of births.
- Cleft palate did not vary markedly with maternal age (Table 46).
- Cleft palate was slightly more common in twins than in singleton births, and somewhat higher in other multiple births (Table 46).
- The sex ratio of cleft palate was 78.9 male births per 100 female births (Table 46).
- Low birthweight (less than 2500g) occurred in 21.6 per cent of infants with cleft palate and known birthweight; 3.8 per cent were extremely low birthweight (Table 47).
- Preterm birth (less than 37 weeks) occurred in 17.4 per cent of infants with cleft palate and stated gestational age; 2.5 per cent were born before 28 weeks (Table 47).

Table 44: *Cleft palate by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	123	119	126	106	130	117	128	143	154	147	153	1,446
Stillbirths	9	7	14	7	5	11	7	9	4	4	7	84
Total births*	132	127	141	113	135	128	135	152	160	153	161	1,537
Induced abortions	–	–	–	–	–	–	–	2	3	6	2	13
Neonatal deaths	25	26	19	10	17	16	13	16	9	7	8	166
						Rate per 10,000 births						
Total births	5.5	5.3	6.0	4.7	5.5	5.2	5.5	6.0	6.1	5.9	6.1	5.6
						Number						
Isolated	83	75	97	82	96	88	96	97	130	114	125	1,083
Associated	40	40	33	24	23	29	30	45	25	29	23	341
Chromosomal	9	12	11	7	16	11	9	10	5	10	13	113
						Rate per 10,000 births						
Isolated	3.5	3.1	4.1	3.4	3.9	3.6	3.9	3.8	4.9	4.4	4.7	4.0
Associated	1.7	1.7	1.4	1.0	0.9	1.2	1.2	1.8	0.9	1.1	0.9	1.2
Chromosomal	0.4	0.5	0.5	0.3	0.7	0.4	0.4	0.4	0.2	0.4	0.5	0.4

** Total includes 'not stated'*

Table 45: *Cleft palate, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	166	108	74	44	39	11	3	9	454
Stillbirths	3	4	3	1	2	1	–	1	15
Total births*	171	113	77	46	42	12	3	10	474
Induced abortions	1	2	–	5	2	–	1	–	11
					Rate per 10,000 births				
Total births	6.3	5.7	5.7	6.0	7.1	5.7	2.2	9.1	6.1
					Number				
Isolated	135	91	63	31	28	9	3	9	369
Associated	26	15	11	11	11	2	–	1	77
Chromosomal	10	7	3	4	3	1	–	–	28
					Rate per 10,000 births				
Isolated	5.0	4.6	4.6	4.1	4.7	4.3	2.2	8.2	4.7
Associated	1.0	0.8	0.8	1.4	1.9	1.0	–	0.9	1.0
Chromosomal	0.4	0.4	0.2	0.5	0.5	0.5	–	–	0.4

** Total includes 'not stated'*

Figure 19: Cleft palate, Australia, 1982-1992

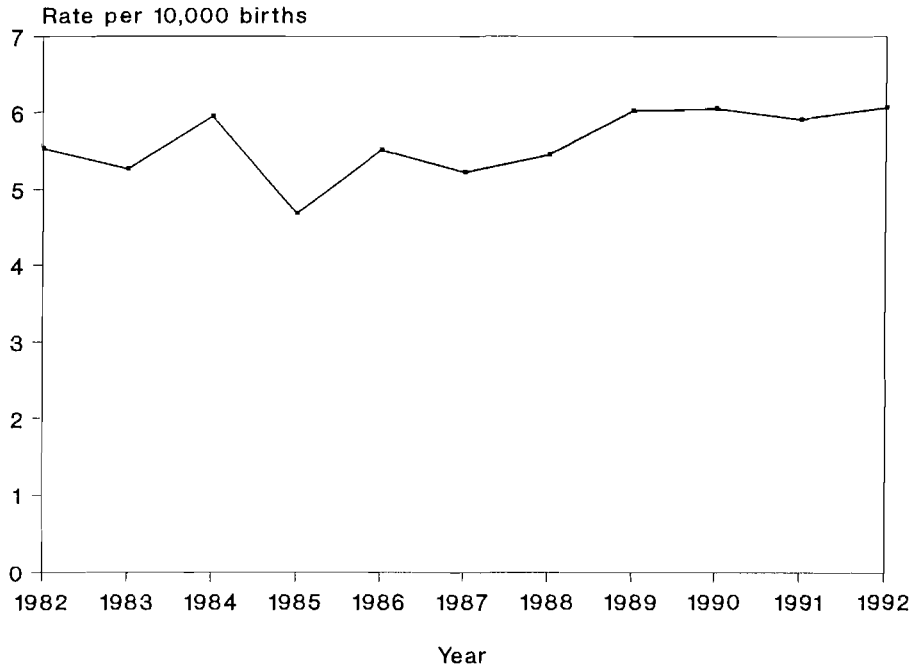

Figure 20: Cleft palate, States and Territories, 1990-1992

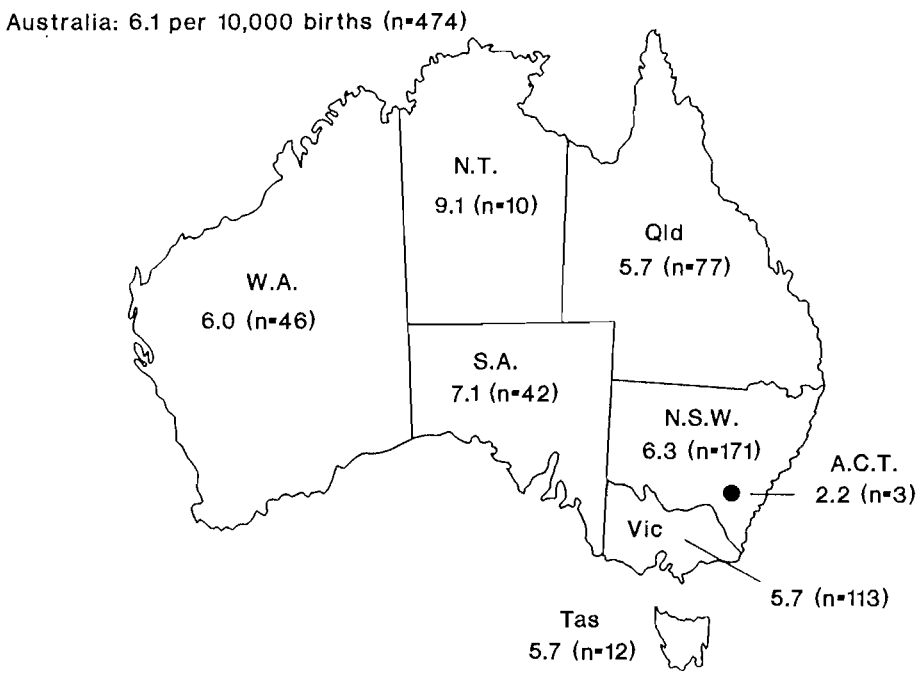

Table 46: *Cleft palate by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	82	163,050	5.0
20–24	346	640,160	5.4
25–29	506	1,029,355	4.9
30–34	410	665,613	6.2
35–39	138	207,031	6.7
40 and over	16	30,450	5.3
Not stated	39		
Plurality			
Singleton	1,410	2,675,229	5.3
Twin	41	62,315	6.6
Other multiple	4	2,438	16.4
Not stated	82		
Infant's sex			
Male	675	1,404,758	4.8
Female	855	1,331,788	6.4
Indeterminate	6		
Not stated	1		

Table 47: *Proportion of births with cleft palate by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	54	3.8
1000–2499	254	17.8
2500 and over	1,121	78.4
Not stated	108	
Gestational age (weeks)		
Less than 28	36	2.5
28–36	215	14.9
37 and over	1,190	82.6
Not stated	96	

2.11 Cleft lip

- Cleft lip is a congenital malformation characterised by clefting of the upper lip, with or without clefting of the alveolar ridge and palate.
- The International Classification of Diseases codes for cleft lip are 749.1 for isolated cleft lip and 749.2 for cleft lip with cleft palate.
- The national rate of cleft lip with or without cleft palate was relatively stable between 1982 and 1992 (Table 48, Figure 21).
- Among 2,465 infants with cleft lip and known outcome, 6.2 per cent were stillborn; 7.8 per cent of liveborn infants died in the neonatal period.
- Associated major malformations were reported in 12.1 per cent of infants with cleft lip and another 6.2 per cent had a chromosomal abnormality.
- For births in 1990-1992, Tasmania (10.5 per 10,000 births) had the highest rate and Western Australia (5.8 per 10,000 births) the lowest rate (Table 49, Figure 22).
- The variations in the rate of cleft lip with maternal age showed no clear pattern (Table 50).
- The rate of cleft lip was similar in singleton and twin births (Table 50).
- The sex ratio of cleft lip was 174.0 male births per 100 female births (Table 50).
- Low birthweight (less than 2500g) occurred in 17.9 per cent of infants with cleft lip and known birthweight; 3.6 per cent were extremely low birthweight (Table 51).
- Preterm birth (less than 37 weeks) occurred in 15.7 per cent of infants with cleft lip and stated gestational age; 2.6 per cent were born before 28 weeks (Table 51).

Table 48: *Cleft lip with or without cleft palate by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	208	195	209	202	207	225	194	239	231	198	203	2,311
Stillbirths	14	11	17	13	11	9	17	12	15	13	22	154
Total births*	222	206	226	215	218	234	211	252	248	212	225	2,469
Induced abortions	–	–	3	–	2	–	2	5	8	6	6	32
Neonatal deaths	13	22	16	19	19	20	9	26	7	17	13	181
						Rate per 10,000 births						
Total births	9.3	8.5	9.5	8.9	8.9	9.5	8.5	10.0	9.4	8.2	8.5	9.0
						Number						
Isolated	189	168	180	172	179	187	176	196	215	169	185	2,016
Associated	24	24	34	27	28	32	18	34	23	28	27	299
Chromosomal	9	14	12	16	11	15	17	22	10	15	13	154
						Rate per 10,000 births						
Isolated	7.9	7.0	7.6	7.1	7.3	7.6	7.1	7.8	8.1	6.5	7.0	7.4
Associated	1.0	1.0	1.4	1.1	1.1	1.3	0.7	1.3	0.9	1.1	1.0	1.1
Chromosomal	0.4	0.6	0.5	0.7	0.4	0.6	0.7	0.9	0.4	0.6	0.5	0.6

** Total includes 'not stated'*

Table 49: *Cleft lip with or without cleft palate, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	215	171	123	39	49	13	12	10	632
Stillbirths	11	15	7	5	2	9	1	–	50
Total births*	228	186	130	44	52	22	13	10	685
Induced abortions	3	9	–	–	7	–	1	–	20
					Rate per 10,000 births				
Total births	8.4	9.3	9.6	5.8	8.8	10.5	9.5	9.1	8.8
					Number				
Isolated	189	152	109	37	45	17	13	7	569
Associated	24	27	12	5	6	1	–	3	78
Chromosomal	15	7	9	2	1	4	–	–	38
					Rate per 10,000 births				
Isolated	6.9	7.6	8.0	4.9	7.6	8.1	9.5	6.4	7.3
Associated	0.9	1.4	0.9	0.7	1.0	0.5	–	2.7	1.0
Chromosomal	0.6	0.4	0.7	0.3	0.2	1.9	–	–	0.5

** Total includes 'not stated'*

Figure 21: Cleft lip with or without cleft palate, Australia, 1982-1992

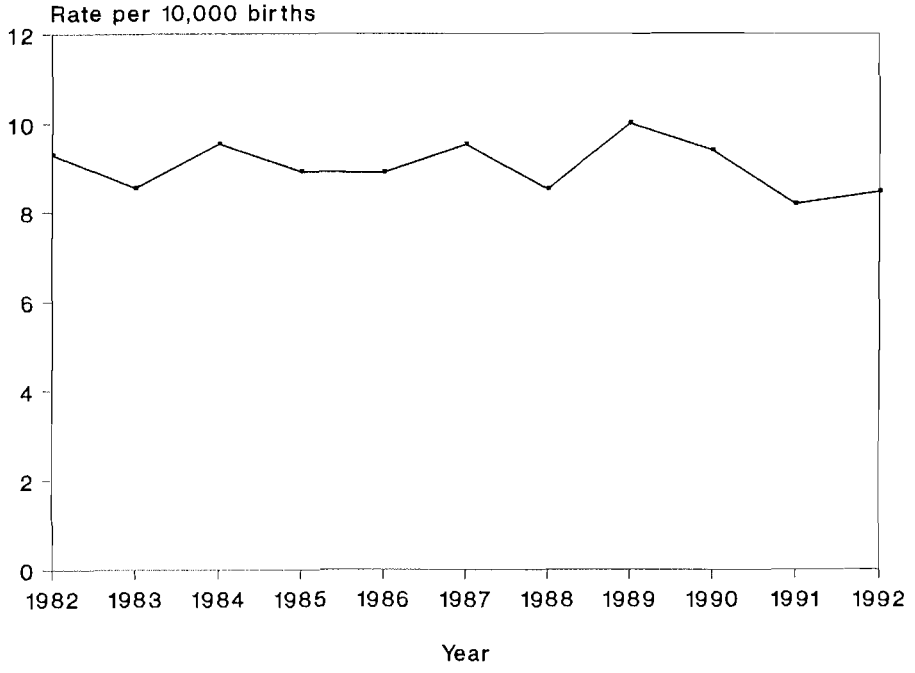

Figure 22: Cleft lip with or without cleft palate, States and Territories, 1990-1992

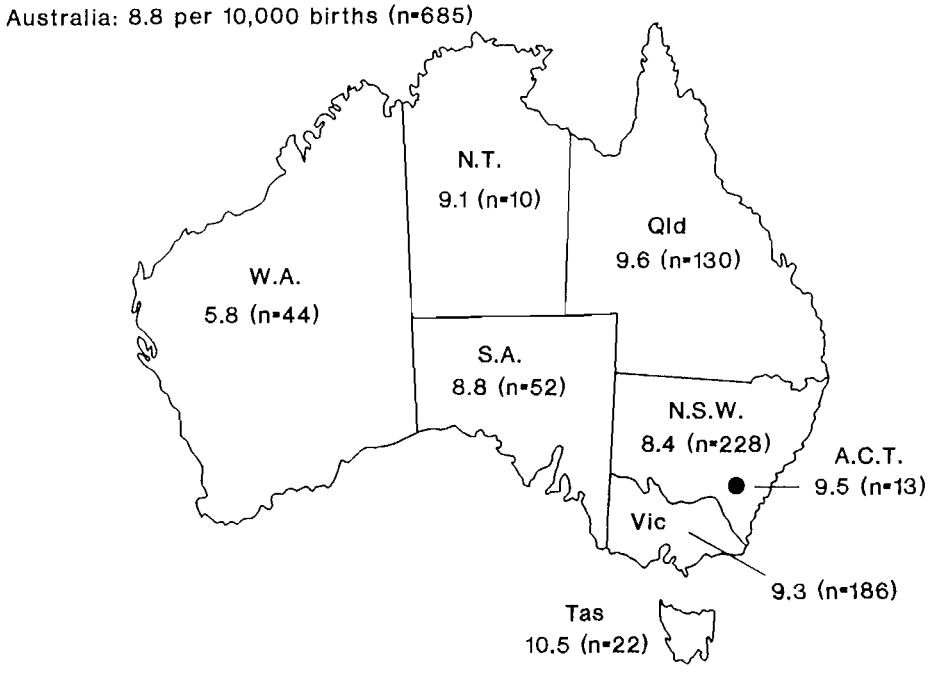

Table 50: *Cleft lip with or without cleft palate by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	171	163,050	10.5
20–24	586	640,160	9.2
25–29	868	1,029,355	8.4
30–34	575	665,613	8.6
35–39	214	207,031	10.3
40 and over	22	30,450	7.2
Not stated	33		
Plurality			
Singleton	2,249	2,675,229	8.4
Twin	56	62,315	9.0
Other multiple	1	2,438	4.1
Not stated	163		
Infant's sex			
Male	1,564	1,404,758	11.1
Female	899	1,331,788	6.8
Indeterminate	4		
Not stated	2		

Table 51: *Proportion of births with cleft lip with or without cleft palate by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	82	3.6
1000–2499	329	14.4
2500 and over	1,879	82.1
Not stated	179	
Gestational age (weeks)		
Less than 28	60	2.6
28–36	299	13.1
37 and over	1,930	84.3
Not stated	180	

2.12 Oesophageal atresia or stenosis

- Oesophageal atresia or stenosis is a congenital malformation characterised by occlusion or narrowing of the oesophagus, with or without tracheo-oesophageal fistula.
- The International Classification of Diseases code for oesophageal atresia or stenosis is 750.3.
- The national rate of oesophageal atresia or stenosis was relatively stable between 1982 and 1992 (Table 52, Figure 23).
- Among 847 infants with oesophageal atresia or stenosis and known outcome, 9.9 per cent were stillborn; 20.4 per cent of liveborn infants died in the neonatal period.
- Associated major malformations were reported in 38.5 per cent of infants with oesophageal atresia or stenosis and another 8.8 per cent had a chromosomal abnormality.
- For births in 1990-1992, South Australia (4.9 per 10,000 births) had the highest reported rate of oesophageal atresia and the Northern Territory (0.9 per 10,000 births) had the lowest rate (Table 53, Figure 24).
- The maternal age-specific rates of oesophageal atresia or stenosis showed relatively little variation, except for a higher rate for mothers aged 40 years and over (Table 54).
- Oesophageal atresia or stenosis was almost 3 times as common in twin births as in singleton births (Table 54).
- The sex ratio of oesophageal atresia or stenosis was 132.4 male births per 100 female births (Table 54).
- Low birthweight (less than 2500g) occurred in 51.2 per cent of infants with oesophageal atresia or stenosis and known birthweight; 5.6 per cent were extremely low birthweight (Table 55).
- Preterm birth (less than 37 weeks) occurred in 41.3 per cent of infants with oesophageal atresia or stenosis and stated gestational age; 4.1 per cent were born before 28 weeks (Table 55).

