
BIRTHS IN VICTORIA 1992–1996

PERINATAL DATA COLLECTION UNIT

PUBLIC HEALTH DIVISION

DEPARTMENT OF HUMAN SERVICES

VICTORIA 1998

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Highlights

- Between 1992 to 1996 the total number of births (live and still) has decreased from a peak in 1992 of 66,035 to a low of 62,951 in 1996. There has been a corresponding decrease in the births per 1000 mean resident population from 14.8 to 13.8.
- Approximately 27% of births are to women living in rural regions.
- Age of women giving birth continues to increase with 16% being 35 years or more.
- There is an increasing proportion of single women having babies.
- Women born in Asia or the Middle East contributed to over 12% of births in 1996.
- Non-Australian born women having babies in Victoria tend to be older. For instance 18.3% of Asian born women are 35 years and older compared with 12.5% of Australian born women.
- There is declining parity and increasing gravidity in Victoria.
- Nearly 7% of babies are born preterm (< 37 weeks gestation) and 6.5% are of low birthweight (<2,500g).
- Spontaneous onset of labour has decreased from 57.2% in 1992 to 52.9% in 1996, with a corresponding increase in inductions for the same period from 19.8% to 23.3%.
- There has been a continuing decline in forceps deliveries from 11.9% to 10%, and an increase in caesarean deliveries from 17.7% to 19.7%. The rise in elective caesareans is greater than the rise in emergency caesareans, with more than one quarter of women 35 years and over having a caesarean delivery.
- The increase in women having a shorter length of stay (2 to 3 days) in hospital after having a baby continues, and corresponds to a decline in women staying six days or more.
- There has been a decrease in perinatal mortality for singletons, twins and triplets since 1992. However, there is increasing mortality with increasing plurality.
- There is a significant five-fold increased likelihood that an Aboriginal woman giving birth will be a teenager compared with a non-Aboriginal woman.
- The number and proportion of planned homebirths has declined, but the figures for unplanned (emergency home or in-transit deliveries) remain steady.
- There are at least 75 written requests for unpublished data each year and PDCU staff involvement in collaborative projects and independent research.

1. Introduction

1.0 Background

The Perinatal Data Collection Unit (PDCU) was established under the Consultative Council on Obstetric and Paediatric Mortality and Morbidity in 1982, as a result of a Commonwealth-State agreement to collect vital statistics on pregnancy outcomes and congenital malformations. A perinatal morbidity statistics form (see Appendix A) is completed by midwives for every Victorian birth of 20 weeks gestation or 400 grams, and this collection forms the basis for this report.

This report presents a 5 year overview of the key factors associated with mothers and infants during the perinatal period, (1992-1996). It provides supplementary information to our previous report, *Births in Victoria 1983-1992*¹. There is an overlap of twelve months with 1992 included in both reports.

1.2 Data sources

Victoria has a population of about four and a half million and about 64,000 births. Midwives collect perinatal data on every birth, both in hospital and out of hospital, as part of a mandatory reporting system.

1.3 Data Quality

Incomplete perinatal forms, or those with inconsistencies, are followed up with hospital staff. The computer system has edit restraints at entry and processing stages. Further, validation studies are carried out regularly to assess how well the data are reported and to evaluate the quality of information on the perinatal form compared with the medical record.

Validation studies²⁻⁵ have shown that most items are recorded reliably but some factors, including maternal medical conditions, obstetric complications and neonatal morbidity are under-reported. A perinatal form is received for 99.6 per cent of hospital births.⁷

1.4 Births

- In the mid 1960's, the annual birth rate was approximately 20 per 1000 mean resident population⁶. There has been a continuing decline in the annual birth rate since then, with 1996 being the first time the rate fell below 14/1000.

Table 1.1: Total births in Victoria, 1992–1996

Year	Livebirths	Total births (live & still)	Estimated mean resident population ⁷	Births per 1000 mean resident population
1992	65,866	66,035	4,444,818	14.8
1993	64,322	64,737	4,465,200	14.4
1994	64,448	64,932	4,475,500	14.4
1995	63,245	63,715	4,501,000	14.1
1996	62,484	62,951	4,561,817	13.8
1992–96	320,355	322,640	22,448,335	14.4

- A more meaningful estimate of the declining birth rate is shown below with the number of births to women aged between 15–49 declining from 55.6/1000 in 1992 to 52.4/1000 in 1996.

Table 1.2: Total births /1000 females aged 15 to 49, Victoria, 1992–1996

Year	Total births (live & still)	Estimated females aged 15–49 ⁷	Births/1000 females aged 15–49
1992	66,035	1,187,593	55.6
1993	64,737	1,187,746	54.5
1994	64,932	1,186,302	54.7
1995	63,715	1,188,780	53.6
1996	62,951	1,200,394	52.4

2. Maternal factors

2.1 Region of residence

- The proportion of babies born to women living in rural regions is declining (see Appendix C).

Table 2.1: Number of confinements by region of residence, 1992–1996

Region	1992	%	1993	%	1994	%	1995	%	1996	%
Barwon SW	4,794	7.3	4,492	7.0	4,668	7.3	4,414	7.0	4,297	6.9
Grampians	2,548	3.9	2,499	3.9	2,412	3.8	2,326	3.7	2,345	3.8
Loddon Mallee	3,946	6.0	3,821	6.0	3,676	5.7	3,636	5.8	3,518	5.7
Hume	3,515	5.4	3,467	5.4	3,461	5.4	3,333	5.3	3,274	5.3
Gippsland	3,675	5.6	3,460	5.4	3,383	5.3	3,249	5.2	3,076	5.0
Rural (subtotal)	18,478	28.2	17,739	27.8	17,600	27.5	16,958	27.0	16,510	26.6
Western Metro	9,716	14.9	9,679	15.2	9,869	15.4	9,748	15.5	9,806	15.8
Northern Metro	10,093	15.4	10,035	15.7	10,066	15.7	9,911	15.8	9,665	15.6
Eastern Metro	11,718	17.9	10,955	17.2	10,857	17.0	10,779	17.2	10,722	17.3
Southern Metro	14,841	22.7	14,871	23.3	14,963	23.4	14,732	23.5	14,676	23.7
Metro (subtotal)	46,368	70.9	45,540	71.4	45,755	71.5	45,170	72.0	44,869	72.3
Other*	558	0.9	516	0.8	628	1.0	604	1.0	649	1.0
All confinements	65,404		63,795		63,983		62,732		62,028	

* Refers to women who live in a postcode outside Victoria, but who deliver at a Victorian hospital

2.2 Maternal age

- The age profile of women giving birth in Victoria has changed markedly over the many years of the data collection, with an increasing proportion of women in the older age groups and a decreasing proportion of teenagers and mothers less than 30 year old.

Table 2.2: Maternal age groups, all confinements, 1992–1996

Age (years)	1992	%	1993	%	1994	%	1995	%	1996	%
less than 15	#3	0.0	16	0.0	17	0.0	18	0.0	9	0.0
15-19	2,474	3.8	2,174	3.4	2,257	3.5	2,175	3.5	2,120	3.4
20-24	11,469	17.5	10,802	16.9	10,524	16.4	9,819	15.7	9,073	14.6
25-29	23,264	35.6	22,354	35.0	21,596	33.8	21,057	33.6	20,554	33.1
30-34	20,125	30.8	20,231	31.7	20,611	32.2	20,487	32.7	20,517	33.1
35-39	6,958	10.6	7,085	11.1	7,750	12.1	7,859	12.5	8,446	13.6
40-44	1,055	1.6	1,098	1.7	1,181	1.8	1,275	2.0	1,266	2.0
45 and over	52	0.1	35	0.1	46	0.1	38	0.1	43	0.1
Unknown	4	0.0	0	0.0	1	0.0	4	0.0	0	0.0
All ages	65,404		63,795		63,983		62,732		62,028	
Mean age	28.6		28.8		28.9		29.1		29.3	
* primigravidae	26.4		26.5		26.8		26.9		27.1	
* nulliparae	26.7		26.8		27.1		27.2		27.4	

This figure is unusually low. Before 1992 the number of females with a maternal age of less than 15 ranged from 7 to 30. Similar fluctuations are evident in 1993 to 1996.

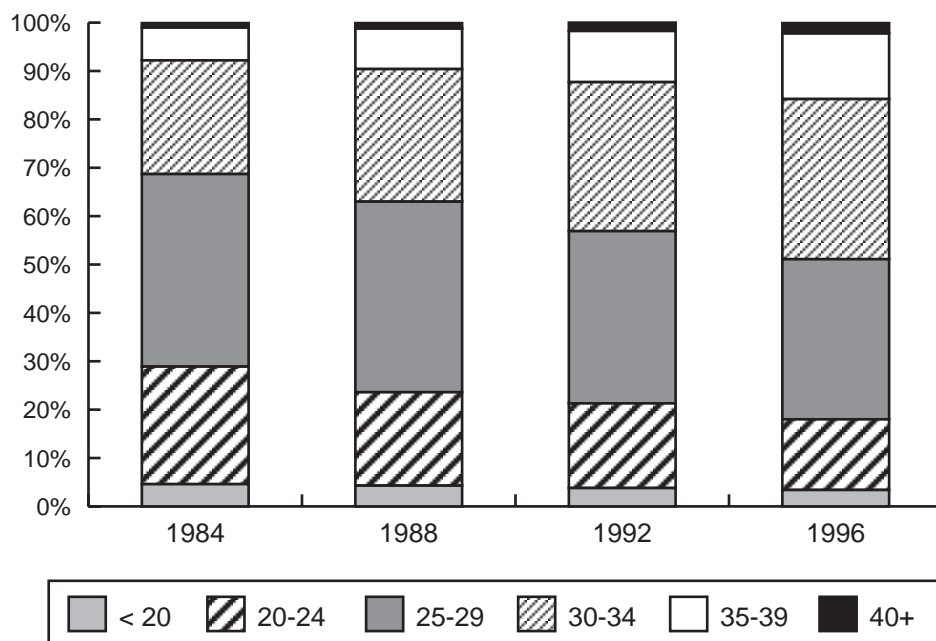
- The mean age of all mothers has risen to over 29 years. The mean age of primigravidae versus nulliparae shows that women who give birth, and who have had a previous spontaneous or induced abortion, are three months older on average than those who have been pregnant for the first time.

- The table and figure below extract data from earlier reports of the Perinatal Data Collection Unit¹ and Consultative Council⁶ to show this change in increasing maternal age.

Table 2.2: Maternal age group (per cent), all confinements, 1984–1996

	1984	1988	1992	1996
< 20	4.6	4.3	3.8	3.4
20-24	24.3	19.3	17.5	14.6
25-29	39.8	39.4	35.6	33.1
30-34	23.5	27.4	30.8	33.1
35-39	6.8	8.4	10.6	13.6
40+	0.9	1.1	1.7	2.1

Figure 2.1: Maternal age, all confinements, 1984–1996



- Combined data for the five years show that maternal age distribution varies between the residential regions in Victoria.
- The metropolitan regions, in particular the Eastern Metropolitan region, have a smaller proportion of younger mothers than the rural regions. In the Eastern metropolitan region the proportion of women giving birth at 35 years and over is 17.2%.

Table 2.3: Maternal age, all confinements, by region of residence, 1992–1996, pooled data

Region	< 20	%	20–24	%	25–29	%	30–34	%	35–39	%	40+	%	Total
Barwon SW	1,058	4.7	3,970	17.5	8,060	35.6	6,926	30.6	2,324	10.3	326	1.4	22,664
Grampians	603	4.9	2,248	18.5	4,352	35.9	3,599	29.7	1,144	9.4	184	1.5	12,130
Loddon Mallee	1,053	5.9	3,660	19.7	6,370	34.3	5,423	29.2	1,830	9.8	261	1.4	18,597
Hume	811	4.7	3,340	19.6	6,044	35.5	4,946	29.0	1,660	9.7	245	1.4	17,046
Gippsland	856	5.0	3,637	21.6	5,986	35.5	4,640	27.5	1,492	8.9	232	1.3	16,843
Western Metro	1,710	3.5	8,342	17.1	17,401	35.6	14,955	30.6	5,454	11.2	954	2	48,816
Northern Metro	1,681	3.4	8,402	16.9	16,880	33.9	15,732	31.6	6,068	12.2	1,007	2	49,770
Eastern Metro	1,070	1.9	6,169	11.2	17,860	32.5	20,494	37.2	8,173	14.9	1,264	2.3	55,030
Southern Metro	2,262	3.0	11,331	15.3	24,847	33.5	24,430	33.0	9,637	13.0	1,575	2.3	74,082
Other*	159	5.3	588	19.9	1,025	34.7	826	28.0	316	10.7	41	0.2	2,955
#All confinements	11,263	3.5	51,687	16.3	108,825	34.2	101,971	32.1	62,028	12.0	6,088	1.9	317,933

* Refers to women who live in a postcode outside Victoria, but who deliver at a Victorian hospital

In 9 cases the maternal age is unknown

2.3 Marital status

- There is an increasing number of single women and women living in a de facto relationship who are giving birth; there is a corresponding decrease in the proportion of married women having babies from 81.6% to 78%.