Table 52: *Oesophageal atresia/stenosis by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	80	66	70	65	53	79	62	65	73	71	79	763
Stillbirths	5	12	5	12	5	9	7	8	8	6	7	84
Total births*	85	78	75	77	58	88	69	73	82	77	88	850
Induced abortions	–	–	–	–	–	–	–	–	–	1	–	1
Neonatal deaths	28	18	18	13	12	14	15	6	16	10	6	156
						Rate per 10,000 births						
Total births	3.6	3.2	3.2	3.2	2.4	3.6	2.8	2.9	3.1	3.0	3.3	3.1
						Number						
Isolated	45	43	44	37	30	45	38	34	43	44	45	448
Associated	32	29	26	36	19	32	26	30	31	27	39	327
Chromosomal	8	6	5	4	9	11	5	9	8	6	4	75
						Rate per 10,000 births						
Isolated	1.9	1.8	1.9	1.5	1.2	1.8	1.5	1.3	1.6	1.7	1.7	1.6
Associated	1.3	1.2	1.1	1.5	0.8	1.3	1.0	1.2	1.2	1.0	1.5	1.2
Chromosomal	0.3	0.2	0.2	0.2	0.4	0.4	0.2	0.4	0.3	0.2	0.2	0.3

** Total includes 'not stated'*

Table 53: *Oesophageal atresia/stenosis, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	76	59	42	16	22	5	2	1	223
Stillbirths	6	7	1	–	4	2	1	–	21
Total births*	82	66	43	16	29	7	3	1	247
Induced abortions	–	1	–	–	–	–	–	–	1
					Rate per 10,000 births				
Total births	3.0	3.3	3.2	2.1	4.9	3.3	2.2	0.9	3.2
					Number				
Isolated	43	40	26	7	8	5	2	1	132
Associated	34	20	15	7	18	2	1	–	97
Chromosomal	5	6	2	2	3	–	–	–	18
					Rate per 10,000 births				
Isolated	1.6	2.0	1.9	0.9	1.4	2.4	1.5	0.9	1.7
Associated	1.2	1.0	1.1	0.9	3.0	1.0	0.7	–	1.2
Chromosomal	0.2	0.3	0.1	0.3	0.5	–	–	–	0.2

** Total includes 'not stated'*

Figure 23: Oesophageal atresia/stenosis, Australia, 1982-1992

Figure 24: Oesophageal atresia/stenosis, States and Territories, 1990-1992

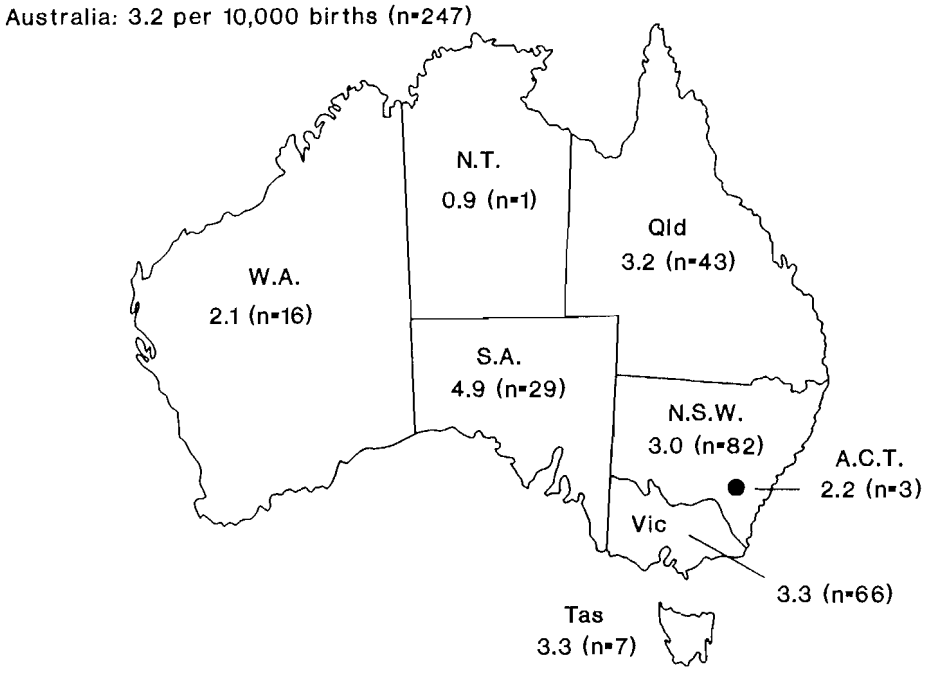

Table 54: *Oesophageal atresia/stenosis by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	58	163,050	3.6
20–24	173	640,160	2.7
25–29	300	1,029,355	2.9
30–34	214	665,613	3.2
35–39	75	207,031	3.6
40 and over	16	30,450	5.3
Not stated	14		
Plurality			
Singleton	752	2,675,229	2.8
Twin	52	62,315	8.3
Other multiple	1	2,438	4.1
Not stated	45		
Infant's sex			
Male	478	1,404,758	3.4
Female	361	1,331,788	2.7
Indeterminate	10		
Not stated	1		

Table 55: *Proportion of births with oesophageal atresia/stenosis by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	45	5.6
1000–2499	363	45.5
2500 and over	389	48.8
Not stated	53	
Gestational age (weeks)		
Less than 28	33	4.1
28–36	299	37.2
37 and over	471	58.7
Not stated	47	

2.13 Small intestinal atresia or stenosis

- Small intestinal atresia or stenosis is a congenital malformation characterised by occlusion or narrowing of the duodenum, jejunum or ileum.
- The International Classification of Diseases code for atresia and stenosis of the small intestine is 751.1.
- The national rate of small intestinal atresia/stenosis was relatively stable between 1982 and 1992 (Table 56, Figure 25).
- Among 583 infants with small intestinal atresia/stenosis and known outcome, 4.9 per cent were stillborn; 16.8 per cent of liveborn infants died in the neonatal period.
- Associated major malformations were reported in 23.3 per cent of infants with small intestinal atresia/stenosis and another 18.7 per cent had a chromosomal abnormality.
- For births in 1990-1992, South Australia (3.4 per 10,000 births) had the highest reported rate of small intestinal atresia/stenosis; the lowest rate was in Tasmania, where there were no cases (Table 57, Figure 26).
- The rate of small intestinal atresia/stenosis was higher for births to mothers aged 35-39 years and 40 years and over than for younger mothers (Table 58).
- Small intestinal atresia/stenosis was more than three times more common in twins than in singleton births (Table 58).
- The sex ratio of small intestinal atresia/stenosis was 106.0 male births per 100 female births (Table 58).
- Low birthweight (less than 2500g) occurred in 50.8 per cent of infants with small intestinal atresia/stenosis and known birthweight; 4.0 per cent were extremely low birthweight (Table 59).
- Preterm birth (less than 37 weeks) occurred in 48.8 per cent of infants with small intestinal atresia/stenosis and stated gestational age; 3.3 per cent were born before 28 weeks (Table 59).

Table 56: *Small intestinal atresia/stenosis by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	53	50	41	53	42	46	62	42	54	58	57	558
Stillbirths	2	5	1	3	2	3	2	3	4	2	2	29
Total births*	55	55	43	56	44	49	64	45	58	60	60	589
Induced abortions	–	–	–	–	–	–	–	–	–	–	–	–
Neonatal deaths	10	14	13	13	7	8	8	8	4	8	1	94
						Rate per 10,000 births						
Total births	2.3	2.3	1.8	2.3	1.8	2.0	2.6	1.8	2.2	2.3	2.3	2.2
						Number						
Isolated	35	30	23	37	32	22	36	20	36	31	40	342
Associated	13	12	11	11	4	14	13	12	15	19	13	137
Chromosomal	7	13	9	8	8	13	15	13	7	10	7	110
						Rate per 10,000 births						
Isolated	1.5	1.2	1.0	1.5	1.3	0.9	1.5	0.8	1.4	1.2	1.5	1.2
Associated	0.5	0.5	0.5	0.5	0.2	0.6	0.5	0.5	0.6	0.7	0.5	0.5
Chromosomal	0.3	0.5	0.4	0.3	0.3	0.5	0.6	0.5	0.3	0.4	0.3	0.4

** Total includes 'not stated'*

Table 57: *Small intestinal atresia/stenosis, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	56	52	22	16	19	–	2	2	169
Stillbirths	1	3	–	4	–	–	–	–	8
Total births*	57	55	22	20	20	–	2	2	178
Induced abortions	–	–	–	–	–	–	–	–	–
					Rate per 10,000 births				
Total births	2.1	2.8	1.6	2.6	3.4	–	1.5	1.8	2.3
					Number				
Isolated	37	28	18	11	12	–	1	–	107
Associated	15	15	4	6	6	–	–	1	47
Chromosomal	5	12	–	3	2	–	1	1	24
					Rate per 10,000 births				
Isolated	1.4	1.4	1.3	1.4	2.0	–	0.7	–	1.4
Associated	0.6	0.8	0.3	0.8	1.0	–	–	0.9	0.6
Chromosomal	0.2	0.6	–	0.4	0.3	–	0.7	0.9	0.3

** Total includes 'not stated'*

Figure 25: Small intestinal atresia/stenosis, Australia, 1982-1992

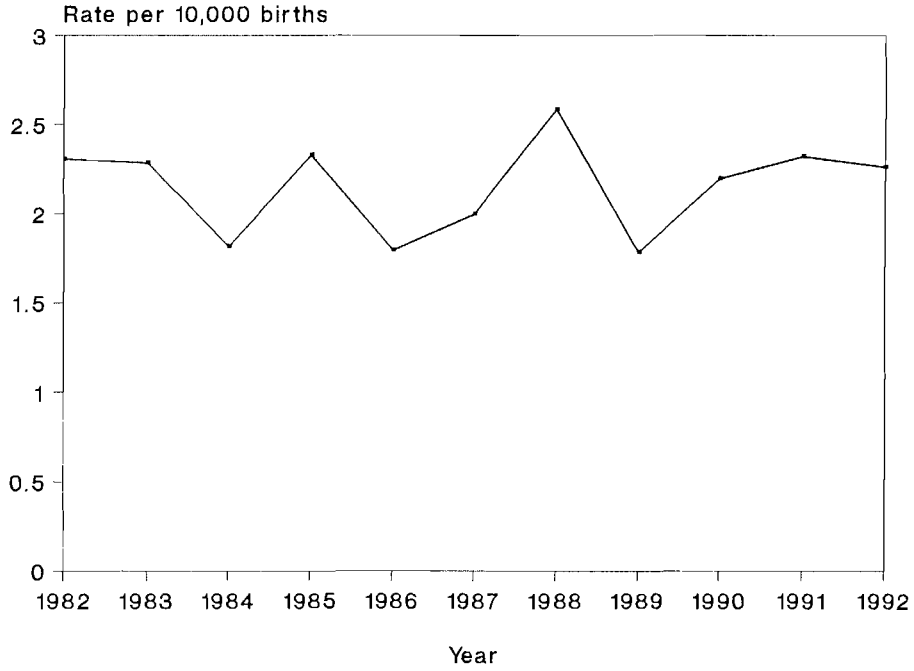

Figure 26: Small intestinal atresia/stenosis, States and Territories, 1990-1992

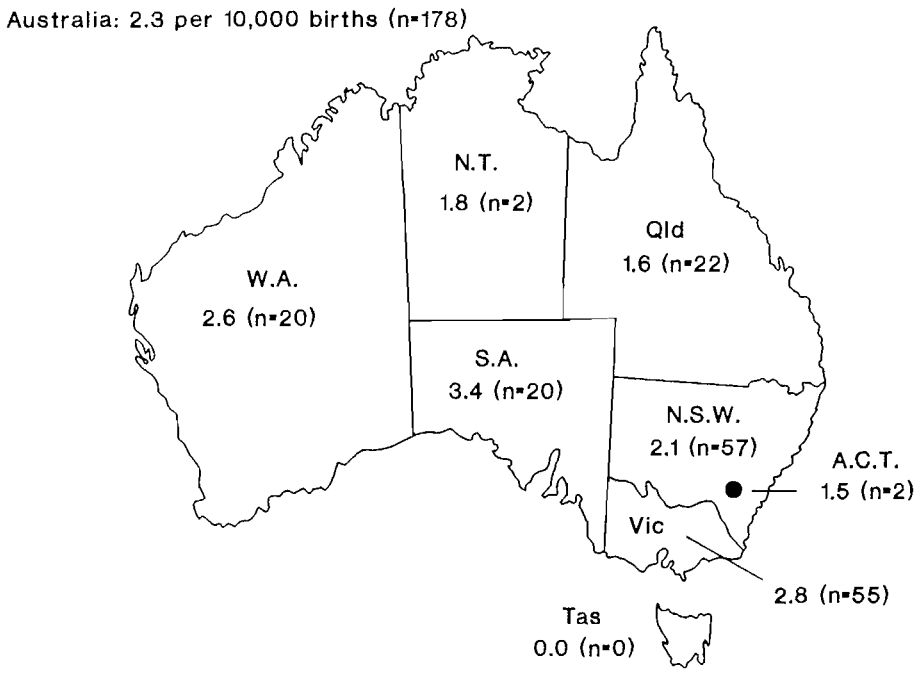

Table 58: *Small intestinal atresia/stenosis by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	42	163,050	2.6
20–24	121	640,160	1.9
25–29	176	1,029,355	1.7
30–34	126	665,613	1.9
35–39	82	207,031	4.0
40 and over	19	30,450	6.2
Not stated	23		
Plurality			
Singleton	514	2,675,229	1.9
Twin	40	62,315	6.4
Other multiple	1	2,438	4.1
Not stated	34		
Infant's sex			
Male	299	1,404,758	2.1
Female	282	1,331,788	2.1
Indeterminate	7		
Not stated	1		

Table 59: *Proportion of births with small intestinal atresia/stenosis by birthweight and gestational age Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	22	4.0
1000–2499	257	46.8
2500 and over	270	49.2
Not stated	40	
Gestational age (weeks)		
Less than 28	18	3.3
28–36	248	45.5
37 and over	279	51.2
Not stated	44	

2.14 Anorectal atresia or stenosis

- Anorectal atresia or stenosis is a congenital malformation characterised by absence of the anus or of the communication between rectum and anus, or narrowing of the canal, with or without fistula to neighbouring organs. Clinically, these malformations are often termed imperforate anus.

- The International Classification of Diseases code for atresia and stenosis of the large intestine, rectum and anal canal is 741.2. The BPA codes for atresia or stenosis of the rectum or anus are 751.21-751.24.

- The national rate of anorectal atresia/stenosis has varied between 2.9 and 4.0 per 10,000 births in the period from 1982 to 1992 (Table 60, Figure 27).

- Among 912 infants with anorectal atresia/stenosis and known outcome, 12.4 per cent were stillborn; 25.4 per cent of liveborn infants died in the neonatal period.

- Associated major malformations were reported in 56.8 per cent of infants with anorectal atresia/stenosis and another 6.3 per cent had a chromosomal abnormality.

- For births in 1990-1992, South Australia (5.1 per 10,000 births) had the highest reported rate of anorectal atresia; the lowest rate was in Tasmania, where there were no cases (Table 61, Figure 28).

- Anorectal atresia/stenosis was slightly more common for births to mothers in the youngest and oldest age groups than in other age groups (Table 62).

- Anorectal atresia/stenosis was more common in twins and other multiple births than in singleton births (Table 62).

- The sex ratio of anorectal atresia/stenosis was 205.3 male births per 100 female births (Table 62).

- Low birthweight (less than 2500g) occurred in 40.0 per cent of infants with anorectal atresia/stenosis and known birthweight; 6.7 per cent were extremely low birthweight (Table 63).

- Preterm birth (less than 37 weeks) occurred in 36.0 per cent of infants with anorectal atresia/stenosis and stated gestational age; 5.8 per cent were born before 28 weeks (Table 63).

Table 60: *Atresia/stenosis of large intestine, rectum or anal canal by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	85	75	66	69	60	89	67	66	73	74	75	799
Stillbirths	10	8	8	14	12	9	7	11	14	12	8	113
Total births*	95	83	74	83	72	99	74	77	87	87	84	915
Induced abortions	–	–	–	–	2	–	2	1	4	5	1	15
Neonatal deaths	34	28	19	24	15	22	20	10	15	12	4	203
						Rate per 10,000 births						
Total births	4.0	3.4	3.1	3.4	2.9	4.0	3.0	3.1	3.3	3.4	3.2	3.3
						Number						
Isolated	29	23	32	27	30	35	30	26	34	32	39	337
Associated	59	58	36	53	37	56	41	44	49	50	37	520
Chromosomal	7	2	6	3	5	8	3	7	4	5	8	58
						Rate per 10,000 births						
Isolated	1.2	1.0	1.4	1.1	1.2	1.4	1.2	1.0	1.3	1.2	1.5	1.2
Associated	2.5	2.4	1.5	2.2	1.5	2.3	1.7	1.7	1.9	1.9	1.4	1.9
Chromosomal	0.3	0.1	0.3	0.1	0.2	0.3	0.1	0.3	0.2	0.2	0.3	0.2

** Total includes 'not stated'*

Table 61: *Atresia/stenosis of large intestine, rectum or anal canal, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	74	64	33	24	23	–	–	4	222
Stillbirths	11	13	1	3	5	–	1	–	34
Total births*	85	77	34	27	30	–	1	4	258
Induced abortions	–	5	–	1	4	–	–	–	10
					Rate per 10,000 births				
Total births	3.1	3.9	2.5	3.5	5.1	–	0.7	3.6	3.3
					Number				
Isolated	29	38	17	9	11	–	–	1	105
Associated	52	35	17	13	16	–	1	2	136
Chromosomal	4	4	–	5	3	–	–	1	17
					Rate per 10,000 births				
Isolated	1.1	1.9	1.2	1.2	1.9	–	–	0.9	1.4
Associated	1.9	1.8	1.2	1.7	2.7	–	0.7	1.8	1.7
Chromosomal	0.1	0.2	–	0.7	0.5	–	–	0.9	0.2

** Total includes 'not stated'*

Figure 27: Atresia/stenosis of large intestine, rectum or anal canal, Australia, 1982-1992

Figure 28: Atresia/stenosis of large intestine, rectum or anal canal, States and Territories, 1990-1992

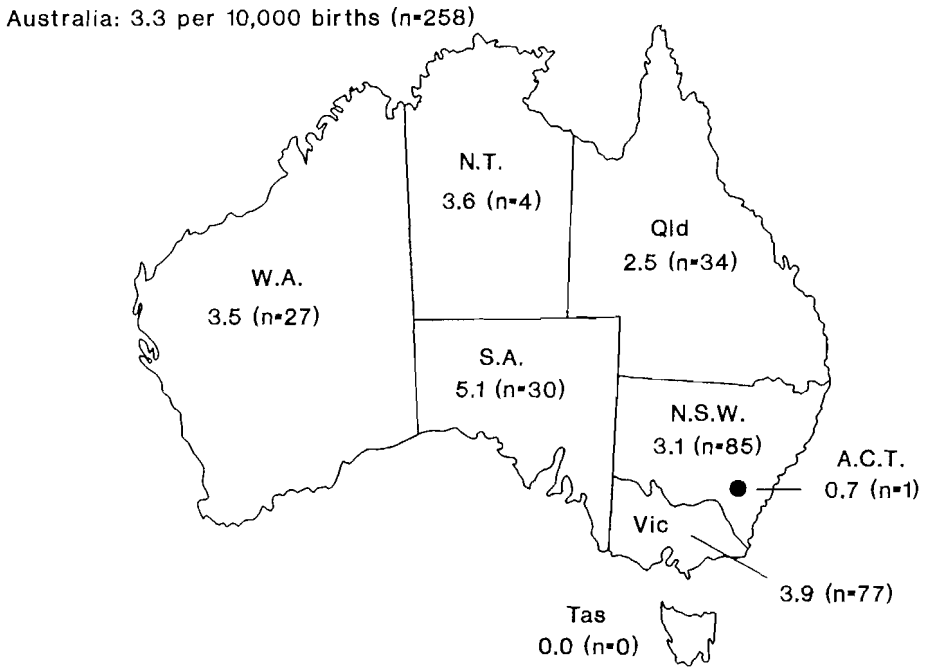

Table 62: *Atresia/stenosis of large intestine, rectum or anal canal by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	73	163,050	4.5
20–24	210	640,160	3.3
25–29	336	1,029,355	3.3
30–34	202	665,613	3.0
35–39	65	207,031	3.1
40 and over	15	30,450	4.9
Not stated	14		
Plurality			
Singleton	833	2,675,229	3.1
Twin	35	62,315	5.6
Other multiple	3	2,438	12.3
Not stated	44		
Infant's sex			
Male	577	1,404,758	4.1
Female	281	1,331,788	2.1
Indeterminate	55		
Not stated	2		

Table 63: *Proportion of births with atresia/stenosis of large intestine, rectum or anal canal by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	57	6.7
1000–2499	284	33.3
2500 and over	512	60.0
Not stated	62	
Gestational age (weeks)		
Less than 28	50	5.8
28–36	260	30.2
37 and over	552	64.0
Not stated	53	

2.15 Hypospadias

- Hypospadias is a congenital malformation characterised by opening of the urethra on the ventral side of the penis, irrespective of the degree of severity.

- The International Classification of Diseases code for hypospadias is 752.6. Although epispadias and congenital chordee are also included under this code in ICD, separate 5-digit codes in the BPA classification enable distinction between hypospadias and these other malformations.

- The national rate of hypospadias increased from about 15-18 per 10,000 births in the mid-1980s to 22.9 and 22.6 per 10,000 births in 1991 and 1992, respectively (Table 64, Figure 29).

- Among 5,276 infants with hypospadias and known outcome, 1.0 per cent were stillborn; 2.3 per cent of liveborn infants died in the neonatal period.

- Associated major malformations were reported in 6.3 per cent of infants with hypospadias and another 1.3 per cent had a chromosomal abnormality.

- For births in 1990-1992, the reported rates of hypospadias showed considerable variation by State and Territory of birth. Victoria (27.8 per 10,000 births) had the highest rate and Northern Territory (0.9 per 10,000 births) the lowest rate (Table 65, Figure 30). These marked variations are likely to be due to differences in ascertainment.

- Hypospadias was more common in twins and other multiple births than in singleton births (Table 66).

- Hypospadias showed little variation with maternal age (Table 66).

- Inferior ectopic opening of the urethra (equivalent to hypospadias) is rarely diagnosed in females; only 4 cases in females were reported in the period from 1982 to 1992 (Table 66).

- Low birthweight (less than 2500g) occurred in 13.5 per cent of infants with hypospadias and known birthweight; 1.2 per cent were extremely low birthweight (Table 67).

- Preterm birth (less than 37 weeks) occurred in 12.5 per cent of infants with hypospadias and stated gestational age; 0.5 per cent were born before 28 weeks (Table 67).

Table 64: *Hypospadias by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	475	424	353	361	432	451	477	513	561	591	585	5,223
Stillbirths	1	7	8	4	3	2	4	4	6	1	13	53
Total births*	476	432	361	365	435	453	481	517	567	593	600	5,280
Induced abortions	–	–	–	–	–	–	–	1	–	–	1	2
Neonatal deaths	16	9	14	13	9	9	10	12	11	6	9	118
						Rate per 10,000 births						
Total births	19.9	17.9	15.2	15.1	17.8	18.5	19.4	20.5	21.5	22.9	22.6	19.3
						Number						
Isolated	434	409	326	329	405	402	452	470	524	559	571	4,881
Associated	37	20	30	26	24	45	23	36	38	27	26	332
Chromosomal	5	3	5	10	6	6	6	11	5	7	3	67
						Rate per 10,000 births						
Isolated	18.2	17.0	13.8	13.6	16.5	16.4	18.3	18.6	19.8	21.6	21.5	17.8
Associated	1.6	0.8	1.3	1.1	1.0	1.8	0.9	1.4	1.4	1.0	1.0	1.2
Chromosomal	0.2	0.1	0.2	0.4	0.2	0.2	0.2	0.4	0.2	0.3	0.1	0.2

** Total includes 'not stated'*

Table 65: *Hypospadias, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	573	552	276	154	136	25	20	1	1,737
Stillbirths	7	2	–	–	1	10	–	–	20
Total births*	581	554	278	154	137	35	20	1	1,760
Induced abortions	–	–	–	–	1	–	–	–	1
					Rate per 10,000 births				
Total births	21.3	27.8	20.4	20.2	23.2	16.7	14.6	0.9	22.6
					Number				
Isolated	532	527	271	142	127	35	20	–	1,654
Associated	43	24	6	9	8	–	–	1	91
Chromosomal	6	3	1	3	2	–	–	–	15
					Rate per 10,000 births				
Isolated	19.5	26.4	19.9	18.6	21.5	16.7	14.6	–	21.3
Associated	1.6	1.2	0.4	1.2	1.4	–	–	0.9	1.2
Chromosomal	0.2	0.2	0.1	0.4	0.3	–	–	–	0.2

** Total includes 'not stated'*

Figure 29: Hypospadias, Australia, 1982-1992

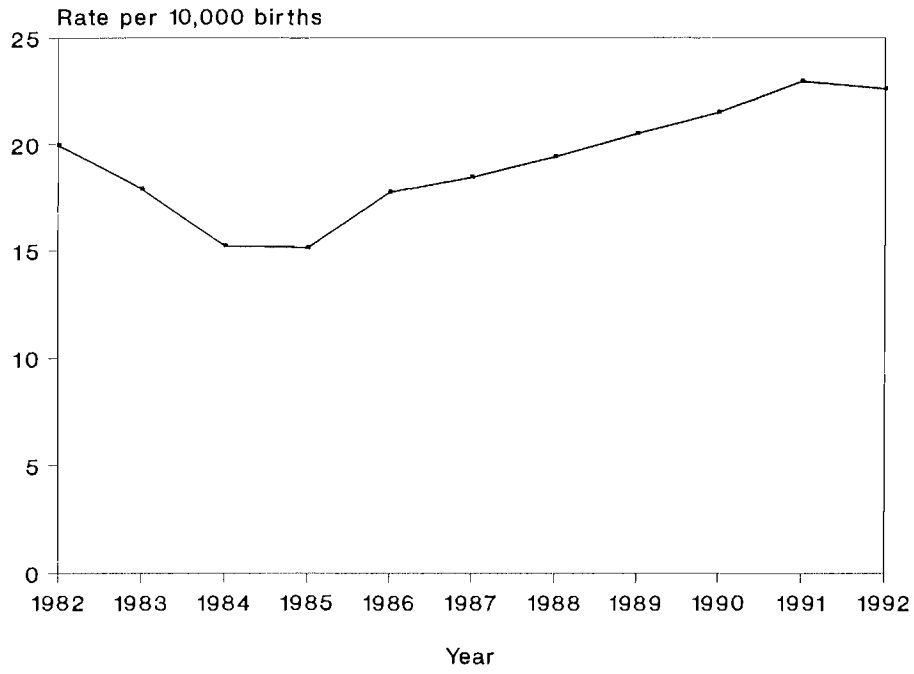

Figure 30: Hypospadias, States and Territories, 1990-1992

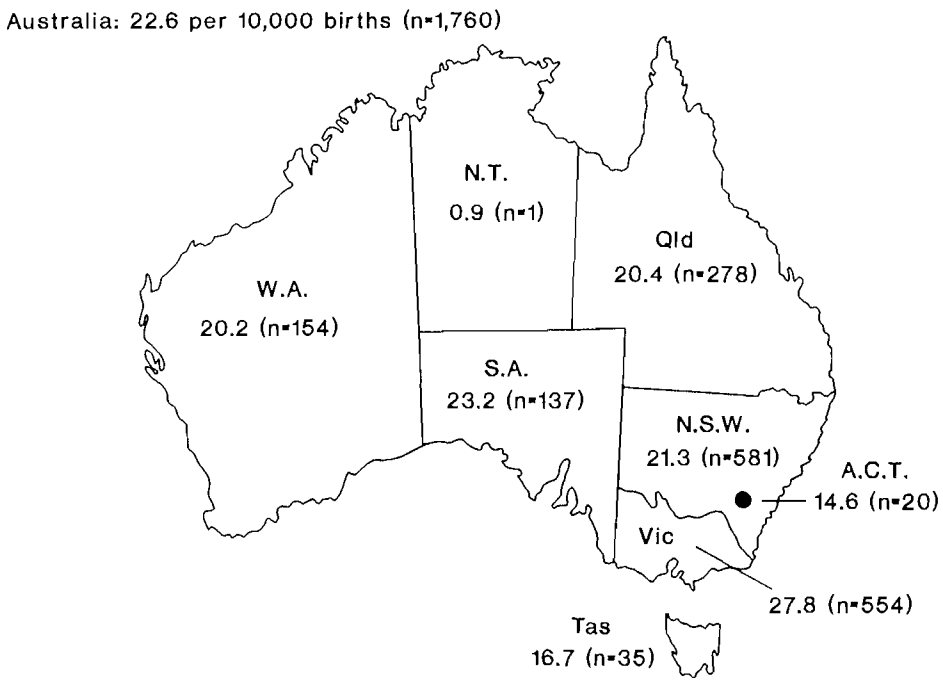

Table 66: *Hypospadias by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	338	163,050	20.7
20–24	1,224	640,160	19.1
25–29	1,972	1,029,355	19.2
30–34	1,310	665,613	19.7
35–39	329	207,031	15.9
40 and over	65	30,450	21.3
Not stated	42		
Plurality			
Singleton	4,772	2,675,229	17.8
Twin	162	62,315	26.0
Other multiple	7	2,438	28.7
Not stated	339		
Infant's sex			
Male	5,262	1,404,758	37.5
Female	4	1,331,788	0.0
Indeterminate	14		
Not stated	–		

Table 67: *Proportion of births with hypospadias by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	59	1.2
1000–2499	604	12.3
2500 and over	4,242	86.5
Not stated	375	
Gestational age (weeks)		
Less than 28	24	0.5
28–36	590	12.0
37 and over	4,295	87.5
Not stated	371	

2.16 Renal agenesis and dysgenesis

- Renal agenesis and dysgenesis are congenital malformations characterised by absence of kidneys or severely dysplastic kidneys and occurring bilaterally or unilaterally. Polycystic kidneys are not included in this group.

- The International Classification of Diseases code for renal agenesis and dysgenesis is 753.0.

- The national rate of renal agenesis and dysgenesis varied between 2.6 and 4.5 per 10,000 births in the period from 1982 to 1992 (Table 68, Figure 31).

- Among 977 infants with renal agenesis and dysgenesis and known outcome, 24.8 per cent were stillborn; 63.9 per cent of liveborn infants died in the neonatal period. Almost two-thirds of infants have bilateral agenesis and dysgenesis (Table 5), which is a lethal malformation.

- Associated major malformations were reported in 48.6 per cent of infants with renal agenesis and dysgenesis and another 4.9 per cent had a chromosomal abnormality.

- For births in 1990-1992, South Australia (5.4 per 10,000 births) had the highest rate and the Australian Capital Territory (no reported cases) the lowest (Table 69, Figure 32).

- Renal agenesis and dysgenesis was slightly more likely among births to younger than to older mothers (Table 70).

- Renal agenesis and dysgenesis in twins was more than twice the rate in singleton births, and other multiple births had an even higher rate (Table 70).

- The sex ratio of renal agenesis and dysgenesis was 192.8 male births per 100 female births (Table 70).

- Low birthweight (less than 2500g) occurred in 67.8 per cent of infants with renal agenesis and dysgenesis and known birthweight; 14.9 per cent were extremely low birthweight (Table 71).

- Preterm birth (less than 37 weeks) occurred in 55.6 per cent of infants with renal agenesis and dysgenesis and stated gestational age; 11.2 per cent were born before 28 weeks (Table 71).

Table 68: *Renal agenesis/dysgenesis by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	89	82	58	72	46	69	61	59	73	77	49	735
Stillbirths	18	16	16	28	19	19	19	33	23	31	20	242
Total births*	107	98	74	100	66	90	81	92	97	109	69	983
Induced abortions	–	–	–	2	2	–	8	8	4	3	6	33
Neonatal deaths	67	65	51	56	35	47	38	30	35	37	9	470
						Rate per 10,000 births						
Total births	4.5	4.1	3.1	4.1	2.7	3.7	3.3	3.6	3.7	4.2	2.6	3.6
						Number						
Isolated	36	45	38	41	25	45	35	43	48	60	41	457
Associated	65	51	31	53	38	40	42	44	43	44	27	478
Chromosomal	6	2	5	6	3	5	4	5	6	5	1	48
						Rate per 10,000 births						
Isolated	1.5	1.9	1.6	1.7	1.0	1.8	1.4	1.7	1.8	2.3	1.5	1.7
Associated	2.7	2.1	1.3	2.2	1.6	1.6	1.7	1.7	1.6	1.7	1.0	1.7
Chromosomal	0.3	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.0	0.2

** Total includes 'not stated'*

Table 69: *Renal agenesis/dysgenesis, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	63	51	40	19	18	4	–	4	199
Stillbirths	23	19	11	7	13	1	–	–	74
Total births*	87	70	51	26	32	5	–	4	275
Induced abortions	2	5	–	1	4	1	–	–	13
					Rate per 10,000 births				
Total births	3.2	3.5	3.7	3.4	5.4	2.4	–	3.6	3.5
					Number				
Isolated	38	39	38	13	14	3	–	4	149
Associated	45	27	12	11	17	2	–	–	114
Chromosomal	4	4	1	2	1	–	–	–	12
					Rate per 10,000 births				
Isolated	1.4	2.0	2.8	1.7	2.4	1.4	–	3.6	1.9
Associated	1.7	1.4	0.9	1.4	2.9	1.0	–	–	1.5
Chromosomal	0.1	0.2	0.1	0.3	0.2	–	–	–	0.2

** Total includes 'not stated'*

Figure 31: Renal agenesis/dysgenesis, Australia, 1982-1992

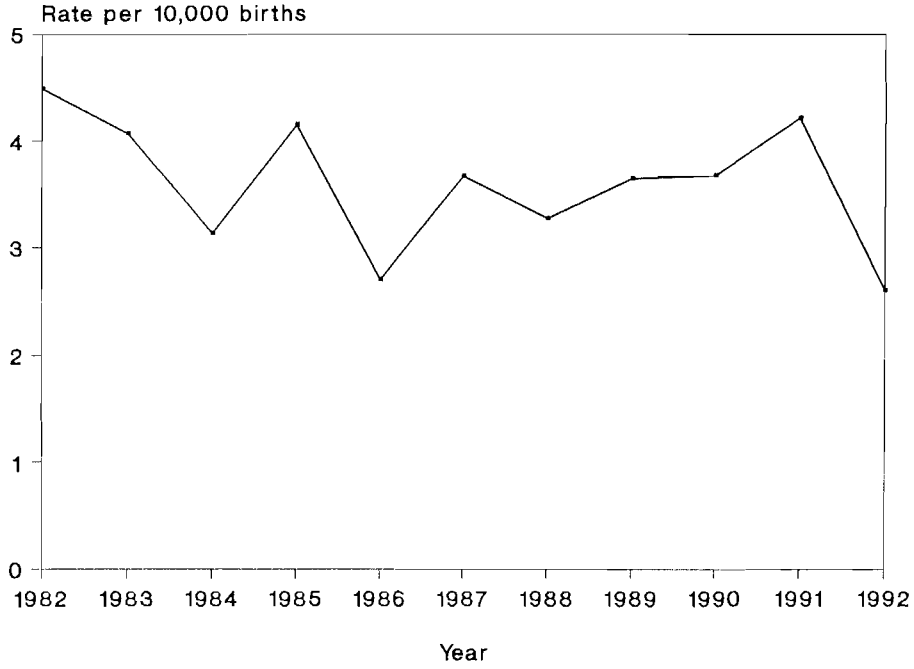

Figure 32: Renal agenesis/dysgenesis, States and Territories, 1990-1992

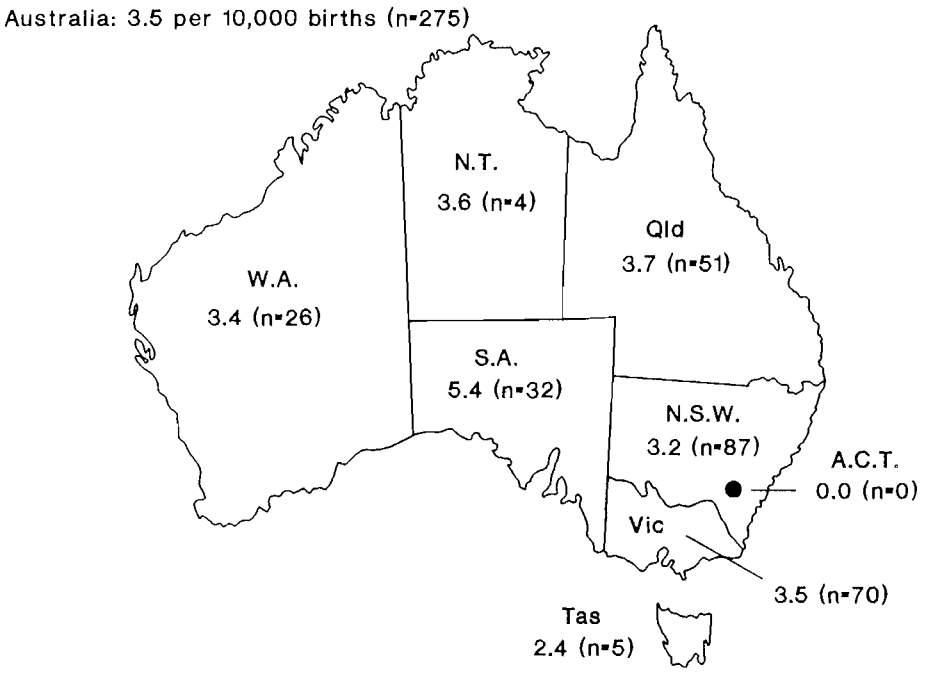

Table 70: *Renal agenesis/dysgenesis by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	78	163,050	4.8
20–24	282	640,160	4.4
25–29	333	1,029,355	3.2
30–34	207	665,613	3.1
35–39	60	207,031	2.9
40 and over	10	30,450	3.3
Not stated	13		
Plurality			
Singleton	897	2,675,229	3.4
Twin	50	62,315	8.0
Other multiple	3	2,438	12.3
Not stated	33		
Infant's sex			
Male	613	1,404,758	4.4
Female	318	1,331,788	2.4
Indeterminate	50		
Not stated	2		

Table 71: *Proportion of births with renal agenesis/dysgenesis by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	138	14.9
1000–2499	492	53.0
2500 and over	299	32.2
Not stated	54	
Gestational age (weeks)		
Less than 28	106	11.2
28–36	421	44.5
37 and over	420	44.4
Not stated	36	

2.17 Cystic kidney disease

- Cystic kidney disease includes a heterogenous group of malformations characterised by renal cysts of variable size and extent and described as polycystic or multicystic kidneys, occurring bilaterally or unilaterally.