Table 2.4: Marital status of mother, all confinements, 1992–1996

Age (years)	1992		1993		1994		1995		1996	
Single	6,177	9.4	6,230	9.8	6,431	10.1	6,671	10.6	6,407	10.3
Divorced	249	0.4	283	0.4	287	0.4	297	0.5	330	0.5
Widowed	38	0.1	34	0.1	35	0.1	38	0.1	29	0.0
Separated	507	0.8	483	0.8	461	0.7	464	0.7	425	0.7
Married	53,366	81.6	51,547	80.8	50,894	79.5	49,150	78.3	48,391	78.0
De facto	4,991	7.6	5,140	8.1	5,720	8.9	5,912	9.4	6,252	10.1
Unknown	76	0.1	78	0.1	155	0.2	200	0.3	194	0.3
All confinements	65,404		63,795		63,983		62,732		62,028	

2.4 Country of birth

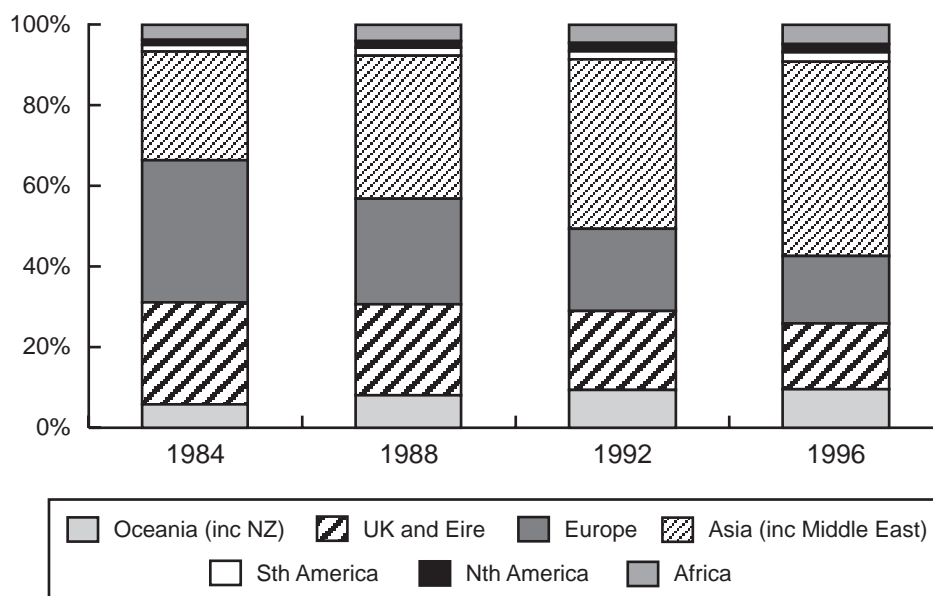
- Women born in Asia or the Middle East contributed to over 12% of births in Victoria in 1996. This figure has risen from 6.5% in 1983¹.
- There has been a decline in the proportion of women born in the UK, Eire or Europe in this same period; their confinements fell from 9.8% to 8.3%.

Table 2.5: Maternal country of birth, all confinements, 1992–1996

Country of birth	1992		1993		1994		1995		1996	
Australia	49,323	75.4	47,770	74.9	47,981	75.0	47,126	75.1	46,335	74.7
Oceania (inc NZ)	1,493	2.3	1,486	2.3	1,424	2.2	1,413	2.3	1,460	2.4
UK and Eire	3,149	4.8	2,995	4.7	2,911	4.5	2,672	4.3	2,519	4.1
Europe	3,252	5.0	2,969	4.7	2,877	4.5	2,603	4.1	2,620	4.2
Asia incl Middle East	6,735	10.3	7,123	11.2	7,223	11.3	7,303	11.6	7,516	12.1
North America	328	0.5	313	0.5	314	0.5	322	0.5	304	0.5
South America	336	0.5	337	0.5	379	0.6	378	0.6	376	0.6
Africa	716	1.1	682	1.1	746	1.2	751	1.2	761	1.2
Other/Unknown	72	0.1	120	0.2	128	0.2	164	0.3	137	0.2
All countries	65,404		63,795		63,983		62,732		62,028	

- The figure below extracts data from earlier reports of the Perinatal Data Collection Unit¹.

Figure 2.2: Maternal country of birth, non-Australian born, 1984–1996



- The large increase in women from Asia (including the Middle East) giving birth in Victoria is primarily due to increasing numbers of Vietnamese and Chinese-born women. There has been little change in numbers from other Asian and Middle Eastern countries except for slight increases in numbers of Indian and Sri Lankan women. The proportional decrease in European-born women relates to the decline in mothers born in Italy, Germany, Greece and Former Yugoslavia.

Table 2.6: Changes in top ten non-English speaking countries, 1992–1996

	Number of births				
	1992	1993	1994	1995	1996
1	Vietnam 1369	Vietnam 1639	Vietnam 1668	Vietnam 1802	Vietnam 1731
2	Former Yugoslavia 826	Lebanon 756	Former Yugoslavia 783	China 753	China 869
3	Lebanon 692	Former Yugoslavia 668	China 712	Former Yugoslavia 728	Former Yugoslavia 756
4	Philippines 619	China 620	Lebanon 705	Lebanon 704	Lebanon 720
5	Turkey 598	Philippines 608	Philippines 609	Philippines 583	Philippines 582
6	Italy 584	Turkey 562	Turkey 580	Turkey 481	Sri Lanka 529
7	China 525	Italy 527	Italy 502	Sri Lanka 460	Turkey 497
8	Malaysia 485	Malaysia 472	Sri Lanka 442	India 457	India 463
9	Greece 448	India 444	India 430	Italy 419	Italy 379
10	Sri Lanka 431	Sri Lanka 432	Malaysia 413	Malaysia 410	Malaysia 348

Table 2.7: Maternal country of birth, all confinements, by region 1992–1996

Region	Australia		Oceania incl NZ		UK inc Eire		Europe		Asia inc ME		Nth America		Sth America		Africa		Total	
	%		%		%		%		%		%		%		%		%	
Barwon SW	20,467	90.3	291	1.3	831	3.7	485	2.1	450	2.0	59	0.3	12	0.1	55	0.2	22,650	
Grampians	11,447	94.4	116	1.0	258	2.1	118	1.0	117	1.0	35	0.3	7	0.1	19	0.2	12,117	
Loddon Mallee	17,417	93.7	294	1.6	381	2.0	160	0.9	247	1.3	39	0.2	5	0	20	0.1	18,563	
Hume	15,791	92.6	206	1.2	437	2.6	226	1.3	280	1.6	53	0.3	10	0.1	31	0.2	17,034	
Gippsland	15,438	91.7	233	1.4	527	3.1	239	1.4	285	1.7	52	0.3	21	0.1	40	0.2	16,835	
Western Metro	31,685	64.9	1,110	2.3	2,035	4.2	3,729	7.6	8,541	17.5	204	0.4	640	1.3	756	1.5	48,700	
Northern Metro	32,316	64.9	1,238	2.5	1,584	3.2	3,354	6.7	10,104	20.3	187	0.4	244	0.5	680	1.4	49,707	
Eastern Metro	41,285	75.0	1,324	2.4	3,397	6.2	1,929	3.5	5,830	10.6	330	0.6	226	0.4	619	1.1	54,940	
Southern Metro	49,944	67.4	2,420	3.3	4,720	6.4	4,055	5.5	10,002	13.5	612	0.8	639	0.9	1,430	1.9	73,822	
Other*	2,745	92.9	44	1.5	76	2.6	26	2.6	44	1.5	10	0.3	2	0.1	6	0.2	2,953	
All confinements#	238,535	75.0	7,276	2.3	14,246	4.5	14,321	4.5	35,900	11.3	1,581	0.5	1,806	0.6	3,656	1.1	317,321	

* Refer to women who live in a postcode outside Victoria, but who deliver at a Victorian hospital

Country of birth missing for 621 women

- Over 90% of mothers living in the rural regions are Australian-born. There is a disproportionately large number of Asian-born mothers in some of the metropolitan regions - 20.3% of mothers living in the Northern Metropolitan region are Asian-born.

Table 2.8: Maternal country of birth, all confinements, by maternal age group 1992–1996

Maternal age group	Australia		Oceania incl NZ		UK inc Eire		Asia inc ME		Nth America		Sth America		Africa			
		%		%		%		%		%		%		%		
<19	9,605	4.0	332	4.6	157	1.1	176	1.2	828	2.3	15	0.9	63	3.5	63	1.7
20-24	40,679	17.1	1,274	17.5	1,165	8.2	1,625	11.3	5,912	16.5	133	8.4	302	16.7	464	12.7
25-29	83,313	34.9	2,336	32.1	4,547	31.9	4,861	33.9	11,199	31.2	408	25.8	651	36.0	1,300	35.6
30-34	75,063	31.5	2,211	30.4	5,762	40.4	4,966	34.7	11,421	31.8	652	41.2	511	28.3	1,205	33.0
35-39	26,030	10.9	987	13.6	2,221	15.6	2,207	15.4	5,514	15.4	311	19.7	239	13.2	527	14.4
40+	3,842	1.6	135	1.9	394	2.8	486	3.4	1,026	2.9	62	3.9	40	2.2	97	2.7
Total*	238,532		7,275		14,246		14,321		35,900		1,581		1,806		3,656	

* Country of birth missing for 621 women

- Non-Australian born women having babies in Victoria tend to be older. For instance, 18.3% of Asian born women are 35 years and older compared with 12.5% of Australian-born women.

2.5 Parity & gravidity

- Parity is defined as the number of previous pregnancies resulting in a birth (liveborn or stillborn).

Table 2.9: Mother's parity, all confinements, 1992–1996

Parity	1992	%	1993	%	1994	%	1995	%	1996	%
None	26,038	39.8	25,424	39.9	25,690	40.2	25,144	40.1	24,626	39.7
One	22,391	34.2	21,915	34.4	21,735	34.0	21,607	34.4	21,907	35.3
Two	11,159	17.1	10,710	16.8	10,925	17.1	10,416	16.6	10,247	16.5
Three	3,870	5.9	3,833	6.0	3,744	5.9	3,620	5.8	3,443	5.6
Four	1,172	1.8	1,169	1.8	1,097	1.7	1,160	1.8	1,126	1.8
Five or more	773	1.2	742	1.2	791	1.2	782	1.2	679	1.1
Unknown	1	0.0	2	0.0	1	0.0	3	0.0	0	0.0
All parities	65,404		63,795		63,983		62,732		62,028	

- Gravidity is defined as the total number of previous pregnancies, regardless of the outcome (therefore including spontaneous and induced abortions).

Table 2.10: Mother's gravidity, all confinements, 1992–1996

Gravidity	1992	%	1993	%	1994	%	1995	%	1996	%
None	20,070	30.7	19,482	30.5	19,913	31.1	19,393	30.9	18,726	30.2
One	20,631	31.5	20,120	31.5	19,872	31.1	19,793	31.6	19,741	31.8
Two	13,116	20.1	12,587	19.7	12,644	19.8	12,125	19.3	12,214	19.7
Three	6,254	9.6	6,326	9.9	6,324	9.9	6,124	9.8	6,105	9.8
Four	2,873	4.4	2,861	4.5	2,827	4.4	2,766	4.4	2,805	4.5
Five or more	2,458	3.8	2,416	3.8	2,401	3.8	2,526	4.0	2,436	3.9
Unknown	2	0.0	3	0.0	2	0.0	5	0.0	1	0.0
All gravidities	65,404		63,795		63,983		62,732		62,028	

- There are small changes between 1992 and 1996, with a decreasing proportion of women having 3 or more births (parity) and an increasing proportion having 3 or more pregnancies (gravity). A linear trend analysis of data available back to 1983¹ shows that both these are highly significant trends:

Table 2.11: Changing proportion of high parity and gravity in Victorian mothers 1983–1996. Results of linear trend analysis

	Parity >=3	Chi sq for linear trend	p value	Gravity >=3	Chi sq for linear trend	p value
1983 - 1996	9.3% - 8.5%	37.07	0.0000	16.1% - 18.2%	115.44	0.0000

- Fewer women are having 3 or more babies, but more women are having 3 or more pregnancies
- Increasing gravity suggests that there are more fetuses being lost during pregnancy than there have been in previous years. Comparison of 1984 data with 1994 data shows that the proportion of spontaneous abortions reported has risen from 17.2% to 19.5%, while the proportion of induced abortions reported has risen from 7.3% to 10.7%.

2.6 Gestation

- There has been a decline in the proportion of babies born after 41 weeks gestation, from 3.9% to 2.2%. There has been a slight increase in the proportion of confinements ending between 32 and 36 weeks.
- The percentage of preterm babies (< 37 weeks) has risen to 6.7%.