- The International Classification of Diseases code for cystic kidney disease is 753.1. The BPA classification enables distinction between the various pathological types.

- The national rate of cystic kidney disease varied between 2.0 and 3.4 births in the period from 1982 to 1992 (Table 72, Figure 33).

- Among 712 infants with cystic kidney disease and known outcome, 14.5 per cent were stillborn; 42.7 per cent of liveborn infants died in the neonatal period.

- Associated major malformations were reported in 37.3 per cent of infants with cystic kidney disease and another 8.1 per cent had a chromosomal abnormality.

- For births in 1990-1992, the highest reported rates of cystic kidney disease were in the Northern Territory (6.4 per 10,000 births) and South Australia (5.2 per 10,000 births) and the lowest rates were in the Australian Capital Territory (0.7 per 10,000 births) and Tasmania (1.9 per 10,000 births) (Table 73, Figure 34).

- Cystic kidney disease showed little variation with maternal age, but there were slightly higher rates in births to mothers in the youngest and oldest age groups (Table 74).

- Cystic kidney disease was more common in twins and other multiple births than in singleton births (Table 74).

- The sex ratio of cystic kidney disease was 169.5 male births per 100 female births (Table 74).

- Low birthweight (less than 2500g) occurred in 44.2 per cent of infants with cystic kidney disease and known birthweight; 8.6 per cent were extremely low birthweight (Table 75).

- Preterm birth (less than 37 weeks) occurred in 47.1 per cent of infants with cystic kidney disease and stated gestational age; 10.8 per cent were born before 28 weeks (Table 75).

Table 72: *Cystic kidney disease by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	53	54	45	49	44	46	47	54	73	77	67	609
Stillbirths	13	8	12	13	9	3	8	11	5	12	9	103
Total births*	66	62	57	62	54	49	56	65	79	89	77	716
Induced abortions	–	–	–	–	3	4	3	2	4	3	7	26
Neonatal deaths	34	30	26	29	23	23	19	19	24	22	11	260
						Rate per 10,000 births						
Total births	2.8	2.6	2.4	2.6	2.2	2.0	2.3	2.6	3.0	3.4	2.9	2.6
						Number						
Isolated	33	24	27	28	31	20	29	37	48	57	57	391
Associated	28	30	21	30	20	24	21	20	26	29	18	267
Chromosomal	5	8	9	4	3	5	6	8	5	3	2	58
						Rate per 10,000 births						
Isolated	1.4	1.0	1.1	1.2	1.3	0.8	1.2	1.5	1.8	2.2	2.1	1.4
Associated	1.2	1.2	0.9	1.2	0.8	1.0	0.8	0.8	1.0	1.1	0.7	1.0
Chromosomal	0.2	0.3	0.4	0.2	0.1	0.2	0.2	0.3	0.2	0.1	0.1	0.2

** Total includes 'not stated'*

Table 73: *Cystic kidney disease, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	58	66	38	18	26	4	1	6	217
Stillbirths	6	10	2	2	5	–	–	1	26
Total births*	65	76	40	21	31	4	1	7	245
Induced abortions	–	5	–	4	5	–	–	–	14
					Rate per 10,000 births				
Total births	2.4	3.8	2.9	2.8	5.2	1.9	0.7	6.4	3.2
					Number				
Isolated	42	53	25	10	24	3	1	4	162
Associated	20	21	11	10	7	1	–	3	73
Chromosomal	3	2	4	1	–	–	–	–	10
					Rate per 10,000 births				
Isolated	1.5	2.7	1.8	1.3	4.1	1.4	0.7	3.6	2.1
Associated	0.7	1.1	0.8	1.3	1.2	0.5	–	2.7	0.9
Chromosomal	0.1	0.1	0.3	0.1	–	–	–	–	0.1

** Total includes 'not stated'*

Figure 33: Cystic kidney disease, Australia, 1982-1992

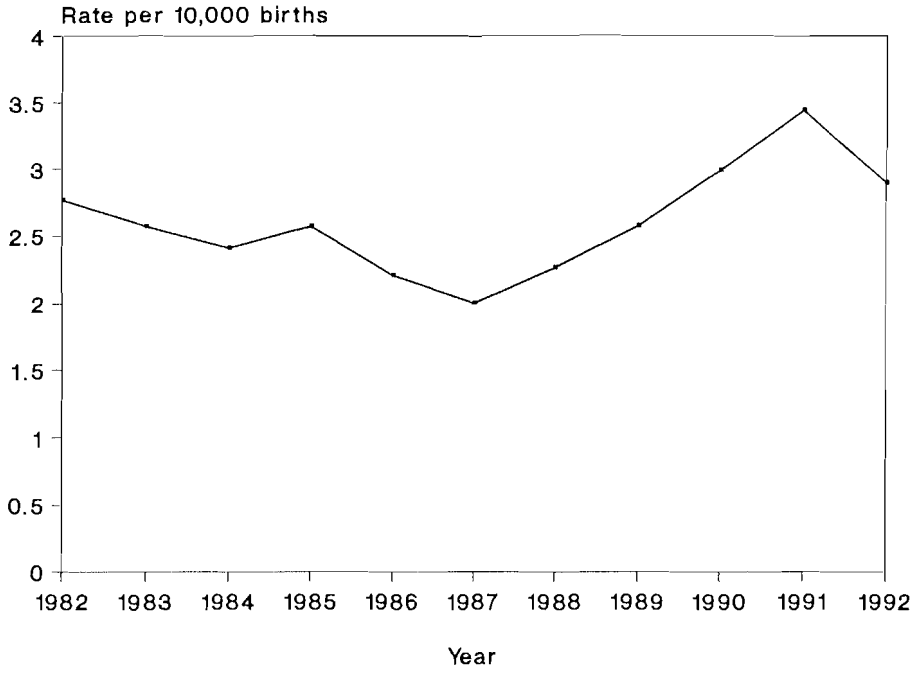

Figure 34: Cystic kidney disease, States and Territories, 1990-1992

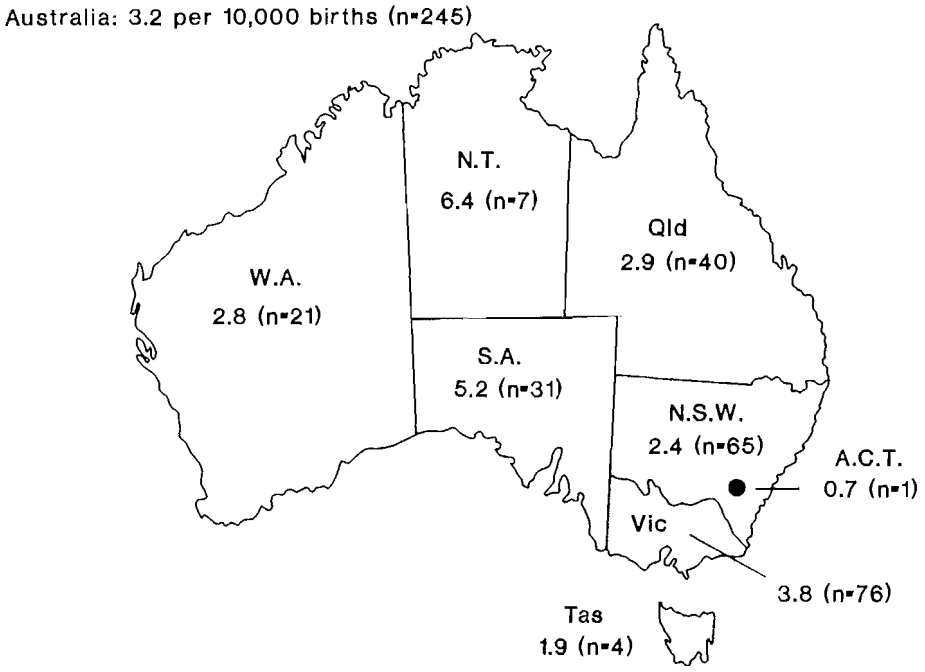

Table 74: *Cystic kidney disease by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	50	163,050	3.1
20–24	172	640,160	2.7
25–29	251	1,029,355	2.4
30–34	178	665,613	2.7
35–39	45	207,031	2.2
40 and over	9	30,450	3.0
Not stated	11		
Plurality			
Singleton	655	2,675,229	2.4
Twin	34	62,315	5.5
Other multiple	3	2,438	12.3
Not stated	24		
Infant's sex			
Male	444	1,404,758	3.2
Female	262	1,331,788	2.0
Indeterminate	10		
Not stated	–		

Table 75: *Proportion of births with cystic kidney disease by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	58	8.6
1000–2499	241	35.6
2500 and over	378	55.8
Not stated	39	
Gestational age (weeks)		
Less than 28	74	10.8
28–36	249	36.3
37 and over	363	52.9
Not stated	30	

2.18 Obstructive defects of renal pelvis and ureter

- This group of malformations includes hydronephrosis and other obstructive defects of the renal pelvis and ureter that result in dilatation of the renal collecting systems, occurring bilaterally or unilaterally.

- The International Classification of Diseases code for obstructive defects of renal pelvis and ureter is 753.2.

- The national rate of obstructive defects of renal pelvis and ureter has more than doubled from 3.2 per 10,000 births in 1982 to more than 7 per 10,000 births in the early 1990s. Table 76, Figure 35). These malformations are increasingly detected by prenatal ultrasound screening.

- Among 1,352 infants with obstructive defects of renal pelvis and ureter and known outcome, 6.9 per cent were stillborn; 15.5 per cent of liveborn infants died in the neonatal period.

- Associated major malformations were reported in 29.9 per cent of infants with obstructive defects of renal pelvis and ureter and another 7.1 per cent had a chromosomal abnormality.

- For births in 1990-1992, the reported rates varied markedly from a high of 11.2 per 10,000 births in Victoria to a low of 1.9 per 10,000 births in Tasmania (Table 77, Figure 36).

- Obstructive defects of renal pelvis and ureter showed relatively little variation with maternal age, but the highest age-specific rate was in births to mothers of 40 years and over (Table 78).

- Obstructive defects of renal pelvis and ureter was more common in twins than in singleton births (Table 78).

- The sex ratio of obstructive defects of renal pelvis and ureter was 252.8 male births per 100 female births (Table 78).

- Low birthweight (less than 2500g) occurred in 21.9 per cent of infants with obstructive defects of renal pelvis and ureter and known birthweight; 4.2 per cent were extremely low birthweight (Table 79).

- Preterm birth (less than 37 weeks) occurred in 23.4 per cent of infants with obstructive defects of renal pelvis and ureter and stated gestational age; 4.1 per cent were born before 28 weeks (Table 79).

Table 76: *Obstructive defects of renal pelvis and ureter by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	70	72	71	70	84	107	100	135	184	185	181	1,259
Stillbirths	7	8	12	11	8	9	7	6	7	9	9	93
Total births*	77	80	83	81	92	116	107	141	193	196	190	1,356
Induced abortions	–	–	–	–	1	–	–	4	5	–	3	13
Neonatal deaths	26	28	31	19	20	16	15	10	9	10	11	195
						Rate per 10,000 births						
Total births	3.2	3.3	3.5	3.4	3.8	4.7	4.3	5.6	7.3	7.6	7.2	5.0
						Number						
Isolated	28	29	37	40	46	67	74	95	138	148	152	854
Associated	42	41	40	32	35	40	26	36	46	39	29	406
Chromosomal	7	10	6	9	11	9	7	10	9	9	9	96
						Rate per 10,000 births						
Isolated	1.2	1.2	1.6	1.7	1.9	2.7	3.0	3.8	5.2	5.7	5.7	3.1
Associated	1.8	1.7	1.7	1.3	1.4	1.6	1.0	1.4	1.7	1.5	1.1	1.5
Chromosomal	0.3	0.4	0.3	0.4	0.4	0.4	0.3	0.4	0.3	0.3	0.3	0.4

** Total includes 'not stated'*

Table 77: *Obstructive defects of renal pelvis and ureter, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	168	213	81	29	36	3	10	10	550
Stillbirths	4	7	1	5	3	1	3	1	25
Total births*	173	223	82	34	39	4	13	11	579
Induced abortions	1	4	–	1	2	–	–	–	8
					Rate per 10,000 births				
Total births	6.4	11.2	6.0	4.5	6.6	1.9	9.5	10.0	7.4
					Number				
Isolated	127	179	71	16	24	4	11	6	438
Associated	40	31	11	14	12	–	2	4	114
Chromosomal	6	13	–	4	3	–	–	1	27
					Rate per 10,000 births				
Isolated	4.7	9.0	5.2	2.1	4.1	1.9	8.0	5.5	5.6
Associated	1.5	1.6	0.8	1.8	2.0	–	1.5	3.6	1.5
Chromosomal	0.2	0.7	–	0.5	0.5	–	–	0.9	0.3

** Total includes 'not stated'*

Figure 35: Obstructive defects of renal pelvis and ureter, Australia, 1982-1992

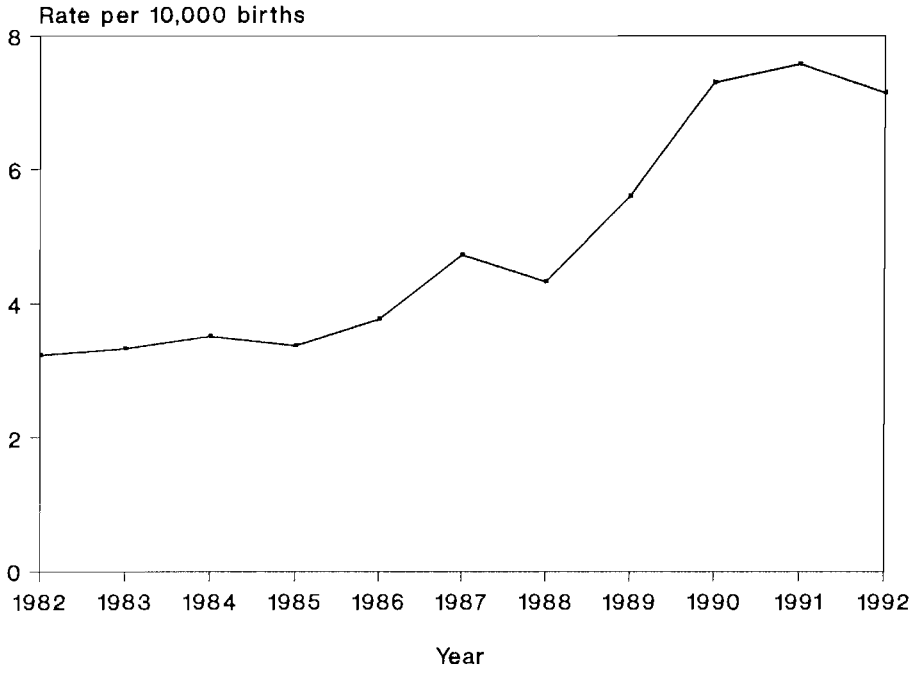

Figure 36: Obstructive defects of renal pelvis and ureter, States and Territories, 1990-1992

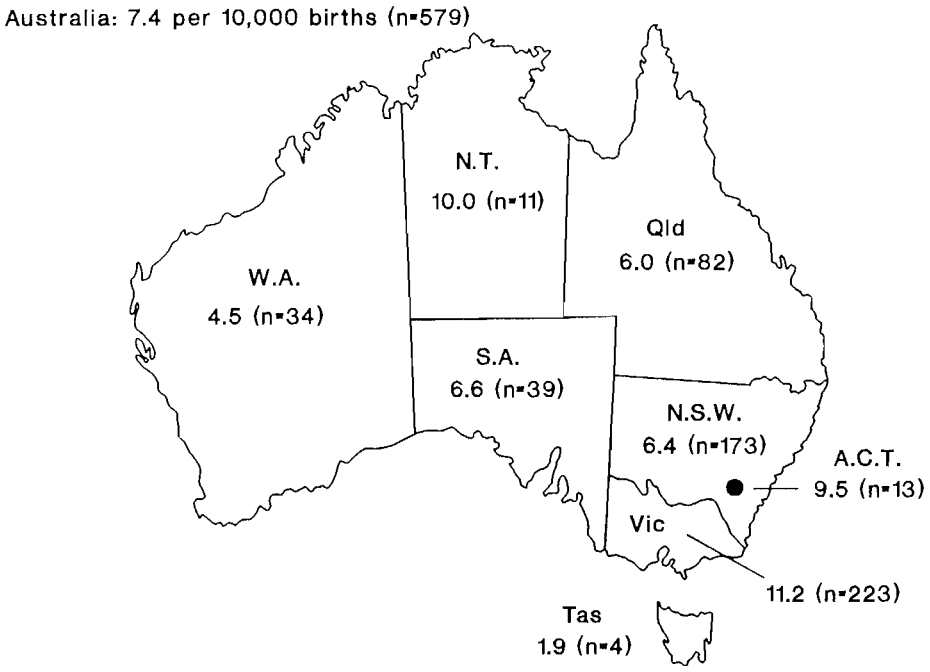

Table 78: *Obstructive defects of renal pelvis and ureter by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	76	163,050	4.7
20–24	292	640,160	4.6
25–29	476	1,029,355	4.6
30–34	344	665,613	5.2
35–39	108	207,031	5.2
40 and over	19	30,450	6.2
Not stated	41		
Plurality			
Singleton	1,268	2,675,229	4.7
Twin	44	62,315	7.1
Other multiple	–	2,438	–
Not stated	44		
Infant's sex			
Male	963	1,404,758	6.9
Female	381	1,331,788	2.9
Indeterminate	9		
Not stated	3		

Table 79: *Proportion of births with obstructive defects of renal pelvis and ureter by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	54	4.2
1000–2499	231	17.8
2500 and over	1,014	78.1
Not stated	57	
Gestational age (weeks)		
Less than 28	54	4.1
28–36	252	19.3
37 and over	1,000	76.6
Not stated	50	

2.19 Congenital dislocation of the hip

- Congenital dislocation of the hip is a condition in which the femoral head is either displaced or displaceable from the acetabulum of the pelvis. Many newborn infants have clinical findings such as the so-called 'clicky hip' that may be confused with congenital dislocation of the hip; there may be considerable variation in the terminology used to describe these findings.