Table 2.12: Gestation at delivery, all confinements, 1992–1996

Gestation	1992	%	1993	%	1994	%	1995	%	1996	%
20–27	394	0.6	392	0.6	433	0.7	421	0.7	452	0.7
28–31	405	0.6	376	0.6	397	0.6	420	0.7	393	0.6
32–36	3,223	4.9	3,137	4.9	3,114	4.9	3,182	5.1	3,355	5.4
37–41	58,234	89.0	56,942	89.3	5,727	89.5	56,379	89.9	56,471	91.0
>41	2,550	3.9	2,441	3.8	2,182	3.4	1,872	3.0	1,336	2.2
Unknown	598	0.9	507	0.8	580	0.9	458	0.7	21	0.0
Total	65,404		63,795		63,983		62,732		62,028	

2.7 Onset of labour

- The proportion of spontaneous deliveries rose to a maximum in 1992 of 57.2%, but this figure has declined since then.
- The proportion of inductions was declining until 1992¹ but has increased in the last five years. Births without labour have increased mainly due to an increase in elective caesarean delivery numbers (see Table 2.15).

Table 2.13: Onset of labour, all confinements, 1992–1996

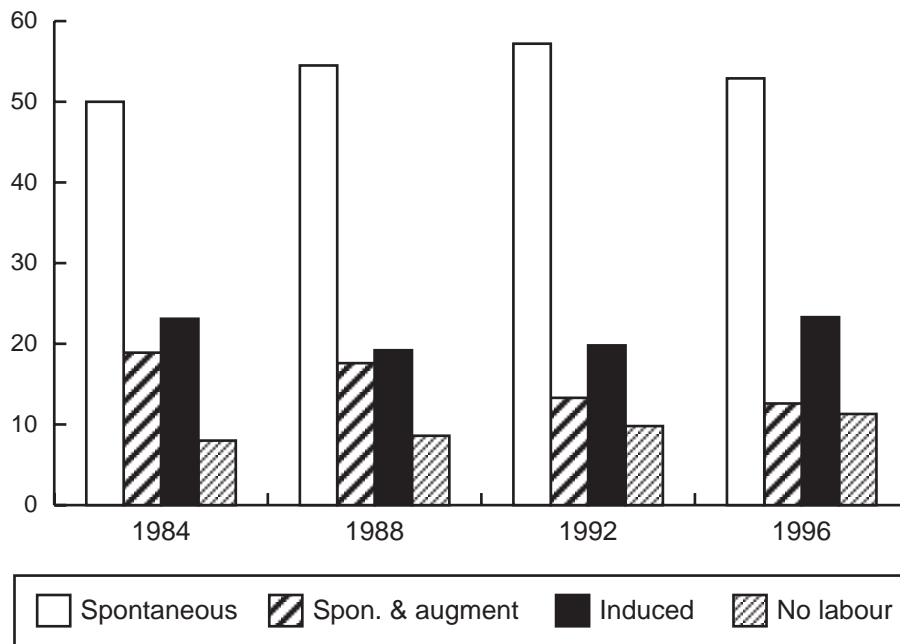
Labour	1992	%	1993	%	1994	%	1995	%	1996	%
Spontaneous	37,407	57.2	35,395	55.5	35,596	55.6	33,918	54.1	32,823	52.9
Spon. & augmt.	8,674	13.3	8,195	12.8	7,715	12.1	7,698	12.3	7,790	12.6
Induced	12,946	19.8	13,668	21.4	13,990	21.9	14,231	22.7	14,423	23.3
No labour	6,377	9.8	6,537	10.2	6,682	10.4	6,885	11.0	6,992	11.3
All confinements	65,404		63,795		63,983		62,732		62,028	

- The table and figure below extract data from earlier reports of the Perinatal Data Collection Unit¹ and Consultative Council⁶ to show changes on onset of labour.

Table 2.14: Onset of labour (per cent), all confinements, 1984–1996

Onset of labour	1984	1988	1992	1996
Spontaneous	50.0	54.5	57.2	52.9
Spontaneous & augmented	18.9	17.6	13.3	12.6
Induced	23.1	19.2	19.8	23.3
No labour	8	8.6	9.8	11.3

Figure 2.3: Labour, all confinements, 1984–1996



2.8 Method of delivery

- As well as declining numbers of forceps deliveries and corresponding increasing caesarean deliveries, some other changes are seen in method of delivery, such as decreasing vaginal breech and increasing ventouse extractions.
- The rise in elective caesareans is greater than the rise in emergency caesareans. Almost 20% of all deliveries were by caesarean section in 1996.

Table 2.15: Method of delivery, all confinements, 1992–1996

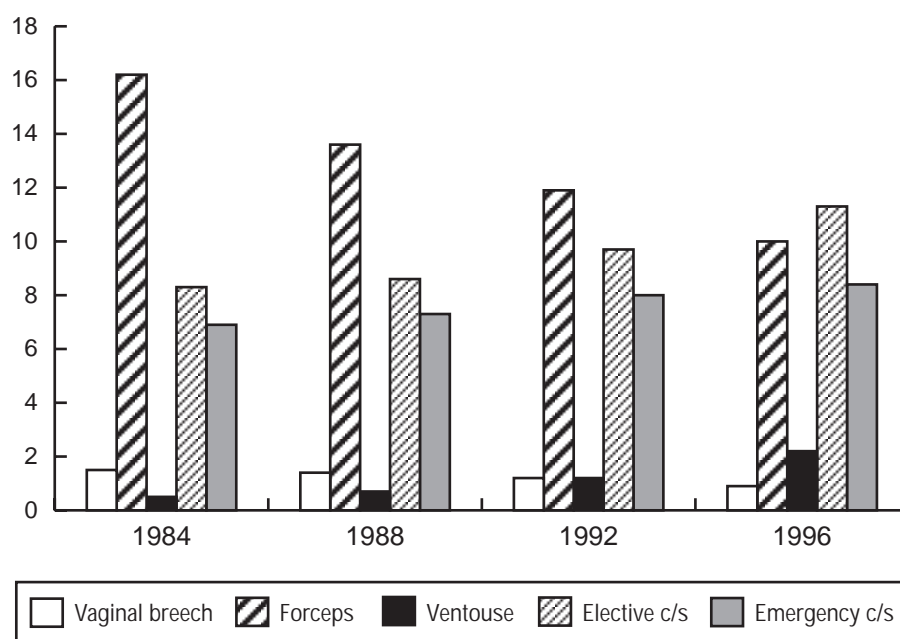
Delivery	1992	%	1993	%	1994	%	1995	%	1996	%
Spontaneous	44,451	68.0	43,203	67.7	43,225	67.6	42,239	67.5	41,692	67.2
Vaginal breech	765	1.2	685	1.1	656	1.0	637	1.0	554	0.9
Forceps	7,812	11.9	7,592	11.9	7,282	11.4	6,817	10.9	6,198	10.0
Ventouse	754	1.2	698	1.1	841	1.3	946	1.5	1,395	2.2
Caesarean	11,608	17.7	11,607	18.1	11,968	18.7	11,996	19.1	12,178	19.7
* elective	6,365	9.7	6,538	10.2	6,681	10.4	6,885	11.0	6,992	11.3
* emergency	5,243	8.0	5,069	7.9	5,287	8.3	5,111	8.1	5,186	8.4
Unknown	14	0.0	10	0.0	11	0.0	7	0.0	11	0.0
All deliveries	65,404		63,795		63,983		62,732		62,028	

- The table and figure below extract data from earlier reports of the Perinatal Data Collection Unit¹ and Consultative Council⁶ to show changes in the proportions of the methods of deliveries

Table 2.16: Method of delivery (per cent), all confinements, 1984–1996

Method of delivery	1984	1988	1992	1996
Spontaneous	66.6	68.5	68.0	67.2
Vaginal breech	1.5	1.4	1.2	0.9
Forceps	16.2	13.6	11.9	10.0
Ventouse	0.5	0.7	1.2	2.2
Elective caesarean	8.3	8.6	9.7	11.3
Emergency caesarean	6.9	7.3	8.0	8.4

Figure 2.4: Method of delivery (other than spontaneous), all confinements, 1984–1996



- One third of primiparous women 35 years and older have a spontaneous vaginal delivery. In general, there are many more operative deliveries in women 35 years and older, compared with younger women.
- Forceps deliveries are more frequent in primiparous women of all ages compared with multiparous women.

2.17: Method of delivery by maternal age group and parity, confinements, 1992–1996*

Type of delivery	<20	%	20–34	%	35+	%
<i>Primiparous</i>						
Spontaneous	7,127	74.5	58,790	54.4	3,134	33.9
Vaginal breech	85	0.9	1,026	0.9	99	1.1
Forceps	1,195	12.5	24,512	22.7	2,557	27.7
Ventouse	158	1.7	2,691	2.5	227	2.5
Caesarean	992	10.3	21,075	19.5	3,226	34.8
<i>elective</i>	309	3.2	6,856	6.3	1,317	14.2
<i>emergency</i>	683	7.1	14,219	13.2	1,909	20.6
Unknown	4	0	18	0	3	0
Total	9,561		108,112		44,187	
<i>Multiparous</i>						
Spontaneous	1,480	87.0	119,992	77.7	24,370	69.7
Vaginal breech	25	1.5	1,656	1.1	406	1.2
Forceps	34	2.0	5,670	3.7	1,731	5.0
Ventouse	8	0.5	1,210	0.8	340	1.0
Caesarean	154	9.1	25,821	16.7	8,089	23.2
<i>elective</i>	95	5.6	18,892	12.2	5,992	17.1
<i>emergency</i>	59	3.5	6,929	4.5	2,097	6.0
Unknown	1	0.1	2,582	0	5	0
Total	1,702		154,371		34,941	

*9 women with unknown maternal age group

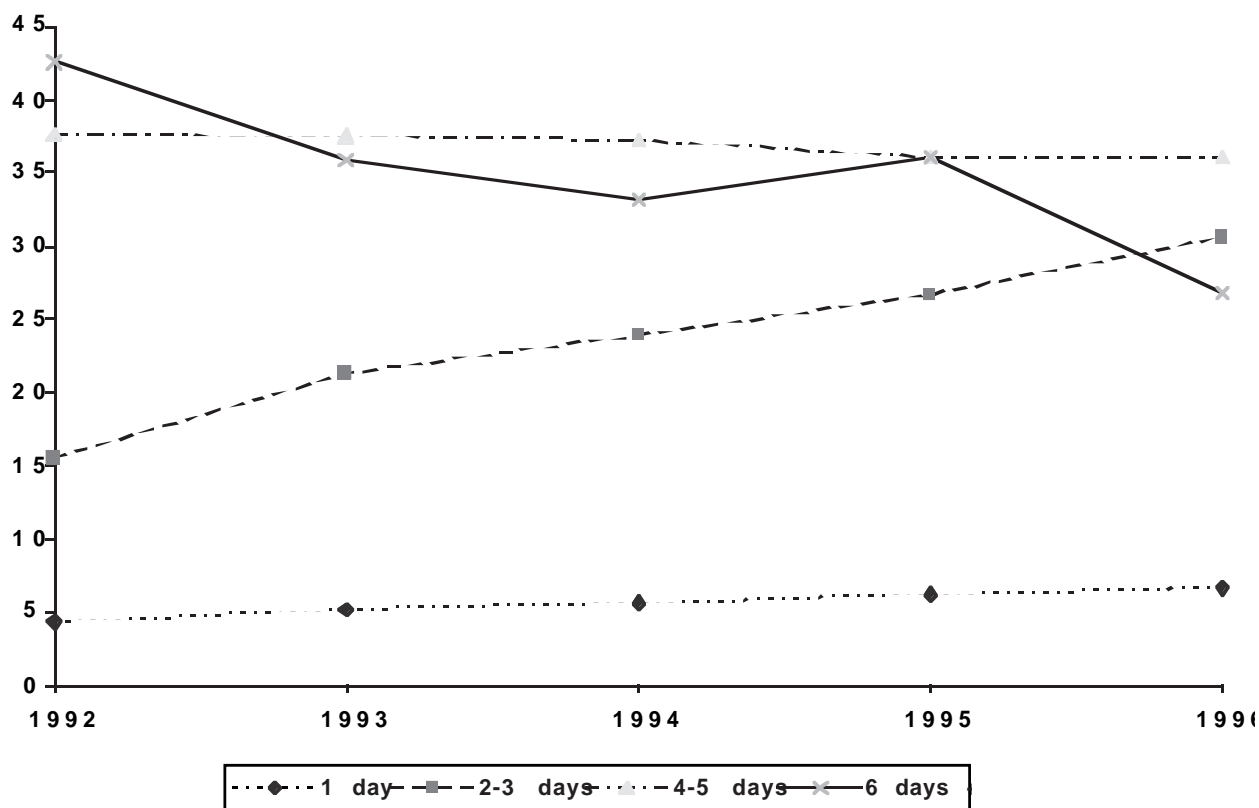
2.9 Postnatal length of stay

- The number of women having a shorter length of stay (2 to 3 days) in hospital after having a baby has doubled in the last five years and corresponds to a decline in women staying six days or more.

Table 2.18: Postnatal length of stay, all confinements, 1992–1996

Postnatal length of stay	1992	%	1993	%	1994	%	1995	%	1996	%
1 day	2,879	4.4	3,303	5.2	3,663	5.7	3,914	6.2	4,128	6.7
2 days	3,473	5.3	4,607	7.2	5,126	8.0	5,669	9.0	6,330	10.2
3 days	6,665	10.2	9,000	14.1	10,183	15.9	11,055	17.6	12,579	20.3
4 days	11,551	17.7	12,275	19.2	12,434	19.4	11,869	18.9	11,463	18.5
5 days	12,990	19.9	11,702	18.3	11,373	17.8	10,816	17.2	10,863	17.5
6 days or more	27,846	42.6	22,908	35.9	21,204	33.1	19,409	30.9	16,665	26.9
All confinements	65,404		63,795		63,983		62,732		62,028	

Figure 2.5: Postnatal length of stay, all confinements, 1992–1996



- Overall, the proportion staying in hospital for 4 to 5 days remains constant. This constant is comprised of an increasing number of women having caesareans and a decreasing number of women having spontaneous vaginal delivery.

Table 2.19: Postnatal length of stay by delivery type, confinements, 1992–1996

Postnatal length of stay	1992	%	1993	%	1994	%	1995	%	1996	%
<i>Spontaneous delivery</i>										
1 day	2,508	5.6	2,940	6.8	3,241	7.5	3,446	8.1	3,699	8.9
2 days	3,100	7.0	4,121	9.5	4,608	10.7	5,050	11.9	5,634	13.5
3 days	5,907	13.3	7,870	18.2	8,838	20.4	9,544	22.5	10,592	25.4
4 days	9,742	21.9	9,780	22.6	9,796	22.7	9,087	21.5	8,290	19.9
5 days	9,632	21.7	7,974	18.5	7,384	17.1	6,684	15.8	6,534	15.7
6 days or more	13,562	30.5	10,518	24.3	9,358	21.6	8,518	20.1	6,943	16.6
Total	44,451		43,203		43,225		42,329		41,692	
<i>Caesarean delivery</i>										
1 day	56	0.5	55	0.5	78	0.7	92	0.8	103	0.9
2 days	118	1.0	129	1.1	177	1.5	197	1.6	255	2.1
3 days	225	1.9	337	2.9	387	3.2	459	3.8	552	4.5
4 days	544	4.7	810	7.0	925	7.7	1,200	10.0	1,675	13.8
5 days	1,364	11.8	1,913	16.5	2,333	19.5	2,544	21.2	2,740	22.5
6 days or more	9,301	80.1	8,363	72.1	8,068	67.4	7,504	62.6	6,853	56.3
Total	11,608		11,607		11,968		11,996		12,178	

3. Infant factors

3.1 Gender

- There continues to be an excess of male babies born.

Table 3.1: Gender of infants, all births, 1992–1996

Sex	1992	%	1993	%	1994	%	1995	%	1996	%
Male	33,993	51.3	33,260	51.4	33,489	51.6	32,744	51.4	32,567	51.7
Female	32,298	48.7	31,464	48.6	31,430	48.4	30,949	48.6	30,375	48.3
Indeterminate	14	0.0	13	0.0	13	0.0	22	0.0	9	0.0
All births	66,305		64,737		64,932		63,715		62,951	

- Data presented in the 12 year congenital malformation report⁸ show that there are more male babies with congenital malformations (55.4%) than females (43.8%), and more male stillbirths and neonatal deaths (Table 3.2).

Table 3.2: Gender of infants by discharge status, all births, 1992–1996

Gender	Survived > 28 days	%	Stillbirth	%	Neonatal death	%	Total
Male	164,204	51.4	1,224	53.6	625	56.6	166,158
Female	155,034	48.6	1,006	44.0	476	43.1	156,516
Indeterminate	13	0.0	55	2.4	3	0.3	71
Total	319,251		2,285		1,104		322,640

3.2 Resuscitation

- Almost 83 per cent of all infants born in Victoria do not have any form of resuscitation.

3.3 Birthweight

- The percentage of low birthweight babies (< 2,500g) has risen from 6.1% to 6.5%.

Table 3.3: Birthweight distribution, all births, 1992–1996

Birthweight (grams)	1992	%	1993	%	1994	%	1995	%	1996	%
less than 500	153	0.2	161	0.2	187	0.3	188	0.3	222	0.4
500–999	328	0.5	283	0.4	326	0.5	322	0.5	299	0.5
1000–1499	365	0.6	355	0.5	384	0.6	387	0.6	353	0.6
1500–1999	775	1.2	759	1.2	756	1.2	787	1.2	752	1.2
2000–2499	2,385	3.6	2,466	3.8	2,432	3.7	2,467	3.9	2,382	3.8
2500–2999	10,130	15.3	9,877	15.3	9,841	15.2	9,868	15.5	9,508	15.1
3000–3499	24,189	36.5	23,541	36.4	23,749	36.6	22,960	36.0	22,533	35.8
3500–3999	20,225	30.5	19,779	30.6	19,750	30.4	19,437	30.5	19,425	30.9
4000–4499	6,548	9.9	3,647	9.8	6,325	9.7	6,151	9.7	6,297	10.0
4500–4999	1,029	1.6	1,013	1.6	1,056	1.6	1,004	1.6	1,047	1.7
5000 +	122	0.2	114	0.2	109	0.2	118	0.2	108	0.2
Unknown	56	0.1	42	0.1	17	0.0	26	0.0	25	0.0
All births	66,305		64,737		64,932		63,715		62,951	

3.4 Apgar score at 5 minutes

- There is a slightly higher proportion of babies with apgar of nine and a corresponding decrease in those with apgar score of ten. For apgar score less than seven, there is no change.

Table: 3.4: Infant's Apgar score at 5 minutes, livebirths only, 1992–1996

Apgar score	1992	%	1993	%	1994	%	1995	%	1996	%
0	27	0.0	17	0.0	30	0.3	30	0.0	20	0.0
1	67	0.1	60	0.1	52	0.1	50	0.1	66	0.1
2	45	0.1	32	0.0	38	0.6	35	0.1	30	0.0
3	52	0.1	59	0.1	50	0.1	52	0.1	54	0.1
4	98	0.1	95	0.1	111	0.2	86	0.1	86	0.1
5	188	0.3	208	0.3	209	0.3	197	0.3	164	0.3
6	383	0.6	381	0.6	408	0.3	397	0.6	443	0.7
7	954	1.4	978	1.5	957	1.5	948	1.5	880	1.4
8	3,201	4.9	2,993	4.7	3,047	4.7	3,116	4.9	2,991	4.8
9	31,473	47.8	32,506	50.5	34,090	52.9	34,483	54.5	35,476	56.8
10	29,251	44.4	26,908	41.8	25,373	39.4	23,753	37.6	22,180	35.5
Unknown	117	0.2	85	0.1	83	0.1	98	0.2	94	0.2
All births	66,856		64,322		64,448		63,245		62,484	

3.5 Discharge status

- There has been no change in the proportion of perinatal deaths or livebirths registered as births at and after 20 weeks gestation (or where gestation is unknown, birthweight 400 grams or more).

Table 3.5: Discharge status of infants, all births, 1992–1996

Discharge Status	1992	%	1993	%	1994	%	1995	%	1996	%
Stillbirth	449	0.7	415	0.6	484	0.7	470	0.7	467	0.7
Neonatal death	242	0.4	206	0.3	214	0.3	233	0.4	209	0.3
Livebirth	65,614	98.9	64,116	99.0	64,234	98.9	63,012	98.9	62,275	98.9
All births	66,305		64,737		64,932		63,715		62,951	

NB: These figures differ from those in the Consultative Council Annual Reports⁶ which reports on births of 22 weeks and later, to allow for comparisons with other States and international agencies.

4. Multiple births

4.1 Trends

- A steady increase in the proportion of twin births has been evident until 1996, when it dropped slightly.
- There has been no significant linear trend for triplet births over the last 10 years (Chi sq 2.61, p=0.11)

Table 4.1: Multiple births, 1992–1996

Year	Twins*	% of all births	Triplets*	% of all births	Quadruplets*	% of all births
1992	1710	2.58	69	0.10	0	0
1993	1788	2.76	72	0.11	0	0
1994	1830	2.82	42	0.06	8	0.01
1995	1850	2.90	87	0.14	0	0
1996	1762	2.80	63	0.10	0	0
Total	8940		333		8	

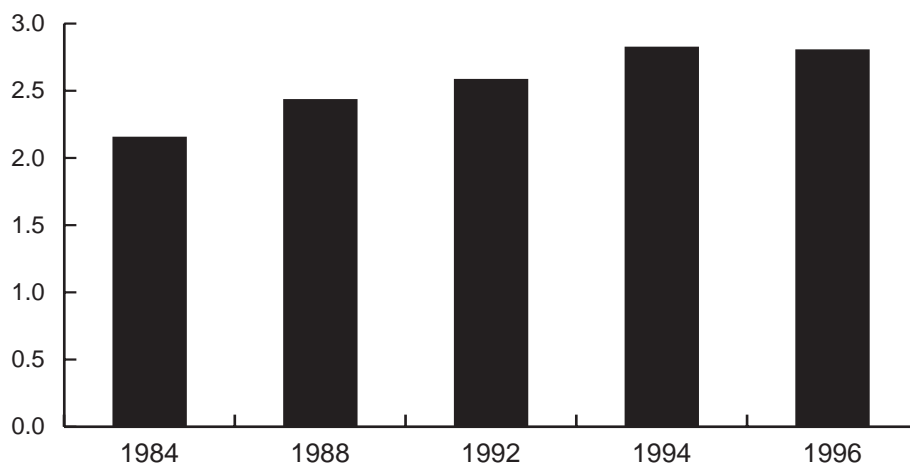
*Figures relate to total number of multiples, not sets (ie 21 sets of triplets in 1996 or 63 births)

- The table and figure below extract data from earlier reports of the Perinatal Data Collection Unit¹ and the Consultative Council⁶ to show twins as a proportion of all births.

Table 4.2: Twins as a proportion of all births, 1984–1996

Year	% twins
1984	2.15
1988	2.43
1992	2.58
1996	2.80

Figure 4.1: Twins as a proportion of all births, 1984–1996



4.2 Perinatal mortality – pooled data

- There has been a decrease in perinatal mortality for singletons, twins and triplets since 1992¹. There is increasing mortality with increasing plurality.

Table 4.3: Perinatal mortality – pooled data 1992–1996

	Number	Perinatal Mortality Rate/1000
Singletons	2,935/313,359	9.4
Twins	426/8,940	47.6
* 1st	198/4,470	44.3
* 2nd	228/4,470	51.0
Triplets	28/333	84.1
* 1st	8/111	72.1
* 2nd	12/111	108.1
* 3rd	8/111	72.1
Quads	0/8	0

- The pooled data on twin perinatal mortality rate (PMR), 47.6/1000 (Table 4.3), includes deaths of 147 twins between 400 and 500 grams. The 5 year average PMR for twins \geq 500 grams is 31.7/1000.

Table 4.4: Trends in perinatal mortality rate (PMR) of twins \geq 500 gms

Year	Perinatal deaths	Births	PMR
1992	55	1,685	32.6
1993	51	1,761	29.0
1994	64	1,797	35.6
1995	60	1,820	33.0
1996	49	1,728	28.4

- When adjusted for birthweight, the PMR for singletons and twins is similar for extremely low birthweight babies (<1000gm), is higher for singleton babies of weight 1000-2999 gm, but the PMR for twins 3000 gm and over is consistently higher than for singletons.

Table 4.5: Birthweight-specific mortality – pooled data, 1992–1996

Weight	Singletons	Twins	Triplets	Quadruplets
< 500	983.8	986.6	1000	0
500-999	541.4	442.1	272.7	0
1000-1499	177.4	97.5	0	0
1500-1999	88.6	27.6	0	0
2000-2499	23.1	10.2	0	0
2500-2999	6.3	4.3	0	0
3000-3499	2.4	4.2	0	0
3500-3999	1.6	7.3	0	0
4000-4499	1.8	71.4	0	0
4500-4999	2.9	0	0	0
>=5000	5.3	0	0	0
Unknown	461	600	0	0

4.3 Gestation at delivery

- 5.7% of singleton confinements are pre-term (< 37 weeks) compared with 48.3% of twins and almost all triplets.

Table 4.6: Gestational age by plurality (confinements) – pooled data 1992–1996

Maturity	Singletons	%	Twins	%	Triplets	%	Quads	%
20-27	1,862	0.6	216	4.8	14	12.6	0	0.0
28-31	1,702	0.5	269	6.0	19	17.1	1	50.0
32-36	14,261	4.6	1,676	37.5	73	65.8	1	50.0
37-41	283,029	90.3	2,271	50.8	3	2.7	0	0.0
>= 41	10,380	3.3	1	0.0	0	0.0	0	0.0
Unknown	2,125	0.7	37	0.8	2	1.8	0	0.0

4.4 Method of delivery

- The rank of the twin influences the type of delivery, the first twin being born by spontaneous vaginal delivery in 33.4% of cases, but the second in only 19.6% of deliveries.

Table 4.7: Method of delivery for multiple births by rank – pooled data, 1992–1996

Delivery	Twin 1 %	Twin 2 %	Triplet 1 %	Triplet 2 %	Triplet 3 %
Spontaneous	33.4	19.6	9.9	5.4	6.3
Vaginal breech	4	22.2	4.5	15.3	14.4
Forceps	19	12.8	7.2	0	0
Ventouse	1.6	1.7	0	0	0
Elective caesarean	26.2	26.2	50.5	50.5	49.5
Emergency caesarean	15.7	17.0	27.9	28.8	29.7

- A much higher proportion of infants from multiple gestations are born by caesarean section

Table 4.8: Method of delivery, singleton versus multiple births, 1992–1996, pooled data

Delivery	Singleton %	Multiple %
Spontaneous	68.1	25.8
Forceps	11.1	15.4
Breech	1.0	13.0
Ventouse	1.5	1.6
Elective c/s	10.3	27.1
Emergency c/s	8.0	16.8

4.5 Maternal age

- There is a disproportionately high incidence of twin and triplet confinements in women 30 years and older.