- The International Classification of Diseases code for congenital dislocation of the hip is 754.3.

- The national rate of congenital dislocation of the hip varied between 18.6 and 25.4 births in the period from 1982 to 1992 (Table 80, Figure 37).

- Among 5,947 infants with congenital dislocation of the hip and known outcome, 0.4 per cent were stillborn; 1.3 per cent of liveborn infants died in the neonatal period. These deaths were due to other associated major malformations.

- Associated major malformations were reported in 5.8 per cent of infants with congenital dislocation of the hip and another 0.7 per cent had a chromosomal abnormality.

- Because of differences in ascertainment and in the terms used to describe congenital dislocation of the hip, it is known to vary markedly in different regions. For births in 1990-1992, the reported rates of congenital dislocation of the hip were highest in Queensland (45.8 per 10,000 births) and South Australia (35.0 per 10,000 births) and lowest in the Australian Capital Territory (no cases) and Tasmania (6.2 per 10,000 births) (Table 81, Figure 38).

- Congenital dislocation of the hip showed relatively little variation with maternal age (Table 82).

- Congenital dislocation of the hip was reported less often in twins than in singleton births (Table 82).

- The sex ratio of congenital dislocation of the hip was 30.7 male births per 100 female births (Table 82).

- Low birthweight (less than 2500g) occurred in 4.6 per cent of infants with congenital dislocation of the hip and known birthweight; 0.2 per cent were extremely low birthweight (Table 83).

- Preterm birth (less than 37 weeks) occurred in 4.3 per cent of infants with congenital dislocation of the hip and stated gestational age; 0.2 per cent were born before 28 weeks (Table 83).

Table 80: *Congenital dislocation of hip by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	483	517	470	446	524	509	546	569	666	629	564	5,923
Stillbirths	2	2	1	3	1	1	3	1	3	1	6	24
Total births*	485	519	471	449	525	510	549	572	670	630	571	5,951
Induced abortions	–	–	–	–	–	–	–	1	–	–	–	1
Neonatal deaths	7	13	9	6	5	6	7	9	8	3	5	78
						Rate per 10,000 births						
Total births	20.3	21.5	19.9	18.6	21.4	20.8	22.2	22.7	25.4	24.4	21.5	21.7
						Number						
Isolated	449	481	440	418	494	477	512	534	616	602	542	5,565
Associated	31	35	27	26	27	27	35	36	47	27	26	344
Chromosomal	5	3	4	5	4	6	2	2	7	1	3	42
						Rate per 10,000 births						
Isolated	18.8	20.0	18.6	17.3	20.2	19.4	20.7	21.2	23.3	23.3	20.4	20.3
Associated	1.3	1.5	1.1	1.1	1.1	1.1	1.4	1.4	1.8	1.0	1.0	1.3
Chromosomal	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.3	0.0	0.1	0.2

** Total includes 'not stated'*

Table 81: *Congenital dislocation of hip, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	369	556	622	70	205	7	–	30	1,859
Stillbirths	1	1	–	1	1	6	–	–	10
Total births*	370	557	623	71	207	13	–	30	1,871
Induced abortions	–	–	–	–	–	–	–	–	–
					Rate per 10,000 births				
Total births	13.6	28.0	45.8	9.3	35.0	6.2	–	27.3	24.1
					Number				
Isolated	326	541	602	55	199	13	–	24	1,760
Associated	39	15	19	14	8	–	–	5	100
Chromosomal	5	1	2	2	–	–	–	1	11
					Rate per 10,000 births				
Isolated	12.0	27.2	44.3	7.2	33.6	6.2	–	21.8	22.6
Associated	1.4	0.8	1.4	1.8	1.4	–	–	4.5	1.3
Chromosomal	0.2	0.1	0.1	0.3	–	–	–	0.9	0.1

** Total includes 'not stated'*

Figure 37: Congenital dislocation of hip, Australia, 1982-1992

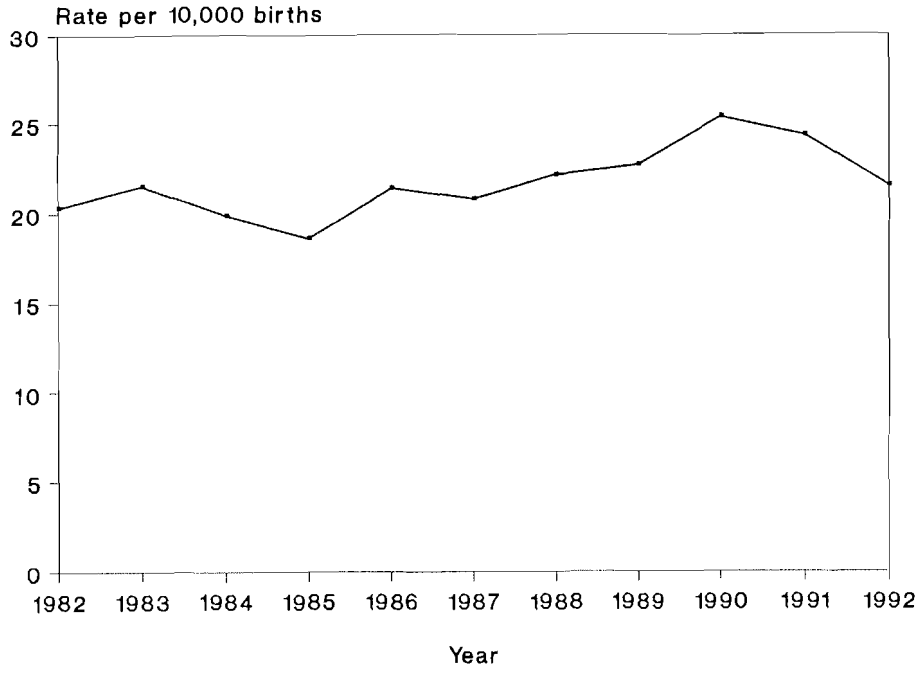

Figure 38: Congenital dislocation of hip, States and Territories, 1990-1992

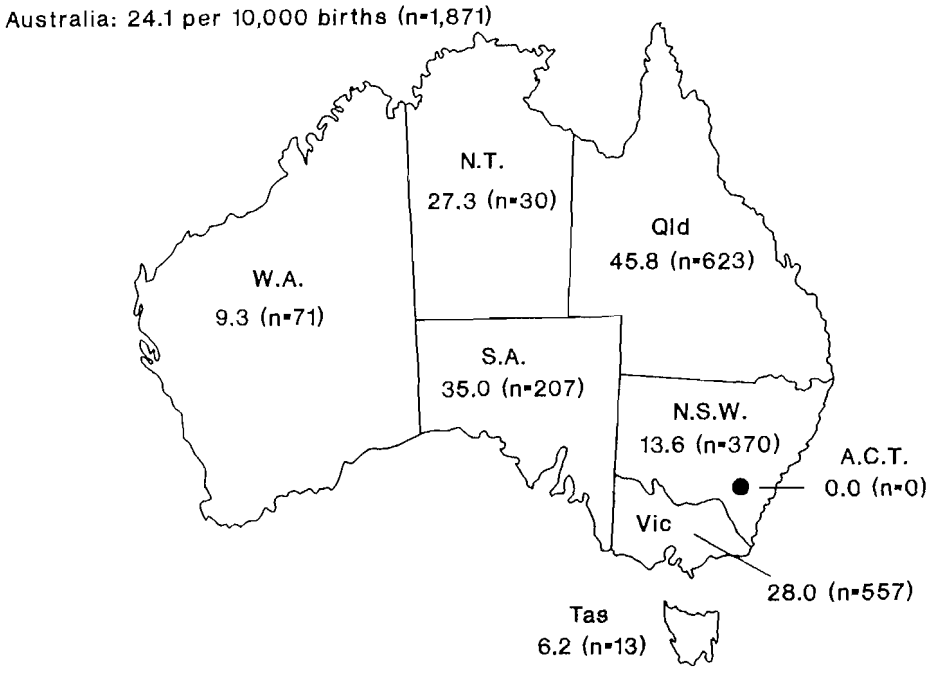

Table 82: *Congenital dislocation of hip by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	292	163,050	17.9
20–24	1,201	640,160	18.8
25–29	2,276	1,029,355	22.1
30–34	1,560	665,613	23.4
35–39	490	207,031	23.7
40 and over	62	30,450	20.4
Not stated	70		
Plurality			
Singleton	5,231	2,675,229	19.6
Twin	42	62,315	6.7
Other multiple	–	2,438	–
Not stated	678		
Infant's sex			
Male	1,395	1,404,758	9.9
Female	4,542	1,331,788	34.1
Indeterminate	6		
Not stated	8		

Table 83: *Proportion of births with congenital dislocation of hip by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	13	0.2
1000–2499	230	4.4
2500 and over	5,003	95.4
Not stated	705	
Gestational age (weeks)		
Less than 28	12	0.2
28–36	214	4.1
37 and over	5,019	95.7
Not stated	706	

2.20 Limb reduction defects

- Limb reduction defects are congenital malformations characterised by total or partial absence or severe hypoplasia of skeletal structures of the limbs. These are heterogeneous in type and are often analysed in the following groups: preaxial longitudinal, postaxial longitudinal, transverse, intercalary, multiple and unspecified.

- The International Classification of Diseases codes for limb reduction defects are 755.2-755.4. The NPSU coding of limb reduction defects has been modified to include the groups specified above.

- The national rate of limb reduction defects varied between 3.9 and 5.2 births in the period from 1982 to 1992 (Table 84, Figure 39).

- Among 1,252 infants with limb reduction defects and known outcome, 12.2 per cent were stillborn; 14.9 per cent of liveborn infants died in the neonatal period. These deaths were due to other associated major malformations or other causes.

- Associated major malformations were reported in 31.6 per cent of infants with limb reduction defects and another 6.8 per cent had a chromosomal abnormality.

- For births in 1990-1992, South Australia (8.3 per 10,000 births) had the highest rate of limb reduction defects, and Tasmania (2.9 per 10,000 births) had the lowest rate (Table 85, Figure 40).

- There were slightly higher rates of limb reduction defects in births to mothers in the youngest and oldest age groups (Table 86).

- Limb reduction defects were more common in twins than in singleton births (Table 86).

- The sex ratio of limb reduction defects was 142.4 male births per 100 female births (Table 86).

- Low birthweight (less than 2500g) occurred in 34.4 per cent of infants with limb reduction defects and known birthweight; 8.8 per cent were extremely low birthweight (Table 87).

- Preterm birth (less than 37 weeks) occurred in 27.3 per cent of infants with limb reduction defects and stated gestational age; 6.2 per cent were born before 28 weeks (Table 87).

Table 84: *Limb reduction defects by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	109	98	79	84	100	83	105	115	99	113	114	1,099
Stillbirths	8	11	18	9	9	17	14	16	21	13	17	153
Total births*	117	109	97	93	109	100	120	132	120	128	133	1,258
Induced abortions	–	–	1	2	–	–	6	7	5	5	8	34
Neonatal deaths	29	19	16	12	17	20	8	15	13	8	7	164
						Rate per 10,000 births						
Total births	4.9	4.5	4.1	3.9	4.4	4.1	4.8	5.2	4.5	4.9	5.0	4.6
						Number						
Isolated	66	65	53	59	68	55	89	80	68	87	85	775
Associated	45	36	42	26	28	36	27	40	44	33	41	398
Chromosomal	6	8	2	8	13	9	4	12	8	8	7	85
						Rate per 10,000 births						
Isolated	2.8	2.7	2.2	2.4	2.8	2.2	3.6	3.2	2.6	3.4	3.2	2.8
Associated	1.9	1.5	1.8	1.1	1.1	1.5	1.1	1.6	1.7	1.3	1.5	1.5
Chromosomal	0.3	0.3	0.1	0.3	0.5	0.4	0.2	0.5	0.3	0.3	0.3	0.3

** Total includes 'not stated'*

Table 85: *Limb reduction defects, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	129	65	61	22	37	4	4	4	326
Stillbirths	10	18	6	5	9	2	1	–	51
Total births*	140	83	67	27	49	6	5	4	381
Induced abortions	4	6	–	1	6	–	1	–	18
					Rate per 10,000 births				
Total births	5.1	4.2	4.9	3.5	8.3	2.9	3.6	3.6	4.9
					Number				
Isolated	84	53	47	16	31	5	2	2	240
Associated	49	23	16	9	17	1	1	2	118
Chromosomal	7	7	4	2	1	–	2	–	23
					Rate per 10,000 births				
Isolated	3.1	2.7	3.5	2.1	5.2	2.4	1.5	1.8	3.1
Associated	1.8	1.2	1.2	1.2	2.9	0.5	0.7	1.8	1.5
Chromosomal	0.3	0.4	0.3	0.3	0.2	–	1.5	–	0.3

** Total includes 'not stated'*

Figure 39: Limb reduction defects, Australia, 1982-1992

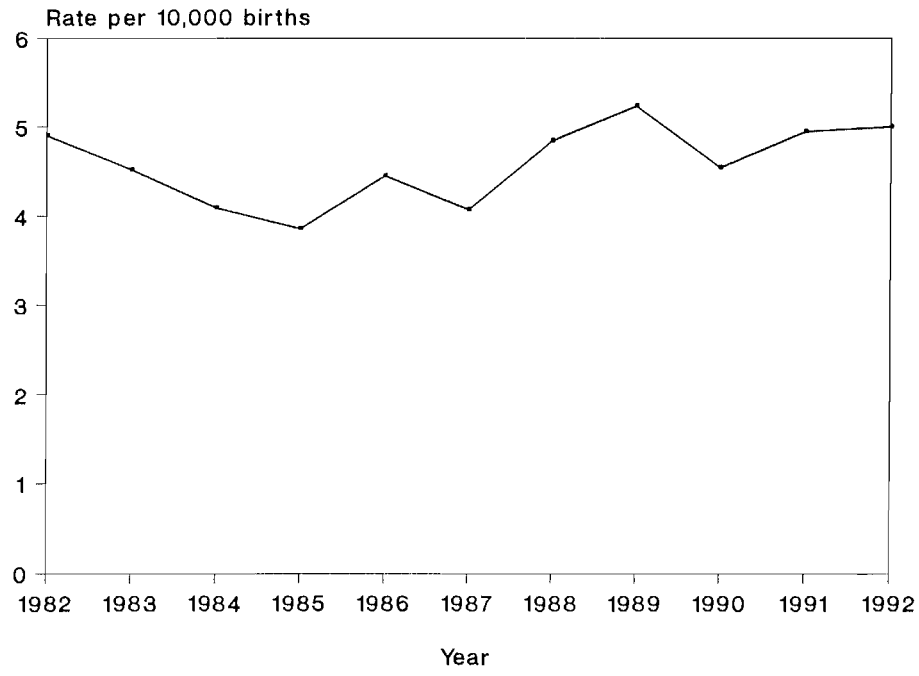

Figure 40: Limb reduction defects, States and Territories, 1990-1992

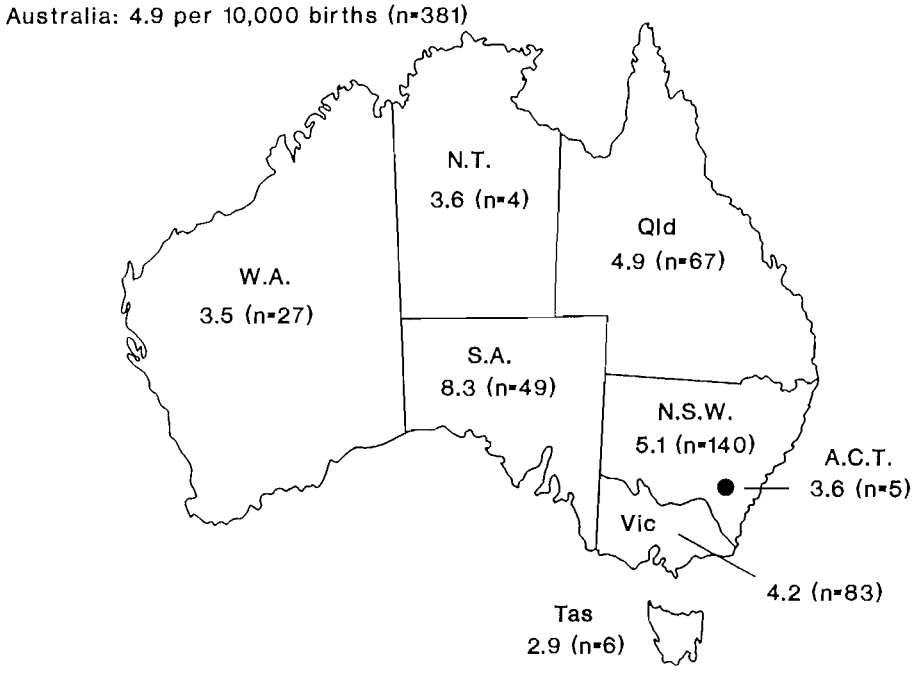

Table 86: *Limb reduction defects by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	93	163,050	5.7
20–24	307	640,160	4.8
25–29	439	1,029,355	4.3
30–34	303	665,613	4.6
35–39	90	207,031	4.3
40 and over	16	30,450	5.3
Not stated	10		
Plurality			
Singleton	1,128	2,675,229	4.2
Twin	47	62,315	7.5
Other multiple	1	2,438	4.1
Not stated	82		
Infant's sex			
Male	725	1,404,758	5.2
Female	509	1,331,788	3.8
Indeterminate	24		
Not stated	–		

Table 87: *Proportion of births with limb reduction defects by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	101	8.8
1000–2499	295	25.6
2500 and over	756	65.6
Not stated	106	
Gestational age (weeks)		
Less than 28	72	6.2
28–36	245	21.1
37 and over	844	72.7
Not stated	97	

2.21 Diaphragmatic hernia

- Diaphragmatic hernia is a congenital malformation characterised by herniation into the thorax of abdominal contents through a defect of the diaphragm, but excluding eventration of the diaphragm.
- The International Classification of Diseases code for diaphragmatic hernia is 756.6.
- The national rate of diaphragmatic hernia varied between 2.1 and 3.8 per 10,000 births in the period from 1982 to 1992, the highest rate occurring in 1991 (Table 88, Figure 41).
- Among 797 infants with diaphragmatic hernia and known outcome, 9.9 per cent were stillborn; 57.0 per cent of liveborn infants died in the neonatal period.
- Associated major malformations were reported in 26.2 per cent of infants with diaphragmatic hernia and another 5.9 per cent had a chromosomal abnormality.
- For births in 1990-1992, the reported rates of diaphragmatic hernia were highest in Tasmania (4.8 per 10,000 births) and lowest in the Northern Territory (0.9 per 10,000 births) (Table 89, Figure 42).
- Diaphragmatic hernia was slightly more common among births to younger (3.8 per 10,000 births) and older (4.9 per 10,000 births) mothers (Table 90).
- Diaphragmatic hernia was slightly more common in twins than in singleton births (Table 90).
- The sex ratio of diaphragmatic hernia was 130.7 male births per 100 female births (Table 90).
- Low birthweight (less than 2500g) occurred in 33.0 per cent of infants with diaphragmatic hernia and known birthweight; 7.1 per cent were extremely low birthweight (Table 91).
- Preterm birth (less than 37 weeks) occurred in 28.8 per cent of infants with diaphragmatic hernia and stated gestational age; 5.0 per cent were born before 28 weeks (Table 91).

Table 88: *Diaphragmatic hernia by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	51	58	60	69	67	69	49	65	77	83	70	718
Stillbirths	5	6	6	4	10	5	4	4	8	15	12	79
Total births*	56	64	66	73	77	74	53	69	85	98	82	797
Induced abortions	–	–	–	1	2	–	2	1	5	6	8	25
Neonatal deaths	36	34	34	46	38	50	27	37	38	42	27	409
						Rate per 10,000 births						
Total births	2.3	2.7	2.8	3.0	3.1	3.0	2.1	2.7	3.2	3.8	3.1	2.9
						Number						
Isolated	29	49	44	43	52	43	28	51	63	74	65	541
Associated	24	10	19	28	21	28	17	16	19	16	11	209
Chromosomal	3	5	3	2	4	3	8	2	3	8	6	47
						Rate per 10,000 births						
Isolated	1.2	2.0	1.9	1.8	2.1	1.8	1.1	2.0	2.4	2.9	2.4	2.0
Associated	1.0	0.4	0.8	1.2	0.9	1.1	0.7	0.6	0.7	0.6	0.4	0.8
Chromosomal	0.1	0.2	0.1	0.1	0.2	0.1	0.3	0.1	0.1	0.3	0.2	0.2

** Total includes 'not stated'*

Table 89: *Diaphragmatic hernia, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	72	60	50	20	16	9	2	1	230
Stillbirths	7	16	3	3	4	1	1	–	35
Total births*	79	76	53	23	20	10	3	1	265
Induced abortions	1	9	–	1	8	–	–	–	19
					Rate per 10,000 births				
Total births	2.9	3.8	3.9	3.0	3.4	4.8	2.2	0.9	3.4
					Number				
Isolated	59	56	49	17	13	7	1	–	202
Associated	16	14	2	5	5	3	–	1	46
Chromosomal	4	6	2	1	2	–	2	–	17
					Rate per 10,000 births				
Isolated	2.2	2.8	3.6	2.2	2.2	3.3	0.7	–	2.6
Associated	0.6	0.7	0.1	0.7	0.8	1.4	–	0.9	0.6
Chromosomal	0.1	0.3	0.1	0.1	0.3	–	1.5	–	0.2

** Total includes 'not stated'*

Figure 41: Diaphragmatic hernia, Australia, 1982-1992

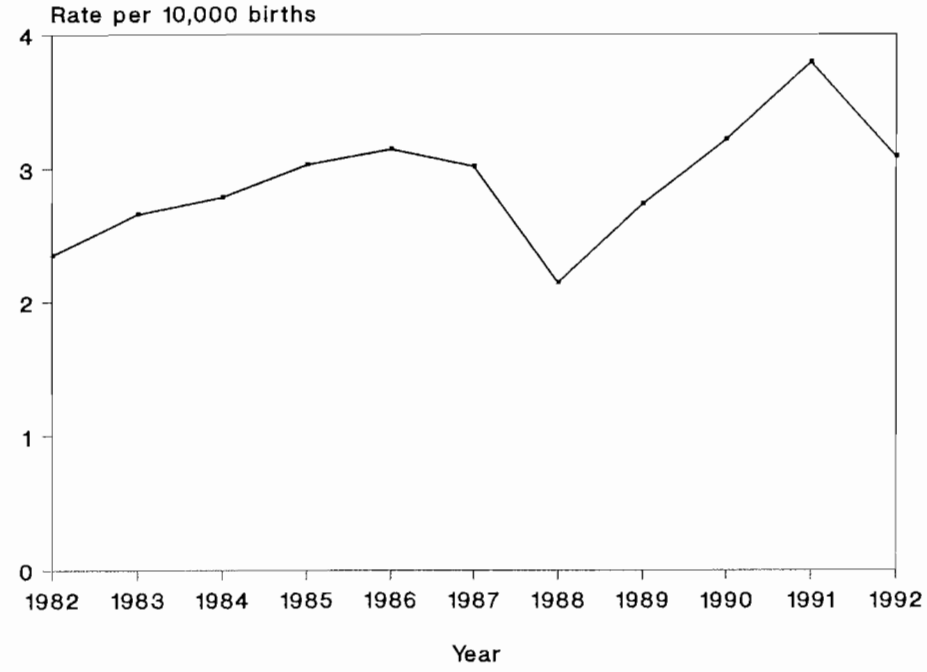

Figure 42: Diaphragmatic hernia,
States and Territories, 1990-1992

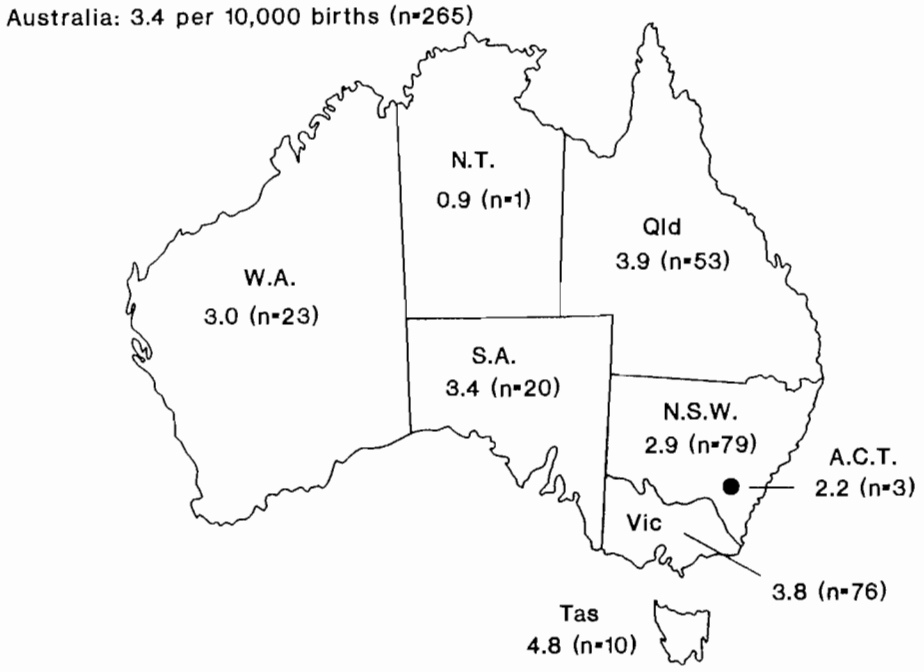

Table 90: *Diaphragmatic hernia by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	62	163,050	3.8
20–24	168	640,160	2.6
25–29	265	1,029,355	2.6
30–34	201	665,613	3.0
35–39	69	207,031	3.3
40 and over	15	30,450	4.9
Not stated	17		
Plurality			
Singleton	742	2,675,229	2.8
Twin	22	62,315	3.5
Other multiple	2	2,438	8.2
Not stated	31		
Infant's sex			
Male	447	1,404,758	3.2
Female	342	1,331,788	2.6
Indeterminate	7		
Not stated	1		

Table 91: *Proportion of births with diaphragmatic hernia by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	50	7.1
1000–2499	183	25.9
2500 and over	474	67.0
Not stated	90	
Gestational age (weeks)		
Less than 28	38	5.0
28–36	181	23.8
37 and over	541	71.2
Not stated	37	

2.22 Exomphalos

- Exomphalos is a congenital malformation characterised by herniation of abdominal contents through the umbilical insertion and covered by a membrane which may or may not remain intact. Omphalocele is another term used to describe the same malformation.

- In the International Classification of Diseases, exomphalos is included under the code for anomalies of the abdominal wall (756.7). The British Paediatric Association code is 756.70, enabling distinction between exomphalos and other abdominal wall defects such as gastroschisis.

- The national rate of exomphalos varied between 1.6 and 2.7 birth in the period from 1982 and 1992 (Table 92, Figure 43).

- Among 606 infants with exomphalos and known outcome, 30.5 per cent were stillborn; 33.5 per cent of liveborn infants died in the neonatal period.

- Associated major malformations were reported in 40.6 per cent of infants with exomphalos and another 14.4 per cent had a chromosomal abnormality.

- For births in 1990-1992, the reported rates of exomphalos were highest in South Australia (3.0 per 10,000 births) and lowest in the Northern Territory (no cases) (Table 93, Figure 44).

- Exomphalos was more than twice as common among births to mothers aged 40 years and over than to mothers in other age groups (Table 94).

- Exomphalos was more common in twins than in singleton births (Table 94).

- The sex ratio of exomphalos was 128.9 male births per 100 female births (Table 94).

- Low birthweight (less than 2500g) occurred in 57.9 per cent of infants with exomphalos and known birthweight; 21.3 per cent were extremely low birthweight (Table 95).

- Preterm birth (less than 37 weeks) occurred in 52.7 per cent of infants with exomphalos and stated gestational age; 16.3 per cent were born before 28 weeks (Table 95).

Table 92: *Exomphalos by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	30	26	46	48	51	32	33	39	48	36	32	421
Stillbirths	19	13	14	14	15	17	15	23	22	17	16	185
Total births*	49	39	60	62	66	49	49	62	71	56	48	611
Induced abortions	–	–	–	1	2	4	4	13	10	12	13	59
Neonatal deaths	9	13	16	21	23	11	11	13	11	10	3	141
						Rate per 10,000 births						
Total births	2.1	1.6	2.5	2.6	2.7	2.0	2.0	2.5	2.7	2.2	1.8	2.2
						Number						
Isolated	15	13	27	37	32	18	22	28	36	25	22	275
Associated	30	22	27	17	20	25	19	22	27	24	15	248
Chromosomal	4	4	6	8	14	6	8	12	8	7	11	88
						Rate per 10,000 births						
Isolated	0.6	0.5	1.1	1.5	1.3	0.7	0.9	1.1	1.4	1.0	0.8	1.0
Associated	1.3	0.9	1.1	0.7	0.8	1.0	0.8	0.9	1.0	0.9	0.6	0.9
Chromosomal	0.2	0.2	0.3	0.3	0.6	0.2	0.3	0.5	0.3	0.3	0.4	0.3

** Total includes 'not stated'*

Table 93: *Exomphalos, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	36	32	18	18	9	2	1	–	116
Stillbirths	15	21	9	1	6	1	2	–	55
Total births*	52	53	27	19	18	3	3	–	175
Induced abortions	10	14	1	4	6	–	–	–	35
					Rate per 10,000 births				
Total births	1.9	2.7	2.0	2.5	3.0	1.4	2.2	–	2.3
					Number				
Isolated	23	27	13	8	7	2	3	–	83
Associated	22	19	7	9	9	–	–	–	66
Chromosomal	7	7	7	2	2	1	–	–	26
					Rate per 10,000 births				
Isolated	0.8	1.4	1.0	1.0	1.2	1.0	2.2	–	1.1
Associated	0.8	1.0	0.5	1.2	1.5	–	–	–	0.8
Chromosomal	0.3	0.4	0.5	0.3	0.3	0.5	–	–	0.3

** Total includes 'not stated'*

Figure 43: Exomphalos, Australia, 1982-1992

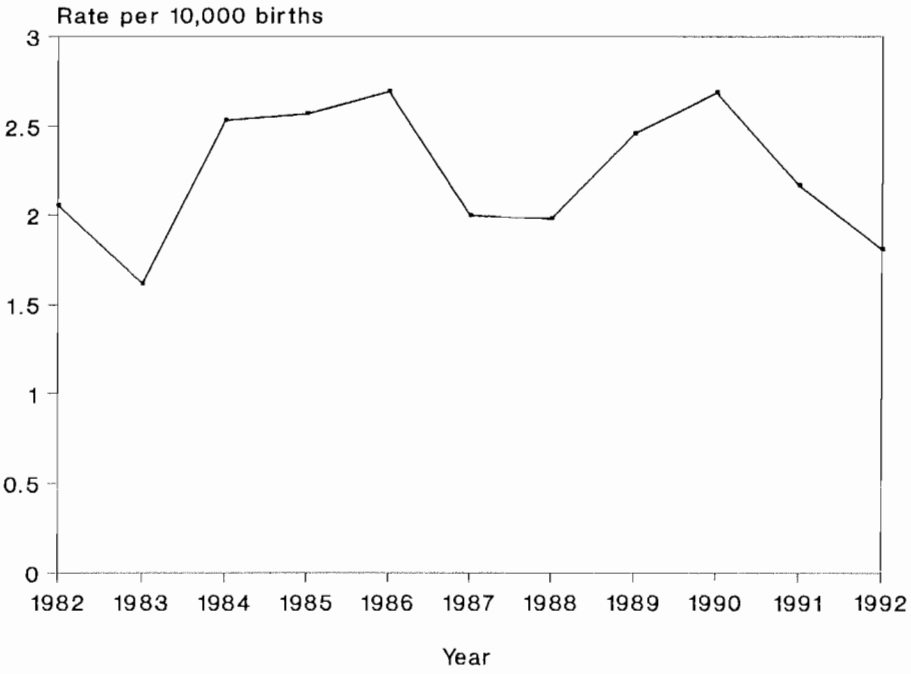

Figure 44: Exomphalos, States and Territories, 1990-1992

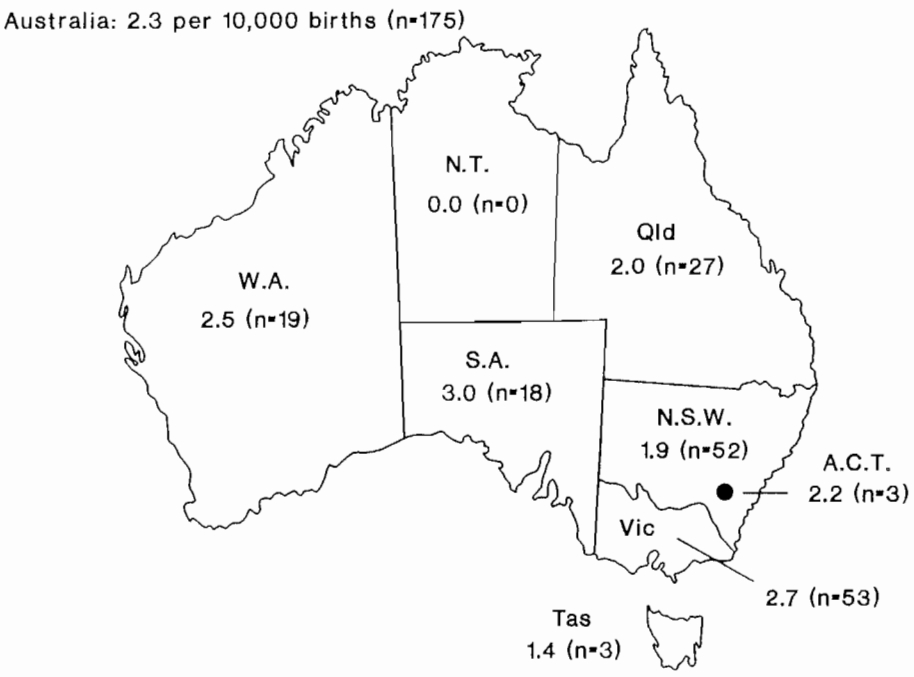

Table 94: *Exomphalos by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	38	163,050	2.3
20–24	124	640,160	1.9
25–29	212	1,029,355	2.1
30–34	158	665,613	2.4
35–39	56	207,031	2.7
40 and over	17	30,450	5.6
Not stated	6		
Plurality			
Singleton	562	2,675,229	2.1
Twin	30	62,315	4.8
Other multiple	2	2,438	8.2
Not stated	17		
Infant's sex			
Male	330	1,404,758	2.3
Female	256	1,331,788	1.9
Indeterminate	25		
Not stated	–		

Table 95: *Proportion of births with exomphalos by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	118	21.3
1000–2499	203	36.6
2500 and over	233	42.1
Not stated	57	
Gestational age (weeks)		
Less than 28	95	16.3
28–36	213	36.5
37 and over	276	47.3
Not stated	27	

2.23 Gastroschisis

- Gastroschisis is a congenital malformation (para-umbilical hernia) characterised by visceral herniation through an abdominal wall defect lateral to an intact umbilical cord.
- In the International Classification of Diseases, gastroschisis is included under the code for anomalies of the abdominal wall (756.7). The British Paediatric Association code is 756.71, enabling distinction between gastroschisis and other abdominal wall defects such as exomphalos.
- The national rate of gastroschisis varied between 0.7 and 1.7 per 10,000 births in the period between 1982 and 1992, the highest rate occurring in 1992 (Table 96, Figure 45).
- Among 312 infants with gastroschisis and known outcome, 11.9 per cent were stillborn; 9.8 per cent of liveborn infants died in the neonatal period.
- Associated major malformations were reported in 20.7 per cent of infants with gastroschisis and another 0.3 per cent had a chromosomal abnormality.
- For births in 1990-1992, the reported rates of gastroschisis were highest in Western Australia (2.1 per 10,000 births) and lowest in the Australian Capital Territory and the Northern Territory, which had no cases (Table 97, Figure 46).
- Gastroschisis varied markedly with maternal age (Table 98). The highest rate (5.9 per 10,000 births) occurred in births to teenage mothers and the lowest rates in births to mothers aged 40 years and over (no cases) and to mothers aged 35-39 years (0.2 per 10,000 births).
- Gastroschisis was slightly more common in twins than in singleton births (Table 98).
- The sex ratio of gastroschisis was 110.2 male births per 100 female births (Table 98).
- Low birthweight (less than 2500g) occurred in 62.1 per cent of infants with gastroschisis and known birthweight; 9.3 per cent were extremely low birthweight (Table 99).
- Preterm birth (less than 37 weeks) occurred in 54.5 per cent of infants with gastroschisis and stated gestational age; 6.4 per cent were born before 28 weeks (Table 99).