Table 4.10: Maternal age and multiple births (confinements) – pooled data, 1992–1996*

Maternal age	Singletons	%	Twins	%	Triplets	%
12-14	63	0	0	0	0	0
15-19	11,144	3.6	56	1.3	0	0
20-24	51,153	16.3	527	11.8	7	6.3
25-29	107,319	34.2	1,467	32.8	38	34.2
30-34	100,279	32.0	1,642	36.7	49	44.1
35-39	37,400	11.9	684	15.3	14	12.6
40-44	5,784	1.8	88	2.0	3	2.7
45+	209	0.1	5	0.1	0	0
Unknown	9	0	0	0	0	0

* Too few quadruplets for inclusion

5. Aboriginality

5.1 Numbers

- Less than one per cent of all births occur to Aboriginal women in Victoria

Table 5.1: Births and confinements to Aboriginal women, 1992–1996

	1992	1993	1994	1995	1996
Confinements	412	477	428	417	448
Births	414	481	433	423	452

NB: For the following tables, the data have been pooled due to the small numbers involved

5.2 Maternal age

- There is a highly significant five-fold increased likelihood that an Aboriginal woman giving birth will be a teenager compared with a non-Aboriginal woman.

Table 5.2: Maternal age differences between Aboriginal and non-Aboriginal mothers – pooled data, 1992–1996

Age group	Aboriginal %	non- Aboriginal %	chi-square	p-value	RR	95% CI
< 20	14.9	3.4	835.3	0.0000	4.78	4.26–5.37
20–34	78.1	82.6	30.4	0.0000	0.75	0.68–0.83
35+	7	13.9	88.2	0.0000	0.46	0.39–0.55

RR: relative risk

CI: confidence interval

5.3 Method of delivery

- Aboriginal women are less likely to have a forceps or elective caesarean delivery than non-Aboriginal women. Overall the rate of spontaneous delivery is significantly higher for Aboriginal women compared with non-Aboriginal women. There is a higher proportion of emergency caesarean deliveries in Aboriginal women, but this is not significant.

Table 5.3: Method of delivery – Aboriginal confinements 1992–1996

Method of delivery	1992	%	1993	%	1994	%	1995	%	1996	%
Spontaneous	303	73.5	340	71.3	302	70.6	307	73.6	324	72.3
Caesarean	65	15.8	84	17.6	79	18.5	78	18.7	86	19.2
<i>elective</i>	30	7.3	45	9.4	35	8.2	35	8.4	49	10.9
<i>emergency</i>	35	8.5	39	8.2	44	10.3	43	10.3	37	8.3
Forceps	34	8.3	48	10.1	27	6.3	23	5.5	24	5.4
Vaginal breech	8	1.9	3	0.6	8	1.9	5	1.2	4	0.9
Ventouse	2	0.5	2	0.4	12	2.8	4	1.0	10	2.2
Unknown	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
All types of delivery	412		477		428		417		448	

Table 5.4: Method of delivery – differences between Aboriginal and non-Aboriginal mothers – pooled data 1992–1996

Delivery	Aboriginal %	non- Aboriginal %	chi-square	p-value	RR	95% CI
Forceps	7.1	11.3	36.7	0.000	0.6	0.52-0.72
Elective caesarean	8.9	10.5	6.22	0.013	0.83	0.72-0.96
Emergency caesarean	9.1	8.1	2.54	1.111	1.13	0.97-1.30
Spontaneous	72.2	67.6	21.56	0.000	1.25	1.14-1.37

5.4 Birthweight

- Babies born to Aboriginal women have a significantly higher chance of being in the birthweight category of 1500–2999 grams and a lower chance of weighing 3000 grams or more, compared to non-Aboriginal women. They are not at an increased risk of having a baby < 1500 grams

Table 5.5: Birthweight of Aboriginal and non-Aboriginal infants – pooled data, 1992–1996

Birthweight	non-		chi-square	p-value	RR	95% CI
	Aboriginal %	Aboriginal %				
< 1500	1.6	1.3	1.49	0.2226	1.23	0.88–1.70
1500–2999	26.8	20.2	60.36	0.0000	1.45	1.32–1.59
3000+	71.5	78.5	62.86	0.0000	0.69	0.63–0.76

5.5 Mortality

- The overall perinatal mortality rate is significantly higher for Aboriginal babies compared with non-Aboriginal. Actual numbers are small so that the difference between the two populations in rate of stillbirths per 1000 births approaches significance, but the neonatal death rate difference is not significant.

Table 5.6: Mortality rates for infants born to Aboriginal and non-Aboriginal mothers – pooled data, 1992–1996

Category	Aboriginal	non-Aboriginal	chi-square	p value	RR	95% CI
	/1000	/1000				
Stillbirths	10.4	7.1	3.6	0.059	1.48	0.98–2.23
Neonatal deaths	5.0	3.5	1.6	0.204	1.46	0.81–2.64
Perinatal	15.4	10.6	5.2	0.023	1.48	1.05–2.07

6. Comparison of selected factors by birthweight

6.1 Method of delivery

- The caesarean delivery rate of babies in the two lowest birthweight categories (less than 1500 gram and 1500–2499 grams) has increased to a maximum of 39% in 1995. There is also a high rate of caesarean deliveries when the baby weighs 4500 grams or more.

Table 6.1: Birthweight group by method of delivery, 1992–1996*

Weight Group	1992	%	1993	%	1994	%	1995	%	1996	%
<i>< 1500 grams</i>										
Forceps	34	4.0	32	4.0	32	3.6	19	2.1	27	3.1
Vaginal breech	182	21.5	173	21.7	242	27.0	194	21.6	154	17.6
Spontaneous	339	40.1	289	36.2	331	36.9	323	36.0	360	41.2
Caesarean	263	31.1	290	36.3	329	36.7	354	39.5	323	37.0
<i>elective</i>	167	19.7	185	23.2	203	22.6	234	26.1	208	23.8
<i>emergency</i>	96	11.3	105	13.1	126	14.0	120	13.4	115	13.2
Ventouse	20	2.4	10	1.3	7	0.8	3	0.3	7	0.8
Unknown	8	0.9	5	0.6	6	0.7	4	0.4	3	0.3
Total	846		799		897		897		874	
<i>1500–2499 grams</i>										
Forceps	402	12.7	316	9.8	325	10.2	356	10.9	301	9.6
Vaginal breech	172	5.4	170	5.3	163	5.1	164	5.0	135	4.3
Spontaneous	1,464	46.3	1,573	48.8	1,573	49.3	1,578	48.5	1,757	56.1
Caesarean	1,104	34.9	1,140	35.3	1,099	34.5	1,124	34.5	1,156	36.9
<i>elective</i>	634	20.1	679	21.1	627	19.7	676	20.8	667	21.3
<i>emergency</i>	470	14.9	461	14.3	472	14.8	448	13.8	489	15.6
Ventouse	18	0.6	24	0.7	28	0.9	30	0.9	44	1.4
Unknown	0	0.0	2	0.1	0	0.0	2	0.1	5	0.2
Total	3,160		3,225		3,188		3,254		3,134	

* 166 cases within unknown birthweight

(Continued)

Table 6.1: Birthweight group by method of delivery, 1992–1996* (cont.)

Weight Group	1992	%	1993	%	1994	%	1995	%	1996	%
<i>2500–4499 grams</i>										
Forceps	7,375	12.1	7,180	12.1	6,885	11.5	6,456	11.1	5,822	10.1
Vaginal breech	616	1.0	545	0.9	722	1.2	485	0.8	430	0.7
Spontaneous	42,083	68.9	40,801	68.5	40,793	68.4	39,886	68.3	39,295	68.0
Caesarean	10,299	16.9	10,368	17.4	10,668	17.9	10,676	18.3	10,898	18.9
<i>elective</i>	5,662	9.3	5,840	9.8	5,998	10.1	6,166	10.6	6,289	10.9
<i>emergency</i>	4,637	7.6	4,528	7.6	4,670	7.8	4,510	7.7	4,579	7.9
Ventouse	711	1.2	647	1.1	796	1.3	909	1.6	1,336	2.3
Unknown	8	0.0	3	0.0	7	0.0	3	0.0	12	0.0
Total	61,092		59,544		59,665		58,416		57,763	
<i>4500+ grams</i>										
Forceps	150	13.0	155	13.8	142	12.2	109	9.7	138	11.9
Vaginal breech	1	0.1	5	0.4	1	0.1	1	0.1	2	0.2
Spontaneous	702	61.0	705	62.6	708	60.8	704	62.7	703	60.9
Caesarean	283	24.6	244	21.7	294	25.2	287	25.6	280	24.2
<i>elective</i>	97	8.4	96	8.5	110	9.4	96	8.6	99	8.6
<i>emergency</i>	186	16.2	148	13.1	184	15.8	191	17.0	181	15.7
Ventouse	15	1.3	18	1.6	20	1.7	21	1.9	32	2.8
Unknown	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	1,151		1,127		1,165		1,122		1,155	

* 166 cases within unknown birthweight

6.2 Neonatal survivors

- There has been no significant change in the proportion of babies of extremely and very low birth weight that are stillborn. However, slight (non-significant) improvements can be seen in survival of liveborn babies in these birthweight categories.

Table 6.2: Survival of infants under 1500 grams – pooled data, 1992–1996

Weight	1992	1993	1994	1995	1996
<i>500–999 gm</i>					
Total births	328	283	326	322	299
Stillborn	104	87	109	85	85
% Stillborn	31.7	30.7	33.4	26.3	28.4
Liveborn	224	196	217	237	214
% of liveborn that survive >28 days	66.5	71.4	68.7	70.9	70.1
<i>1000–1499 gm</i>					
Total births	365	355	384	387	353
Stillborn	41	37	30	49	30
% Stillborn	11.2	10.4	7.8	12.7	8.5
Liveborn	324	318	354	338	323
% of liveborn that survive >28 days	94.4	94.0	94.4	93.4	95.4

- When the extremely low birth weight category (<1000gm) is shown in 100gm categories, it is apparent that there has been a decline in survival of babies in the 500–599 gm category. This category probably includes a substantial proportion of terminations for malformations which are categorised as stillbirths. In other categories there are slight improvements or fluctuations in survival.

Table 6.3: Percent survival of extremely low-birthweight liveborn infants, 1992–1996 (weight in 100g categories as a percentage of survivors over livebirths)

Weight (g)	1992	1993	1994	1995	1996
500–599	35.7	45.5	20.0	32.4	21.9
600–699	48.8	51.4	63.9	55.0	64.3
700–799	62.2	71.1	69.2	74.1	65.0
800–899	78.6	83.0	76.9	83.3	88.1
900–999	85.0	87.2	93.6	94.2	85.5

7. Comparison of selected factors by hospital type

7.1 Place of birth

- The number and proportion of planned homebirths has declined, but the figures for unplanned (emergency home or in-transit deliveries) deliveries remain steady.

Table 7.1: Place of birth, all births, 1992–1996

Place of birth	1992	%	1993	%	1994	%	1995	%	1996	%
Planned homebirths	170	0.3	148	0.2	115	0.2	110	0.2	118	0.2
Unplanned out-of-hospital births	231	0.4	215	0.3	218	0.3	207	0.3	215	0.3
Hospital births	65,904	99.4	64,374	99.4	64,599	99.5	63,398	99.5	62,618	99.5
All births	66,305		64,737		64,932		63,715		62,951	

7.2 Hospital type

NB: This classification of hospitals is different from that used in the previous report¹. (See Appendix B for definition.)

- There is a small increase in women giving birth in Private hospitals.
- These figures are used as the basis for the calculation of percentages in Tables 7.4 and 7.5.

Table 7.2: Total confinements by hospital type, 1992–1996*

Hospital Type	1992	%	1993	%	1994	%	1995	%	1996	%
Level 3	15,970	24.4	15,222	23.9	15,167	23.7	14,930	23.8	14,579	23.5
Metro Public	17,771	27.2	16,956	26.6	16,330	25.5	16,407	26.2	16,576	26.7
Private#	15,453	23.6	15,922	25.0	16,783	26.2	16,280	26.0	16,020	25.8
Country Base	7,553	11.5	7,259	11.4	7,440	11.6	7,272	11.6	6,943	11.2
Other Country	8,490	13.0	8,287	13.0	8,146	12.7	7,733	12.3	7,794	12.6
Total	65,237		63,646		63,866		62,622		61,912	

* Does not include planned homebirths

Includes hospitals in both metropolitan and country areas with private patients only. This category does not include private patients having babies in the other hospital types

7.3 Maternal age

- The highest proportion of older women giving birth is seen in Private hospitals. There is a much smaller proportion of women aged less than 25 giving birth in Private hospitals.