Table 96: *Gastroschisis by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	17	17	22	18	16	30	32	27	21	34	41	275
Stillbirths	6	–	1	2	6	4	3	6	1	3	5	37
Total births*	23	17	23	20	22	35	35	33	23	37	46	314
Induced abortions	–	–	–	–	–	1	2	–	3	2	3	11
Neonatal deaths	2	1	5	2	1	6	5	1	–	1	3	27
						Rate per 10,000 births						
Total births	1.0	0.7	1.0	0.8	0.9	1.4	1.4	1.3	0.9	1.4	1.7	1.1
						Number						
Isolated	15	15	18	17	17	22	28	27	21	31	37	248
Associated	8	2	5	3	5	13	7	5	2	6	9	65
Chromosomal	–	–	–	–	–	–	–	1	–	–	–	1
						Rate per 10,000 births						
Isolated	0.6	0.6	0.8	0.7	0.7	0.9	1.1	1.1	0.8	1.2	1.4	0.9
Associated	0.3	0.1	0.2	0.1	0.2	0.5	0.3	0.2	0.1	0.2	0.3	0.2
Chromosomal	–	–	–	–	–	–	–	0.0	–	–	–	0.0

** Total includes 'not stated'*

Table 97: *Gastroschisis, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	33	20	18	15	8	2	–	–	96
Stillbirths	2	4	1	1	–	1	–	–	9
Total births*	36	24	19	16	8	3	–	–	106
Induced abortions	1	4	–	1	2	–	–	–	8
					Rate per 10,000 births				
Total births	1.3	1.2	1.4	2.1	1.4	1.4	–	–	1.4
					Number				
Isolated	29	16	19	14	8	–	3	–	89
Associated	7	8	–	2	–	–	–	–	17
Chromosomal	–	–	–	–	–	–	–	–	–
					Rate per 10,000 births				
Isolated	1.1	0.8	1.4	1.8	1.4	–	2.2	–	1.1
Associated	0.3	0.4	–	0.3	–	–	–	–	0.2
Chromosomal	–	–	–	–	–	–	–	–	–

** Total includes 'not stated'*

Figure 45: Gastroschisis, Australia, 1982-1992

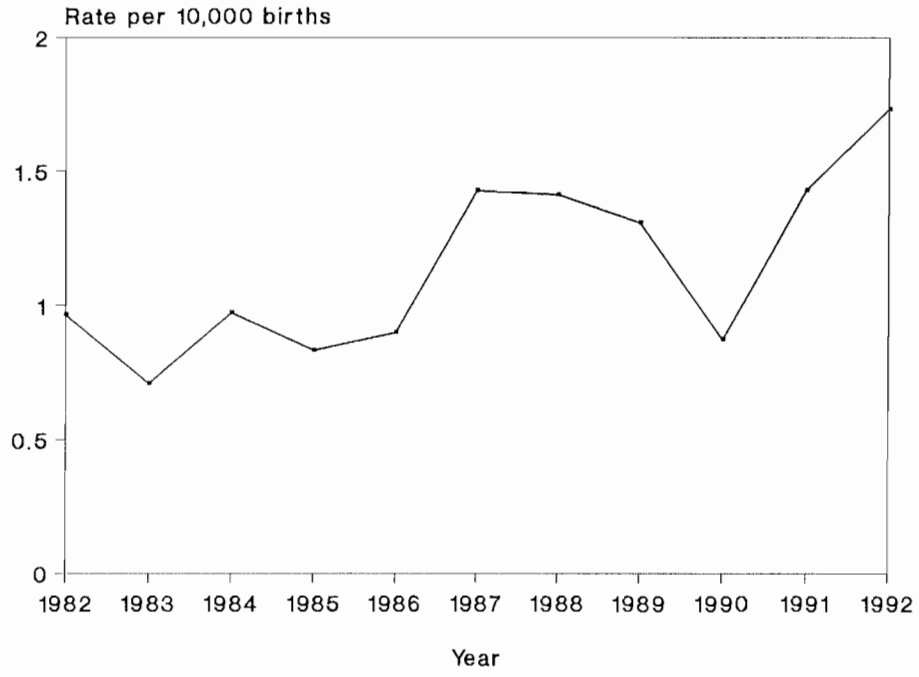

Figure 46: Gastroschisis, States and Territories, 1990-1992

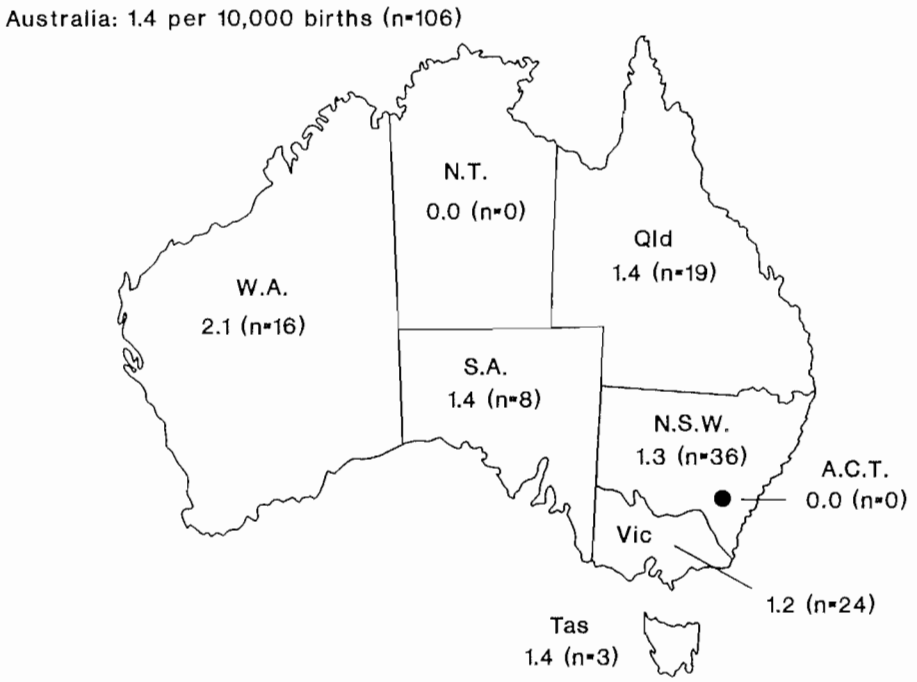

Table 98: *Gastroschisis by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	97	163,050	5.9
20–24	100	640,160	1.6
25–29	80	1,029,355	0.8
30–34	30	665,613	0.5
35–39	5	207,031	0.2
40 and over	–	30,450	–
Not stated	2		
Plurality			
Singleton	289	2,675,229	1.1
Twin	10	62,315	1.6
Other multiple	–	2,438	–
Not stated	15		
Infant's sex			
Male	162	1,404,758	1.2
Female	147	1,331,788	1.1
Indeterminate	5		
Not stated	–		

Table 99: *Proportion of births with gastroschisis by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	26	9.3
1000–2499	148	52.9
2500 and over	106	37.9
Not stated	34	
Gestational age (weeks)		
Less than 28	19	6.4
28–36	143	48.1
37 and over	135	45.5
Not stated	17	

2.24 Trisomy 21 (Down syndrome)

- Trisomy 21 (Down syndrome) is characterised by a specific pattern of abnormalities including hypotonia, flat facies, slanted palpebral fissures, small ears, intellectual disability and variable occurrence of other minor and major congenital malformations. On chromosomal analysis, there is an additional chromosome 21 or part of its long arm.

- The International Classification of Diseases code for Down syndrome is 758.0. The 5-digit British Paediatric Association Classification enables separate codes for the different type of chromosomal abnormality (trisomy 21, translocation, mosaic).

- The national rate of Down syndrome varied between 10.1 and 13.5 per 10,000 births in the period from 1982 to 1992 (Table 100, Figure 47). The reported number of induced abortions performed after prenatal diagnosis of trisomy 21 by amniocentesis or chorionic villus sampling increased substantially during this period, reaching the highest number of 114 in 1992.

- Among 3,277 infants with Down syndrome and known outcome, 6.6 per cent were stillborn; 4.7 per cent of liveborn infants died in the neonatal period.

- For births in 1990-1992, Victoria (14.1 per 10,000 births) had the highest rate of Down syndrome and the Northern Territory (10.0 per 10,000 births) had the lowest rate (Table 101, Figure 48).

- The rate of Down syndrome increased with advancing maternal age, ranging from 6.2 per 10,000 births among teenage mothers to 89.3 per 10,000 births among mothers aged 40 years and over (Table 102).

- Down syndrome was slightly less common in twins than in singleton births (Table 102).

- The sex ratio of Down syndrome was 121.9 male births per 100 female births (Table 102).

- Low birthweight (less than 2500g) occurred in 22.3 per cent of infants with Down syndrome and known birthweight; 3.2 per cent were extremely low birthweight (Table 103).

- Preterm birth (less than 37 weeks) occurred in 23.3 per cent of infants with Down syndrome and stated gestational age; 5.9 per cent were born before 28 weeks (Table 103).

Table 100: *Trisomy 21 by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	251	262	230	270	302	265	282	306	312	304	276	3,060
Stillbirths	14	7	10	15	21	23	17	17	29	24	40	217
Total births*	265	269	240	293	331	292	305	327	345	335	318	3,320
Induced abortions	16	14	28	26	33	46	55	37	71	94	114	534
Neonatal deaths	17	21	5	14	15	16	8	24	8	12	5	145
						Rate per 10,000 births						
Total births	11.1	11.2	10.1	12.2	13.5	11.9	12.3	13.0	13.1	12.9	12.0	12.1
						Number						
Isolated	–	–	–	–	–	–	–	–	–	–	–	–
Associated	–	–	–	–	–	–	–	–	–	–	–	–
Chromosomal	265	269	240	293	331	292	305	327	345	335	318	3,320
						Rate per 10,000 births						
Isolated	–	–	–	–	–	–	–	–	–	–	–	–
Associated	–	–	–	–	–	–	–	–	–	–	–	–
Chromosomal	11.1	11.2	10.1	12.2	13.5	11.9	12.3	13.0	13.1	12.9	12.0	12.1

** Total includes 'not stated'*

Table 101: *Trisomy 21, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	310	254	160	77	47	21	14	9	892
Stillbirths	22	22	16	8	13	7	3	2	93
Total births*	335	281	176	85	64	28	18	11	998
Induced abortions	122	67	30	27	25	3	5	–	279
					Rate per 10,000 births				
Total births	12.3	14.1	12.9	11.1	10.8	13.3	13.1	10.0	12.8
					Number				
Isolated	–	–	–	–	–	–	–	–	–
Associated	–	–	–	–	–	–	–	–	–
Chromosomal	335	281	176	85	64	28	18	11	998
					Rate per 10,000 births				
Isolated	–	–	–	–	–	–	–	–	–
Associated	–	–	–	–	–	–	–	–	–
Chromosomal	12.3	14.1	12.9	11.1	10.8	13.3	13.1	10.0	12.8

** Total includes 'not stated'*

Figure 47: Trisomy 21, Australia, 1982-1992

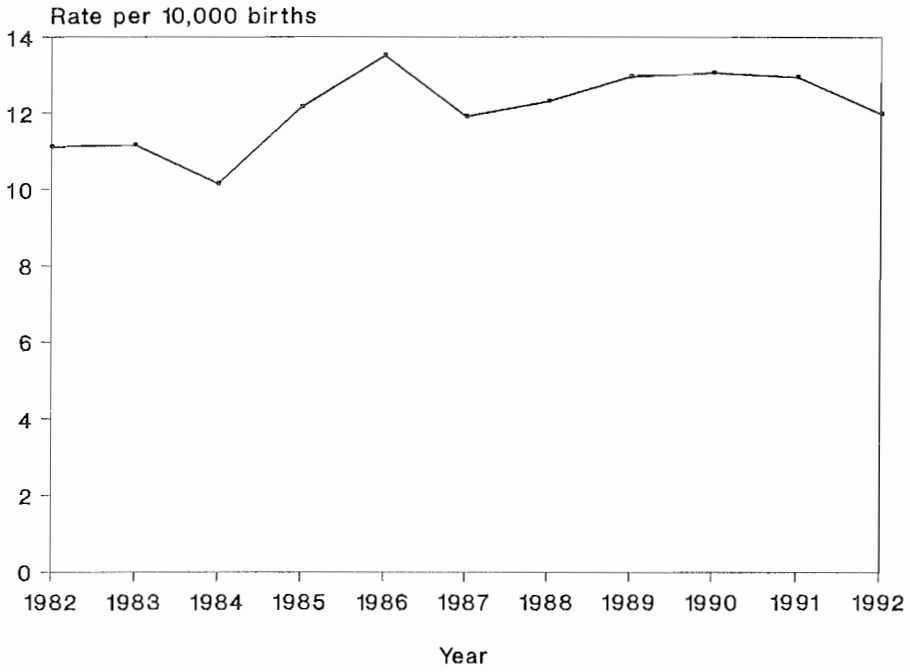

Figure 48: Trisomy 21, States and Territories, 1990-1992

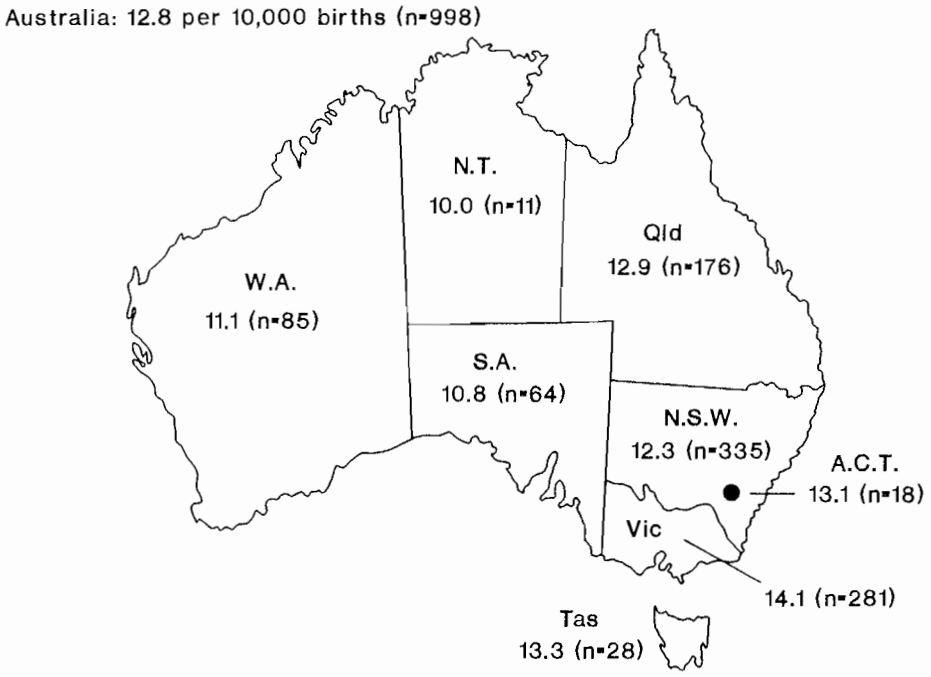

Table 102: *Trisomy 21 by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	101	163,050	6.2
20–24	451	640,160	7.0
25–29	720	1,029,355	7.0
30–34	927	665,613	13.9
35–39	675	207,031	32.6
40 and over	272	30,450	89.3
Not stated	174		
Plurality			
Singleton	3,071	2,675,229	11.5
Twin	66	62,315	10.6
Other multiple	3	2,438	12.3
Not stated	180		
Infant's sex			
Male	1,819	1,404,758	12.9
Female	1,492	1,331,788	11.2
Indeterminate	3		
Not stated	6		

Table 103: *Proportion of births with trisomy 21 by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	80	3.2
1000–2499	481	19.1
2500 and over	1,960	77.7
Not stated	799	
Gestational age (weeks)		
Less than 28	155	5.9
28–36	452	17.3
37 and over	2,002	76.7
Not stated	711	

2.25 Trisomy 18 (Edwards syndrome)

- Trisomy 18 (Edwards syndrome) is characterized by a specific pattern of abnormalities including clenched hand and overlapping fingers, abnormal dermal ridge pattern of the fingertips, developmental disability and variable occurrence of other minor and major congenital malformations. On chromosomal analysis, there is an additional chromosome 18 or part of this chromosome.

- The International Classification of Diseases code for Edwards syndrome is 758.2. The 5-digit British Paediatric Association Classification enables separate codes for the different types of chromosomal abnormality (trisomy 18, translocation, mosaic).

- The national rate of Edwards syndrome varied between 1.5 and 2.8 per 10,000 births in the period from 1982 to 1992 (Table 104, Figure 49), and tended to be higher in the later years. The reported number of induced abortions performed after prenatal diagnosis of trisomy 18 by amniocentesis or chorionic villus sampling increased from 2 in 1982 to 39 in 1992.