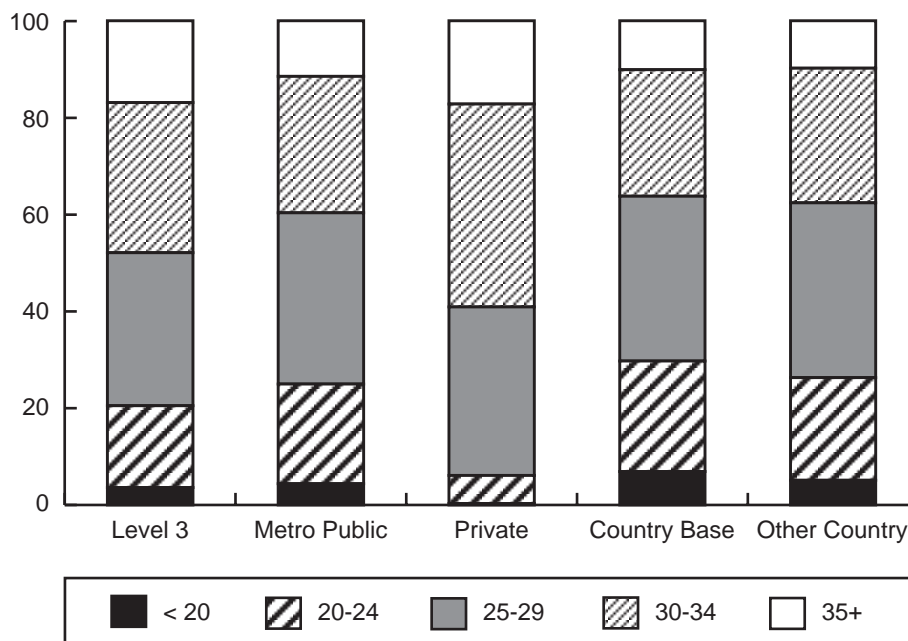
Table 7.3: Maternal age at delivery by hospital type – confinements – pooled data, 1992–1996*

Hospital Type	< 20	%	20–24	%	25–29	%	30–34	%	35+	%	Total
Level 3	2,734	3.6	12,826	16.9	23,975	31.6	23,492	31.0	12,841	16.9	75,868
Metro Public	3,672	4.4	17,288	20.6	29,726	35.4	23,722	28.2	9,631	11.5	84,039
Private	248	0.3	4,644	5.8	27,990	34.8	33,722	41.9	13,853	17.2	80,457
Country Base	2,534	6.9	8,326	22.8	12,395	34.0	9,515	26.1	3,696	10.1	36,466
Other Country	2,071	5.1	8,567	21.2	14,591	36.1	11,259	27.8	3,962	9.8	40,450
Total#	11,259		51,651		108,677		101,710		43,983		317,280

* Does not include planned homebirths

5 women with unknown maternal age who delivered in hospital

Figure 7.1: Maternal age by hospital type – pooled data, 1992–1996



7.4 Operative delivery

- There is a declining rate of forceps usage in all hospital types, but particularly in Level 3 and Metro Public hospitals.
- Caesarean delivery rates (elective and emergency combined) have risen in all hospital types except for Metro Public. The rise is particularly apparent in the two country hospital types where the proportional increase was 19% in Country Base, 27% in Other Country, compared with a 15% rise in Level 3 and 11% in Private hospitals.

Table 7.4: Caesarean & forceps deliveries by hospital type, confinements, 1992–1996

Hospital Type	1992	%	1993	%	1994	%	1995	%	1996	%
<i>Forceps</i>										
Level 3	2,432	15.2	2,339	15.4	2,124	14.0	1,925	12.9	1,814	12.4
Metro Public	1,777	10.0	1,532	9.0	1,383	8.5	1,342	8.2	1,212	7.3
Private	2,361	15.3	2,432	15.3	2,510	15.0	2,437	15.0	2,194	13.7
Country Base	698	9.2	725	10.0	715	9.6	608	8.4	570	8.2
Other Country	543	6.4	564	6.8	549	6.5	504	6.5	408	5.2
<i>Caesarean</i>										
Level 3	3,014	18.9	3,035	19.9	3,118	20.6	3,192	21.4	3,157	21.7
Metro Public	3,072	17.3	2,780	16.4	2,670	16.4	2,661	16.2	2,741	16.5
Private	3,197	20.7	3,343	21.0	3,578	21.3	3,560	21.9	3,665	22.9
Country Base	1,246	16.5	1,352	18.6	1,416	19.0	1,381	19.0	1,361	19.6
Other Country	1,079	12.7	1,097	13.2	1,186	14.6	1,202	15.5	1,254	16.1

- Percentages calculated using annual births per hospital type (see Table 7.2).

7.5 Postnatal length of stay

- There has been a dramatic decline in the proportion of women staying in Metro Public hospitals for six days or more over the last five years. All other hospital types have fewer staying this length of time also. All hospital types except Private have approximately doubled the proportion of women staying two days or less.

Table 7.5: Postnatal length of stay by hospital type, all confinements, 1992–1996

Hospital Type	1992	%	1993	%	1994	%	1995	%	1996	%
<i>Six Days or more</i>										
Level 3	6,126	38.4	4,568	30.0	4,084	26.9	3,537	23.7	2,548	17.5
Metro Public	4,721	26.6	3,049	18.0	2,296	14.1	1,911	11.6	1,481	8.9
Private	10,934	70.8	10,732	67.4	11,120	66.3	10,765	66.1	9,786	61.1
Country Base	2,641	35.0	1,948	26.8	1,726	23.2	1,504	20.7	1,341	19.3
Other Country	3,408	40.1	2,597	31.3	1,964	24.1	1,689	21.8	1,508	19.3
<i>Two Days or less</i>										
Level 3	1,965	12.3	2,387	15.7	24,721	16.3	2,685	18.0	3,040	20.9
Metro Public	2,167	12.2	2,839	16.7	3,120	19.1	3,563	21.7	3,866	23.3
Private	381	2.5	382	2.4	428	2.6	407	2.5	4,212	2.6
Country Base	1,029	13.6	1,352	18.6	1,701	22.9	1,695	23.3	1,806	26.0
Other Country	660	7.8	814	9.8	967	11.9	1,127	14.6	1,209	15.5

- Percentages calculated using annual births per hospital type (see Table 7.2).

Figure 7.2: Postnatal length of stay (6 days or more) by hospital type, 1992–1996

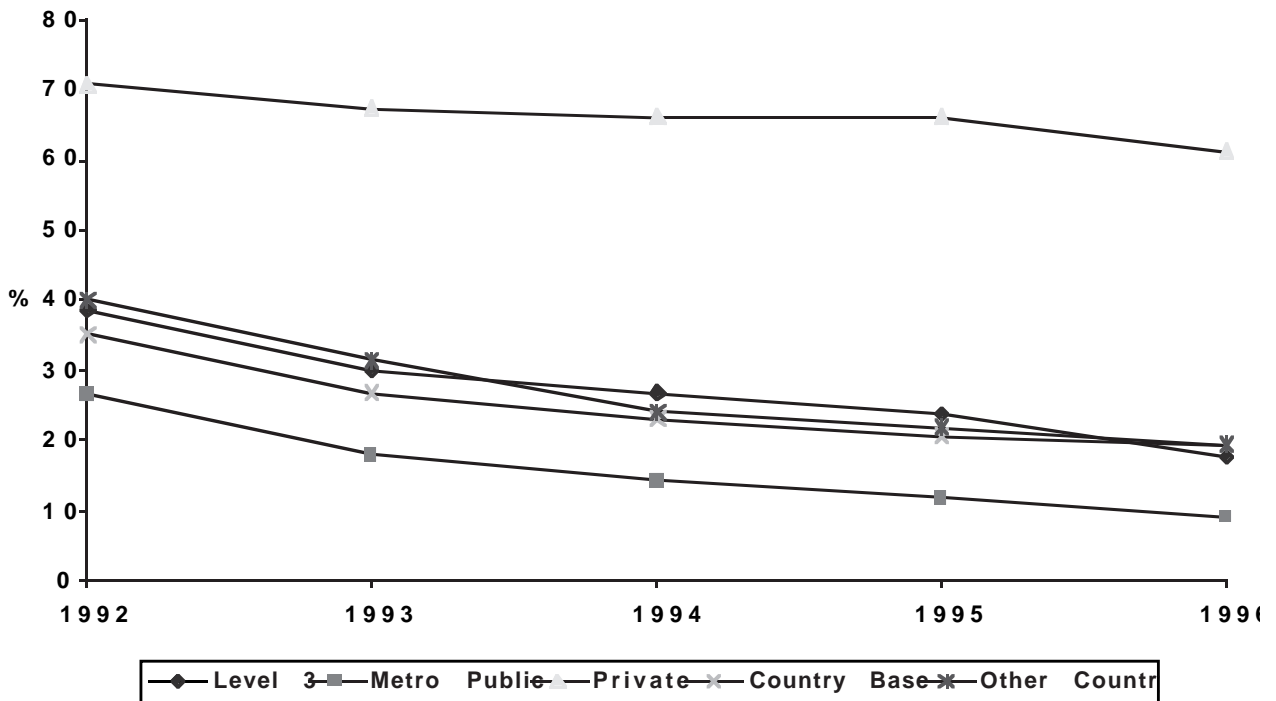
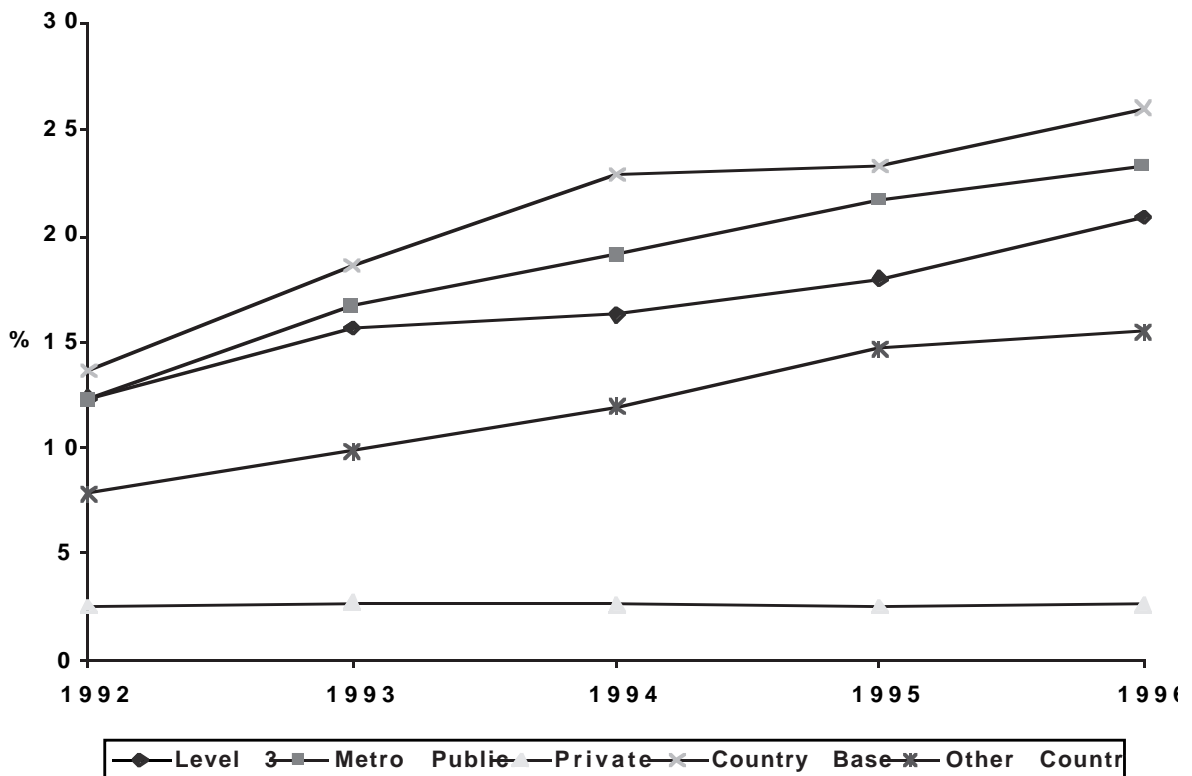


Figure 7.3: Postnatal length of stay (2 days or less) by hospital type, 1992–1996



8. Uses of Perinatal Data

8.1 PDCU Reports 1994–1998

Perinatal Data Collection Unit. *Births in Victoria 1983 -1992*. The Consultative Council on Obstetric and Paediatric Mortality and Morbidity: 1994

Riley M, Halliday J. Perinatal Data Collection Unit. *Congenital Malformations in Victoria, 1983-1994*. The Consultative Council on Obstetric and Paediatric Mortality and Morbidity: 1996.

8.2 Other published reports making use of substantial amounts of PDCU data

National Perinatal Statistics Unit. *Australia's Mothers and Babies 1993*. Australian Institute of Health and Welfare National Perinatal Statistics Unit. Sydney. (Perinatal Statistics Series Number 3: ISSN 1321-8336: 1996)

National Perinatal Statistics Unit. *Australia's Mothers and Babies 1994*. Australian Institute of Health and Welfare National Perinatal Statistics Unit. Sydney. (Perinatal Statistics Series Number 5: ISSN 1321-8336: 1997)

National Perinatal Statistics Unit. *Australia's Mothers and Babies 1995*. Australian Institute of Health and Welfare National Perinatal Statistics Unit. Sydney. (Perinatal Statistics Series Number 6: ISSN 1321-8336: 1998)

National Perinatal Statistics Unit. *Indigenous mothers and their Babies Australia 1991-1993*. Australian Institute of Health and Welfare National Perinatal Statistics Unit. Sydney. (Perinatal Statistics Series Number 4: ISSN 1321-8336: 1996)

National Perinatal Statistics Unit. *Congenital Malformations Australia 1993-1994*. Australian Institute of Health and Welfare National Perinatal Statistics Unit. Sydney. (Birth Defects Series Number 1: ISSN 1321-8392: 1997)

The Consultative Council on Obstetric and Paediatric Mortality and Morbidity. *Annual Report for the year 1993. Incorporating the 32nd Survey of Perinatal Deaths in Victoria*. Melbourne: 1995

The Consultative Council on Obstetric and Paediatric Mortality and Morbidity. *Annual Report for the year 1994. Incorporating the 33rd Survey of Perinatal Deaths in Victoria*. Melbourne: 1996

The Consultative Council on Obstetric and Paediatric Mortality and Morbidity. *Annual Report for the year 1995. Incorporating the 34th Survey of Perinatal Deaths in Victoria*. Melbourne: 1997

The Consultative Council on Obstetric and Paediatric Mortality and Morbidity. *Annual Report for the year 1996. Incorporating the 35th Survey of Perinatal Deaths in Victoria*. Melbourne: 1998

Koori Health Counts: How Midwives Identify Women as Aboriginal or Torres Strait Islanders. Robertson H. Health Information Bulletin, Australian Institute of Health and Welfare 1995; 13: 16-20

How Midwives Identify Women as Aboriginal or Torres Strait Islanders. (Report No.93/0381). Robertson H 1994.

Koori Health Counts: How Midwives Identify Women as Aboriginal or Torres Strait Islanders. (Report No.93/0382). Robertson H 1994

Koori Health Counts. Providing Services to Koori Women having a Baby. Koori Health Unit, Public Health Division, Victorian Government Department of Human Services: 1996

Health Indicators Measures of Health Status and Health Services in Victoria. (1996) Public Health Division, Victorian Government Department of Human Services

Reasons to Stay, Reasons to Go. (1995) Brown S, Lumley J, Small R. Melbourne. Centre for the Study of Mothers' and Children's Health, Latrobe University. ISBN 1 86446 0571

Mothers in a New Country Vietnamese, Turkish and Filipino. Women's views of maternity care. (1997) Small R, Yelland J, Lumley J, Liamputtong Rice P. Melbourne. Centre for the Study of Mothers' and Children's Health, Latrobe University.

Survey of Recent Mothers. Women's views and experiences of maternity care. (1997). Brown S, Lumley J. Melbourne. Centre for the Study of Mothers' and Children's Health, Latrobe University

When a Child Dies: Caring for Children with Life-Limiting/Life-Threatening Conditions. Report prepared by the Association for Children with a Disability, by Dept of Human Services, Victoria, April, 1997

Report on Health and Wellbeing of Victoria's Children and Young People. Office of the Family, Victorian Government Department of Human Services (in progress)

Western Region Youth Data Base. (1996) Grace M, Michael P. Vic Univ of Tech

Who Counts? Women's Health Needs in the Western Metropolitan Region of Melbourne. (1997) Womens Health West

Pregnancy: what now? (1996) Outer Eastern Women's Health Service.

Prematurity, Birth Weight, Congenital Anomalies, Overall Mortality and Gastrointestinal Cancer Mortality in relation to Cyanobacterial Contamination in Drinking Water Sources. (1997) Pilotto L, Kliewer, Burch MD, Attewell RG, Davies R. NCEPH, ANU

8.3 Research projects and publications since 1993

This section provides an update of the existing comprehensive research output from the PDCU. There continues to be very active involvement by PDCU staff in initiating and carrying out research as well as in collaboration with others.

8.3.1 Birthweight

Victorian Infant Collaborative Study

The PDCU has provided data on a number of cohorts of low-birthweight babies who have been followed prospectively with global assessments. Publications continue to be written about the cohorts:

The Victorian Infant Collaborative Study Group. *Outcome to five years of age of children 24-26 weeks gestational age born in the State of Victoria.* Med J Aust 1995;163:11-14

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The Victorian Infant Collaborative Study Group. *Outcome at 2 years of children 23-27 weeks' gestation born in Victoria in 1991-92.* J Paediatr Child Health 1997; 33:161-165.

The Victorian Infant Collaborative Study Group. *Economic outcome for intensive care of infants of birthweight 500-999g born in Victoria in the post-surfactant era.* J Paediatr Child Health 1997; 33: 202-208.

The Victorian Infant Collaborative Study Group. *Improved outcome into the 1990s for infants of birthweight 500-999g* Arch Dis Child 1997; 77:F91-F94.

The Victorian Infant Collaborative Study Group. *Changing outcome for infants of birthweight 500-999 g born outside level-III centres in Victoria.* Aust NZ J Obstet Gynaecol 1997; 37: 253-257.

Doyle LW, Bowman E, Davis P, Halliday J, *Preterm Infants 30-36 weeks' gestation in Victoria - Where should they be delivered?* (submitted)

8.3.2 Antenatal care and diagnostic screening

Obstetric ultrasound

Several papers have been published on the statewide study of use of ultrasound, the data having been collected by midwives using the routine perinatal statistics form of the PDCU.

Yates JM, Lumley J, Bell RJ, Bettio J. *Method for cohort and nested case-control studies: the prevalence, timing and effectiveness of obstetric ultrasound, Victoria 1991-2.* Paed & Peri Epid 1995;9:225-240

Yates JM, Lumley J, Bell R. *The prevalence and timing of obstetric ultrasound in Victoria 1991-1992: a Population - based Study.* Aust NZ. J Obstet Gynaecol 1995; 35(4): 375-379

Kohlenberg C, Lumley J, Yates J, Bell R. *A prospective population-based study of CNS abnormality detection at 16 to 20 weeks by ultrasonography.* Amer Institute of Ultrasound in Medicine Proceedings 1996. (J Ultrasound in Medicine 15:529)

Amniocentesis and chorion villus sampling

There has been continued monitoring of prenatal diagnosis by the Victorian Clinical Genetics Service. The Epidemiology Unit there has strong links to the PDCU, which facilitates follow-up studies and new research.

Halliday J, Lumley J, Bankier A. *Karyotype abnormalities in fetuses diagnosed as abnormal on ultrasound before 20 weeks gestational age.* Prenatal Diagnosis 1994; 14: 689-697

Halliday J, Lumley J, Watson L. *Comparison of women who do and do not have amniocentesis or chorionic villus sampling.* Lancet 1995; 345: 706-709

Halliday J, Watson , Lumley J, Danks D, Sheffield LJ. *New estimates of Down Syndrome risks at chorionic villus sampling, amniocentesis and livebirth, in women of advanced maternal age from a uniquely defined population.* Prenatal Diagnosis 1995; 15: 455-465

Collins V, Webley C, Sheffield LJ, Halliday J. *Fetal outcome and maternal morbidity after early amniocentesis.* Prenatal Diagnosis 1998; (in press)

8. Uses of Perinatal Data

Halliday J, Webley C. *Follow up of all pregnancies in which an abnormal foetus was identified by amniocentesis or CVS in 1992, 1993 and 1996.* Paper in preparation.

WUDWAW study - who usually delivers whom and when?

This is a statewide population-based study of routinely collected data incorporating the occasional data boxes on the perinatal statistics form. Data will be collected on gestation at which attendance for antenatal care begins, models of antenatal care, labour management and linked to perinatal outcome In descriptive analysis.

Pilot study complete. Data collection April–August, 1998.

8.3.3 Obstetric intervention

The role of mother's country of birth and Aboriginality in caesarean birth rates

Barnard D, Lumley J

Masters of Public Health (Monash University) awarded 1996

Vaginal birth after caesarean section (VBAC)

Records of all primiparous caesarean births in 1985 and 1990 were linked to all birth records in the next five years to identify the next pregnancy and its delivery mode. This was done using the computer package AUTOMATCH. Similarly, the caesarean deliveries in 1995 were linked backwards looking for the penultimate delivery.

Stone C, Halliday J, Lumley J, Brennecke S.

Report in preparation for Public Health traineeship and paper in preparation.

Trends in caesarean delivery, 1985–1995

Demographic characteristics of women giving birth in 1985 were compared to those in 1995 and used in an analysis of possible predictors of caesarean delivery.

Bessell C, Halliday J, Bell R.

Masters of Public Health (Monash University) submitted 1998.

8.3.4 Preterm birth

Lumley J, *The association between prior spontaneous abortion, induced abortion and preterm birth in first singleton births*, *Prenat & Neonat Med* 1998;3:21–24

8.3.5 Infertility

Donor insemination (DI) and pregnancy outcome

Records from the two centres offering DI provided nearly 2000 records for linkage to perinatal data. A case-control study compared aspects of pregnancy outcome and congenital malformation data.

Hoy J, Halliday J, Venn A, Kovacs G. Presentation to Fertility Society Aust, Dec 1997

Report in preparation for Public Health Traineeship

8.3.6 Events before and during birth

Born before arrival

BBA, why does it happen? Case control retrospective study involving three Victorian hospitals.

Robertson H, Gumley S, McIntyre D.

8.3.7 Perinatal mortality

Jonas H, Lumley J, *Trends in stillbirths and neonatal deaths for very pre-term infants (<32 weeks gestation), born in Victoria 1986-1993*, Aust NZ J Obstet Gynaecol 1997;37:59-66

Jonas H, Lumley J, *The effect of mode of delivery on neonatal mortality in very low birth weight infants born in Victoria, Australia: Caesarean section is associated with increased survival in breech-presenting but not vertex presenting births*, J. Paediatr & Perinat Epidemiol 1997;11:181-199

Contribution of pregnancy terminations of malformed fetuses to perinatal mortality rates

Pre and post 20 week pregnancy terminations following diagnosis of a fetal malformation have been categorised into degree of lethality, so as to estimate how perinatal mortality rates may be influenced by these terminations over an 8 year period. This study has been initiated by Professor Norman Beischer, Chairman of the Consultative Council on Obstetric and Paediatric Mortality and Morbidity. [Beischer N. *Major Fetal Malformations and Perinatal Mortality Rates: The Place of Late Terminations*. Aust NZ. J Obstet Gynaecol 1995; 35:1: editorial].

8.3.8 Aboriginality

Robertson H, Lumley J, Berg S. *How Midwives Identify Women as Aboriginal or Torres Strait Islanders*. Aust. College of Midwives Incorp. Journal 1995; 8: 26-29

8.3.9 Ethnicity

Perinatal outcome for women born in the Philippines

Cassell E, Lumley J.

Masters Public health (Monash University). Awarded 1996

8.3.10 Congenital Malformations

12 year report

There was a report produced summarising data in the Congenital Malformation Register collected since its inception in 1982. A series of publications is being written.

Riley M, Halliday J, Lumley J. *Congenital Malformation in Victoria, 1983-95: An overview of infant characteristics*, J. Paediatr. Child Health, (in press)

Recurrence of malformations

Longitudinal record linkage throughout the Birth Defects/Congenital Malformations Register is being undertaken to determine the extent of recurrence for specific malformations (eg. Hirschsprung's Disease, hypoplastic left heart syndrome, neural tube defects etc.)

Genetic counselling services and congenital malformations

Halliday J, Griffin O, Bankier A, Rose C, Riley M. *Use of Record-Linkage between a Statewide Genetics Service and a Birth Defects/Congenital Malformation Register to Determine Use of Genetic Counselling Services*. Amer J Med Genet. 1997 72:3-10

Childhood cancer and congenital malformations

Altmann A, Halliday J, Giles G. *Associations between Congenital Malformations and Childhood Cancer. A Register-based Case-Control Study.* Brit J Cancer (in press)

Cerebral Palsy Register collaboration

Nh&MRC funded a matched case-control study of antenatal and perinatal antecedents of spastic cerebral palsy using data from both PDCU and medical records.

Reddihough D, Bell R, Beischer N.

Epilepsy in twins

The NH&MRC has funded a project to look at acquired factors for epilepsy in twins

Berkovitz S, Austin Hospital

8.3.11 Neural tube defects

Bower C, Raymond M, Lumley J, Bury G, *Trends in neural tube defects in three Australian States,* Med J Aus 1993;158:152-154

Consumer Information Group: Randomised controlled trial of educational material on periconceptional folate for the primary prevention of neural tube defects.

Watson M, Watson L, Bell R, Halliday J, Burford N. Report in preparation.

8.3.12 Data validation/quality

Ascertainment issues

The quality and completeness of the data held in the PDCU have been examined in a number of studies which have yielded publications.

Robertson H, *Poor Knowledge and Misunderstandings: Perinatal Data Validity and Work Place Change in Midwifery,* Int J Quality in Health Care, 1995, 7, 4: 391-397

Riley M and Griffin O, *Validating a Statewide Data Collection: Differences in Information Technology Resources between Hospitals,* Health Info Management. 1997 27, 2, 67-68

Kilkenny M, Riley M, Lumley J, *Follow-Up Validation Study of the Victorian Congenital Malformation Register,* Journal of Paediatrics & Child Health, 1995: 31: 323-5

Maternal morbidity reporting

Comparisons were made between data held in the Victorian Inpatient Minimum Database and the PDCU in an attempt to determine the most accurate incidence of specific maternal morbidity indicators.

Riley M and Halliday J, *Eclampsia or not eclampsia.. that is the question: A validation of the reporting and coding of eclampsia in the Victorian Inpatient Minimum Database and the Victorian Perinatal Data Collection Unit,* Health Info Management (accepted)

Wein P, Beischer NA, Halliday J, *Gestational diabetes mellitus: screening controversy,* Med J Aus. 1998, 168, Feb 2:139

8.4 External use of PDCU data

In the last 3 years a database has been maintained on all written requests for perinatal data. There have been 237 requests in this time, 80 in 1995, 72 in 1996 and 85 in 1997. Some examples of the sources of, and reasons for, requests are given below.

- Mother's country of birth by postcode, for funding formula of Maternal & Child Health Nursing, requested by Community Child Health Unit, DHS
- Perinatal information for Ballarat Health Services, for health needs analysis for the regional GP division
- Births by local government area for the Royal District Nursing Service for domicillary service planning.
- Editor of Birth Issues requested data for presentation at a symposium in the USA on Utilisation of Epidurals and Normal Obstetrics
- Data on teenage births by both the Herald-Sun and The Age
- Data on single mothers and country of birth (response to ABS release of data) by SBS radio
- Statistics for the Down Syndrome Association web page
- Details of babies with diaphragmatic hernia over 12 years, for a study being done on survival patterns
- Numbers of low birth weight babies for Baby Friendly document being written by a hospital service.
- Information on rubella syndrome for a school for deaf/blind students
- Request from Health Development Section of the Public Health Branch for numbers of women in different postcodes, from specific countries of birth, to help with planning a strategy for those at high risk of thalassaemia.
- Perinatal outcome of women with diabetes at Box Hill Hospital from 1988-1995
- Incidence of haemorrhagic disease of the newborn in Australia and mode of delivery of Vit K
- Provision of pregnancy outcome data on women who had a maternal serum screening test
- Examination of data relating to apparent excess of perinatal deaths in two separate Maternal & Child Health Centres
- Central Highlands GP Division wanting demographic data to help with planning shared obstetric care services
- Two health regions requesting details on teenage births following release to media of hospital profile data

The Perinatal Data Collection Unit welcomes requests for data and will consider any written request for unpublished data, the policy being not to release any information that allows for identification of an individual person or individual hospital.

References

1. Perinatal Data Collection Unit, *Births in Victoria 1983-1992*, The Consultative Council on Obstetric and Paediatric Mortality and Morbidity, Health & Community Services, Melbourne 1994.
2. Robertson H, *Poor knowledge and misunderstandings: Perinatal data validity and work place change in midwifery*, Int J Quality in Health Care, 1995, 4:391-397
3. Robertson H, *Approaching a quality assurance program for data collection. The results of a validation study conducted by 37 Victorian hospitals*, Victorian Perinatal Data Collection Unit, Melbourne, 1993.
4. Robertson H, *A validation study of the Victorian Perinatal Data collection forms 1986*, Victorian Perinatal Data Collection Unit, Melbourne, 1986.
5. Riley M and Griffin O, *Validating a statewide data collection: differences in information technology resources between hospitals*, Health Information Management, 1997, 27,2:67-68.
6. The Consultative Council on Obstetric and Paediatric Mortality and Morbidity. *Annual Report for the Year 1995: Incorporating the 34th Survey of Perinatal Deaths in Victoria*. Melbourne, 1997
7. Australian Bureau of Statistics, *Population by Age and Sex: Australian States and Territories, June 1992 to June 1997*, ABS Catalogue No. 32010.
8. Riley M, Halliday J, *Congenital Malformations in Victoria, 1983-1994*, Perinatal Data Collection Unit, The Consultative Council on Obstetric and Paediatric Mortality and Morbidity, Melbourne 1996.
9. National Health Data Committee 1997. *National health data dictionary. Version 6*. AIHW cat. no.HWI 9, Canberra: Australian Institute of Health and Welfare.
10. Day P, Lancaster P, Huang J, 1997, *Australia's mothers and babies 1995*. AIHW National Perinatal Statistics Unit: Perinatal Statistics Series No. 6, Sydney.

Appendix A - Perinatal Morbidity Statistics Form A (used 1982-1997)

CIRCLE APPROPRIATE BOX CODE Hospital Record/Registration Number: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Admission Date: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Suburb/Town: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Postcode: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>		Hospital: Place of Birth: (Baby) Hospital <input type="checkbox"/> Intended <input type="checkbox"/> Other <input type="checkbox"/> Specify Emergency <input type="checkbox"/> Marital Status: (Mother) Married <input type="checkbox"/> Single <input type="checkbox"/> Widowed <input type="checkbox"/> Defacto <input type="checkbox"/> Divorced <input type="checkbox"/> Separated <input type="checkbox"/> Unknown <input type="checkbox"/> Birthdate: (Mother) <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Country of Birth: (Mother) Aboriginal: (Mother) Yes <input type="checkbox"/> No <input type="checkbox"/>												
PREVIOUS PREGNANCIES: (Excluding this pregnancy) No previous pregnancy <input type="checkbox"/> Total Number of: Livebirths <input type="text"/> <input type="text"/> Stillbirths <input type="text"/> <input type="text"/> Abortions - spontaneous <input type="text"/> <input type="text"/> - induced <input type="text"/> <input type="text"/> Unknown <input type="text"/> <input type="text"/> Neonatal deaths <input type="text"/> <input type="text"/> Date of Completion of Last Pregnancy: (Month/year) <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Livebirth <input type="checkbox"/> Stillbirth <input type="checkbox"/> Abortion - spontaneous <input type="checkbox"/> Abortion - induced <input type="checkbox"/> Unknown <input type="checkbox"/> Neonatal Death <input type="checkbox"/>	LABOUR, DELIVERY AND PUERPERIUM Labour: Spontaneous <input type="checkbox"/> Induced - medical <input type="checkbox"/> - surgical <input type="checkbox"/> Augmented <input type="checkbox"/> No labour <input type="checkbox"/> Presentation: Vertex <input type="checkbox"/> Other <input type="checkbox"/> Breech <input type="checkbox"/> Unknown <input type="checkbox"/> Type of Delivery: Spontaneous cephalic <input type="checkbox"/> Caesarean - elective <input type="checkbox"/> - emergency <input type="checkbox"/> Forceps <input type="checkbox"/> Other <input type="checkbox"/> Vaginal Breech <input type="checkbox"/> Unknown <input type="checkbox"/>	BABY (Complete a separate form in full for each baby of a multiple birth) Birthdate: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Sex: Male <input type="checkbox"/> Female <input type="checkbox"/> Indeterminate <input type="checkbox"/> Plurality: (e.g. Single <input type="checkbox"/> Twins <input type="checkbox"/> etc.) <input type="checkbox"/> (This record refers to <input type="checkbox"/> born) Condition: Liveborn <input type="checkbox"/> Stillborn <input type="checkbox"/> Birthweight (grams): <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Apgar: 5 minutes <input type="text"/> <input type="text"/> Time to Established Respiration (mins): <input type="text"/> <input type="text"/> Resuscitation: Endotracheal Intubation <input type="checkbox"/> Sodium Bicarbonate Injection <input type="checkbox"/> Narcotic Antagonist Injection "Frog Breathing" and/or Bag and Mask <input type="checkbox"/> None of Above <input type="checkbox"/> Congenital Anomalies: Cardiovascular: CNS: Musculoskeletal: Gastrointestinal: Urogenital: Respiratory: Skin: Other: Neonatal Morbidity:												
THIS PREGNANCY														
Date of LMP: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Estimated Gestation (weeks): <input type="text"/> <input type="text"/> Maternal Medical Conditions: Diabetes <input type="checkbox"/> Cardiac Disease <input type="checkbox"/> Chronic Renal Disease <input type="checkbox"/> Hypertension <input type="checkbox"/> Other: Obstetric Complications: APH - placenta praevia <input type="checkbox"/> - abruptio placentae <input type="checkbox"/> - other <input type="checkbox"/> Premature rupture of membranes <input type="checkbox"/> Pre-eclampsia <input type="checkbox"/> Other: Procedures and Operations: Cervical suture <input type="checkbox"/> Amniocentesis - before 22 weeks <input type="checkbox"/> - at 22 or more weeks <input type="checkbox"/> Other:	If Operative Delivery, State Indication: Complications of Labour, Delivery or Puerperium: PPH - primary (600 mls +) <input type="checkbox"/> Other:	Date of Discharge: Mother <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Baby <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Discharge Status: <table style="width:100%;"> <tr> <td></td> <td style="text-align: center;">Mother</td> <td style="text-align: center;">Baby</td> </tr> <tr> <td>Discharged</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Died</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Transferred</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table> Baby transferred to:		Mother	Baby	Discharged	<input type="checkbox"/>	<input type="checkbox"/>	Died	<input type="checkbox"/>	<input type="checkbox"/>	Transferred	<input type="checkbox"/>	<input type="checkbox"/>
	Mother	Baby												
Discharged	<input type="checkbox"/>	<input type="checkbox"/>												
Died	<input type="checkbox"/>	<input type="checkbox"/>												
Transferred	<input type="checkbox"/>	<input type="checkbox"/>												
Occasional Data: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>														
Signature at Delivery: Date / /														
Signature at Discharge: Date / /														

PERINATAL MORBIDITY STATISTICS

HOSPITAL / MEDICAL PRACTITIONER / MIDWIFE COPY

Appendix B - Definitions

(Where applicable, definitions have been derived from the National Health Data Dictionary Version 6.0)⁹

Aboriginality: an Aboriginal or Torres Strait Islander (TSI) is a person of Aboriginal or TSI descent who identifies as an Aboriginal or TSI and is accepted as such by the community with which he or she is associated (Department of Aboriginal Affairs, Constitutional Section 1981)

Apgar score: numerical score to evaluate the baby's condition at 1 minute and 5 minutes after birth based on heart rate, respiration, muscle tone, reflexes and colour.

Birth: the complete expulsion or extraction from its mother of a baby of at least 20 weeks gestation or, if gestation is unknown, weighing at least 400 g, who is either liveborn or stillborn.

Birthweight: the first weight of the fetus or baby obtained after birth

Confinement: the number of pregnancies resulting in at least one birth.

(NB: Number of confinements does not equal number of births. One confinement may result in two births (ie twins)).

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

Country of birth: the country in which the person was born.

Delivery, type of: the method of complete expulsion or extraction from its mother of products of conception.

Discharge status: status at separation of person (discharge/transfer/death) and place to which person is released (where applicable).

Elective caesarean section: operation planned and performed before onset of labour or operation performed electively with no labour, even if it is an emergency procedure.

Emergency caesarean section: operation performed after onset of labour or operation planned before labour and performed after labour began spontaneously.

Extremely low birthweight: weight at birth < 1000 grams

Gender: the sex of the person

Gestation: the estimated gestational age of the baby in completed weeks using all available obstetric information (clinical estimation, ultrasound, cycle length etc)

Gravidity: the total number of previous pregnancies, regardless of the outcome

Hospital type: hospitals grouped together according to location (metropolitan or rural), accommodation status (private) and/or level of services provided (level three). In this classification “Private” includes those hospitals which accept private patients only.

Livebirth: is the complete expulsion or extraction from its mother of a baby of at least 20 weeks gestation or, if gestation is unknown, weighing at least 400 g who, after being born, breathes or shows any evidence of life, such as a heartbeat.

Low birthweight: weight at birth < 2500 gms

Marital status: current marital status of the woman

Maternal age: age of the woman at the time she delivered.

Mortality: death.

Multigravida: a woman who has been pregnant for the second or subsequent time

Multipara: a woman who has delivered more than one livebirth or stillbirth.

Neonatal death: is a death occurring within 28 days of birth in a baby whose gestation is at least 20 weeks or, if gestation is unknown, weighing at least 400 grams.

Neonatal survivors: babies of very low birthweight (<1500 gms) who survive more than 28 days.

Nullipara: a woman who has not been delivered of a viable infant, but who has had a previous spontaneous or induced abortion.

Onset of labour: manner in which labour is initiated.

Operative delivery: includes caesarean - both elective and emergency, forceps, ventouse, and vaginal breech.

Parity: number of previous pregnancies resulting in a livebirth or stillbirth.

Perinatal death: a stillbirth or neonatal death.

Perinatal mortality rate: the number of perinatal deaths (stillbirths plus neonatal deaths) per 1000 births, live and stillbirths.

Place of birth: where the baby is born.

Plurality: the total number of births resulting from this pregnancy.

Postnatal length of stay: the length of stay of a mother/baby calculated from the date the baby was born until the mother/baby is discharged from the hospital premises.

Primigravida: a woman pregnant for the first time.