- Among 550 infants with Edwards syndrome and known outcome, 26.7 per cent were stillborn; 68.2 per cent of liveborn infants died in the neonatal period.

- For births in 1990-1992, the Australian Capital Territory (3.6 per 10,000 births) and the Northern Territory (3.6 per 10,000 births) had the highest rates and South Australia (1.4 per 10,000 births) had the lowest rate (Table 105, Figure 50).

- The rate of Edwards syndrome increased with advancing maternal age, ranging from 1.2 per 10,000 births among mothers aged less than 20 years to 16.1 per 10,000 births among mothers aged 40 years and over (Table 106).

- Edwards syndrome was less common in twins than in singleton births (Table 106).

- The sex ratio of Edwards syndrome was 69.2 male births per 100 female births (Table 106).

- Low birthweight (less than 2500g) occurred in 91.9 per cent of infants with Edwards syndrome and known birthweight; 16.2 per cent were extremely low birthweight (Table 107).

- Preterm birth (less than 37 weeks) occurred in 51.0 per cent of infants with Edwards syndrome and stated gestational age; 13.5 per cent were born before 28 weeks (Table 107).

Table 104: *Trisomy 18 by outcome and type of malformation, Australia, 1982–1992*

Outcome	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1982–92
						Number						
Live births	33	33	29	47	31	35	41	30	37	50	37	403
Stillbirths	6	4	12	10	11	12	12	18	20	21	21	147
Total births*	39	37	41	59	43	47	54	49	61	72	59	561
Induced abortions	2	4	10	13	11	11	12	21	20	29	39	172
Neonatal deaths	28	23	20	33	23	28	26	22	22	33	17	275
						Rate per 10,000 births						
Total births	1.6	1.5	1.7	2.4	1.8	1.9	2.2	1.9	2.3	2.8	2.2	2.1
						Number						
Isolated	–	–	–	–	–	–	–	–	–	–	–	–
Associated	–	–	–	–	–	–	–	–	–	–	–	–
Chromosomal	39	37	41	59	43	47	54	49	61	72	59	561
						Rate per 10,000 births						
Isolated	–	–	–	–	–	–	–	–	–	–	–	–
Associated	–	–	–	–	–	–	–	–	–	–	–	–
Chromosomal	1.6	1.5	1.7	2.4	1.8	1.9	2.2	1.9	2.3	2.8	2.2	2.1

** Total includes 'not stated'*

Table 105: *Trisomy 18, States and Territories, 1990–1992*

Outcome	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Live births	44	34	21	12	3	3	3	4	124
Stillbirths	20	20	13	3	4	–	2	–	62
Total births*	67	54	34	16	9	3	5	4	192
Induced abortions	33	31	6	9	5	–	4	–	88
					Rate per 10,000 births				
Total births	2.5	2.7	2.5	2.1	1.5	1.4	3.6	3.6	2.5
					Number				
Isolated	–	–	–	–	–	–	–	–	–
Associated	–	–	–	–	–	–	–	–	–
Chromosomal	67	54	34	16	9	3	5	4	192
					Rate per 10,000 births				
Isolated	–	–	–	–	–	–	–	–	–
Associated	–	–	–	–	–	–	–	–	–
Chromosomal	2.5	2.7	2.5	2.1	1.5	1.4	3.6	3.6	2.5

** Total includes 'not stated'*

Figure 49: Trisomy 18, Australia, 1982-1992

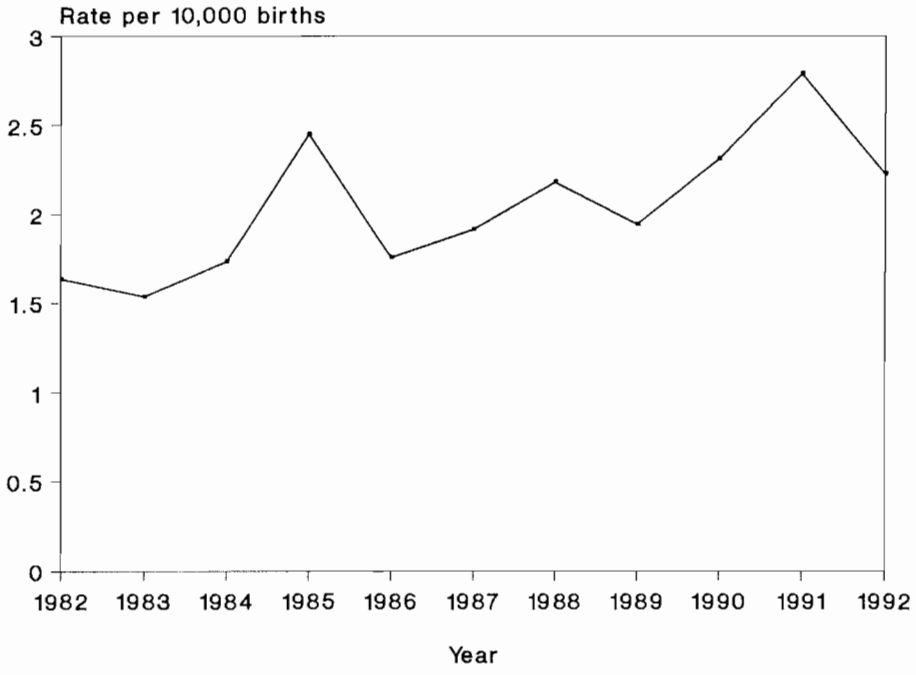

Figure 50: Trisomy 18, States and Territories, 1990-1992

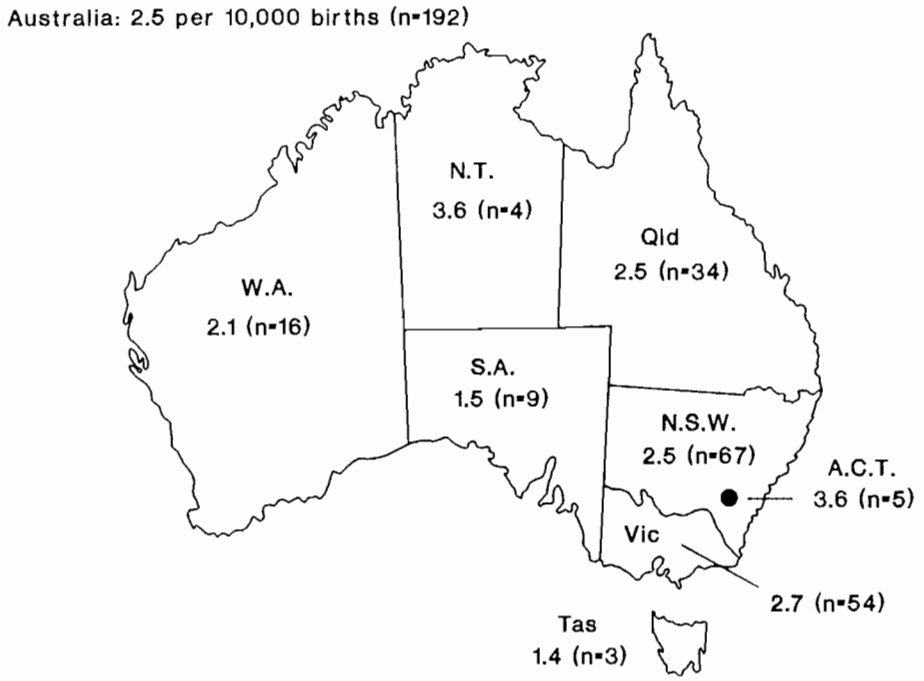

Table 106: *Trisomy 18 by selected characteristics, Australia, 1982–1992*

Characteristic	Number	Total births	Rate per 10,000 births
Maternal age (years)			
Less than 20	19	163,050	1.2
20–24	87	640,160	1.4
25–29	152	1,029,355	1.5
30–34	141	665,613	2.1
35–39	102	207,031	4.9
40 and over	49	30,450	16.1
Not stated	11		
Plurality			
Singleton	539	2,675,229	2.0
Twin	8	62,315	1.3
Other multiple	1	2,438	4.1
Not stated	13		
Infant's sex			
Male	229	1,404,758	1.6
Female	331	1,331,788	2.5
Indeterminate	1		
Not stated	–		

Table 107: *Proportion of births with trisomy 18 by birthweight and gestational age, Australia, 1982–1992*

Characteristic	Number	Per cent
Birthweight (g)		
Less than 1000	78	16.2
1000–2499	365	75.7
2500 and over	39	8.1
Not stated	79	
Gestational age (weeks)		
Less than 28	70	13.5
28–36	195	37.5
37 and over	255	49.0
Not stated	41	

Table 108: *Live births, stillbirths and total births, by State or Territory of registration, 1981–1992*

Year		NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Australia
1981	Live births	47,362	–	38,834	19,351	–	7,188	–	–	112,735
	Stillbirths	353	–	253	129	–	44	–	–	779
	Total births	47,715 *	–	39,087	19,480	–	7,232	–	–	113,514
1982	Live births	83,489	59,983	40,540	19,294	22,236	7,002	–	4,479	237,023
	Stillbirths	600	490	225	121	146	48	–	31	1,661
	Total births	84,089	60,473	40,765	19,415	22,382	7,050	–	4,510	238,684
1983	Live births	82,739	60,123	42,000	19,901	23,046	7,028	–	4,622	239,459
	Stillbirths	526	439	262	115	150	49	–	30	1,571
	Total births	83,265	60,562	42,262	20,016	23,196	7,077	–	4,652	241,030
1984	Live births	81,792	59,763	40,356	20,149	21,601	7,098	–	4,590	235,349
	Stillbirths	545	422	245	131	142	45	–	24	1,554
	Total births	82,337	60,185	40,601	20,280	21,743	7,143	–	4,614	236,903
1985	Live births	82,780	61,726	40,275	19,889	23,066	7,213	–	4,619	239,568
	Stillbirths	477	396	251	143	142	52	–	30	1,491
	Total births	83,257	62,122	40,526	20,032	23,208	7,265	–	4,649	241,059
1986	Live births	84,009	60,387	40,166	19,826	24,175	6,911	3,307	4,627	243,408
	Stillbirths	530	403	252	125	146	66	35	28	1,585
	Total births	84,539	60,790	40,418	19,951	24,321	6,977	3,342	4,655	244,993

Table 108: *Live births, stillbirths and total births, by State or Territory of registration, 1981–1992 (cont.)*

Year		NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Australia
1987	Live births	85,650	61,642	39,100	19,345	23,271	6,752	3,519	4,680	243,959
	Stillbirths	497	363	231	92	142	29	46	32	1,432
	Total births	86,147	62,005	39,331	19,437	23,413	6,781	3,565	4,712	245,391
1988	Live births	84,268	62,347	40,240	19,231	25,123	6,745	3,422	4,817	246,193
	Stillbirths	523	360	235	111	120	55	33	36	1,473
	Total births	84,791	62,707	40,475	19,342	25,243	6,800	3,455	4,853	247,666
1989	Live births	85,464	64,185	41,714	19,703	25,019	6,788	3,366	4,614	250,853
	Stillbirths	465	411	220	132	112	34	45	32	1,451
	Total births	85,929	64,596	41,934	19,835	25,131	6,822	3,411	4,646	252,304
1990	Live births	90,260	67,158	44,533	19,981	25,322	7,001	3,534	4,859	262,648
	Stillbirths	574	404	245	119	132	45	32	39	1,590
	Total births	90,834	67,562	44,778	20,100	25,454	7,046	3,566	4,898	264,238
1991	Live births	87,047	65,724	43,854	19,727	25,349	6,857	3,589	5,100	257,247
	Stillbirths	499	345	273	106	143	38	33	41	1,478
	Total births	87,546	66,069	44,127	19,833	25,492	6,895	3,622	5,141	258,725
1992	Live births	92,207	66,050	45,903	19,406	25,051	6,956	3,733	4,845	264,151
	Stillbirths	575	349	238	114	120	34	37	26	1,493
	Total births	92,782	66,399	46,141	19,520	25,171	6,990	3,770	4,871	265,644
1981–1992	Live births	987,067	689,088	497,515	235,803	263,259	83,539	24,470	51,852	2,832,593
	Stillbirths	6,164	4,382	2,930	1,438	1,495	539	261	349	17,558
	Total births	993,231	693,470	500,445	237,241	264,754	84,078	24,731	52,201	2,850,151

** Data for NSW were imcomplete as some hospitals did not report births in 1981*

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Appendix 1 Data items in national monitoring system on congenital malformations

Demographic data:	State/Territory of birth Reference number State/Territory record number
Maternal data:	Local Government Area of residence Date of birth/Age Marital status Previous pregnancies and outcome Marital status Country of birth Aboriginality Accommodation status in hospital Date of last menstrual period
Infant/fetus data:	Hospital of birth (or termination of pregnancy) Sources of notification Date of birth (or termination of pregnancy) Sex Plurality and birth order Birthweight Gestational age Method of prenatal diagnosis (for aborted fetuses) Outcome Date of death (if applicable) Autopsy performed British Paediatric Association codes for congenital malformations Malformation type (eg isolated, multiple, syndrome) Sources of diagnosis Comment (optional), including cytogenetic diagnosis Follow-up information requested

Appendix 2 Minor congenital malformations

Unless an infant or fetus has other major congenital malformations, the following minor malformations and other conditions are not notified to the AIHW National Perinatal Statistics Unit.

Skin

- Skin cysts
- Noncavernous single small hemangioma (less than 10cm diameter)
- Benign skin neoplasms
- Nevus flammeus
- Birth mark
- Mongolian spots
- Cutis marmorata
- Café au lait spots
- Scalp defects, cutis aplasia
- Lanugo excessive or persistent
- Accessory nipple
- Pilonidal or sacral dimple

Skull

- Brachycephaly, dolichocephaly, plagiocephaly
- Craniotabes
- Large, small or absent fontanelles
- Macrocephaly
- Head asymmetry

Face

- Facial palsy
- Facial asymmetry
- Micrognathia
- Flat or wide nasal bridge, upturned nose, or other minor nose malformation
- Deviation of nasal septum

Eyes

- Esotropia, exotropia, strabismus
- Nystagmus
- Blue sclera
- Brushfield spots
- Epicanthal folds
- Eye slant (upward or downward)
- Narrow palpebral fissures
- Nasolacrimal duct obstruction/Dacryostenosis

Ears

- Ear tags
- Bat, cauliflower, elfin, lop, pointed, posteriorly rotated, or low-set ears
- Darwin's tubercle
- Preauricular sinus, cyst or pit
- Macrotia

Mouth, tongue and palate

- Tongue-tie
- Tongue cyst
- Ranula
- Cleft gum
- Macroglossia
- Microglossia
- Natal teeth
- Big, wide or small lips
- High-arched palate
- Bifid uvula

Neck

- Branchial cleft or sinus
- Redundant neck skin folds
- Webbing of neck
- Short neck

Cardiovascular system

- Patent ductus arteriosus or foramen ovale (gestational age <37 weeks or birthweight <2500g)
- Mild, trivial, or physiologic valvular regurgitation
- Cardiomegaly
- Dextroposition of heart
- Heart block
- Persistent fetal circulation
- Single umbilical artery

Gastrointestinal system

- Hepatomegaly
- Splenomegaly
- Meckel's diverticulum
- Anal tags
- Anal or rectal fissures
- Inguinal hernia in males
- Inguinal hernia in females (birthweight <2500g)
- Umbilical hernia (skin covered)

Urogenital system

- Imperforate hymen
- Prominent clitoris
- Fusion of vulva
- Vaginal or hymenal tags
- Cyst of vagina, vulva, canal of Nuck, or ovary
- Hydrocele
- Undescended testis (gestational age <37 weeks, birthweight <2500g)
- Small penis
- Chordee
- Patent urachus or urachal cyst
- Ectopic kidney

Limbs

- Skin tags on hands and feet
- Partial syndactyly of toes, webbing of toes
- Brachydactyly, unspecified
- Clinodactyly
- Camptodactyly
- Flexion deformities of digits
- Long fingers and toes
- Nail hypoplasia
- Enlarged or hypertrophic nails
- Widely spaced first and second toes
- Overlapping toes
- Tibial torsion or bowing
- Genu valgum, varum or recurvatum
- Dislocation of subluxation of knee
- Hallux valgus
- Hallux varus
- Talipes calcaneovalgus, equinovarus
- Cervical rib, other extra ribs
- Rocker-bottom feet
- Simian or Sydney lines, abnormal palmar creases
- Hip subluxation, clicky hips

Respiratory system

- Hypoplastic lungs (gestational age <37 weeks)
- Laryngeal stridor
- Laryngomalacia

Other conditions

- Balanced autosomal translocations
- Birth injuries
- Cephalhaematoma
- Cystic fibrosis
- Enzyme deficiencies
- Hydrops fetalis
- Meconium ileus
- Metabolic disorders
- Pyloric stenosis
- Sternomastoid tumour
- Torticollis
- Volvulus

Appendix 3 Definitions

Birthweight: The first weight of the baby (stillborn or liveborn) obtained after birth (usually measured to the nearest five grams and obtained within one hour of birth).

Congenital malformations: Structural or anatomical abnormalities that are present at birth, usually resulting from abnormal development in the first trimester of pregnancy.

Gestational age: The duration of pregnancy in completed weeks calculated from the date of a woman's last menstrual period and her infant's date of birth, or derived from clinical assessment during pregnancy or from examination of the infant after birth.

Induced abortion: Termination of pregnancy by medical or mechanical means before 20 weeks' gestation.

Isolated malformation: Only one major congenital malformation is present in the infant or fetus.

Live birth: Live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached; each product of such a birth is considered liveborn (WHO definition).

Low birthweight: Birthweight of less than 2500g.

Major congenital malformations: Congenital malformations that are either lethal or significantly affect the individual's function or appearance.

Maternal age: Mother's age at her child's birth.

Multiple malformations: More than one independent major congenital malformation is present in the infant or fetus.

Neonatal death: A death of a liveborn infant within 28 days of birth (expressed as a rate per 1,000 live births).

Perinatal death: Stillbirth or neonatal death.

Plurality: The number of births resulting from a pregnancy.

Preterm birth: Birth before 37 completed weeks of gestation.

Stillbirth: Stillbirth is a fetal death prior to the complete expulsion or extraction from its mother of a product of conception of 20 or more completed weeks of gestation or of 400g or more birthweight; the death is indicated by the fact that after such separation the fetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles.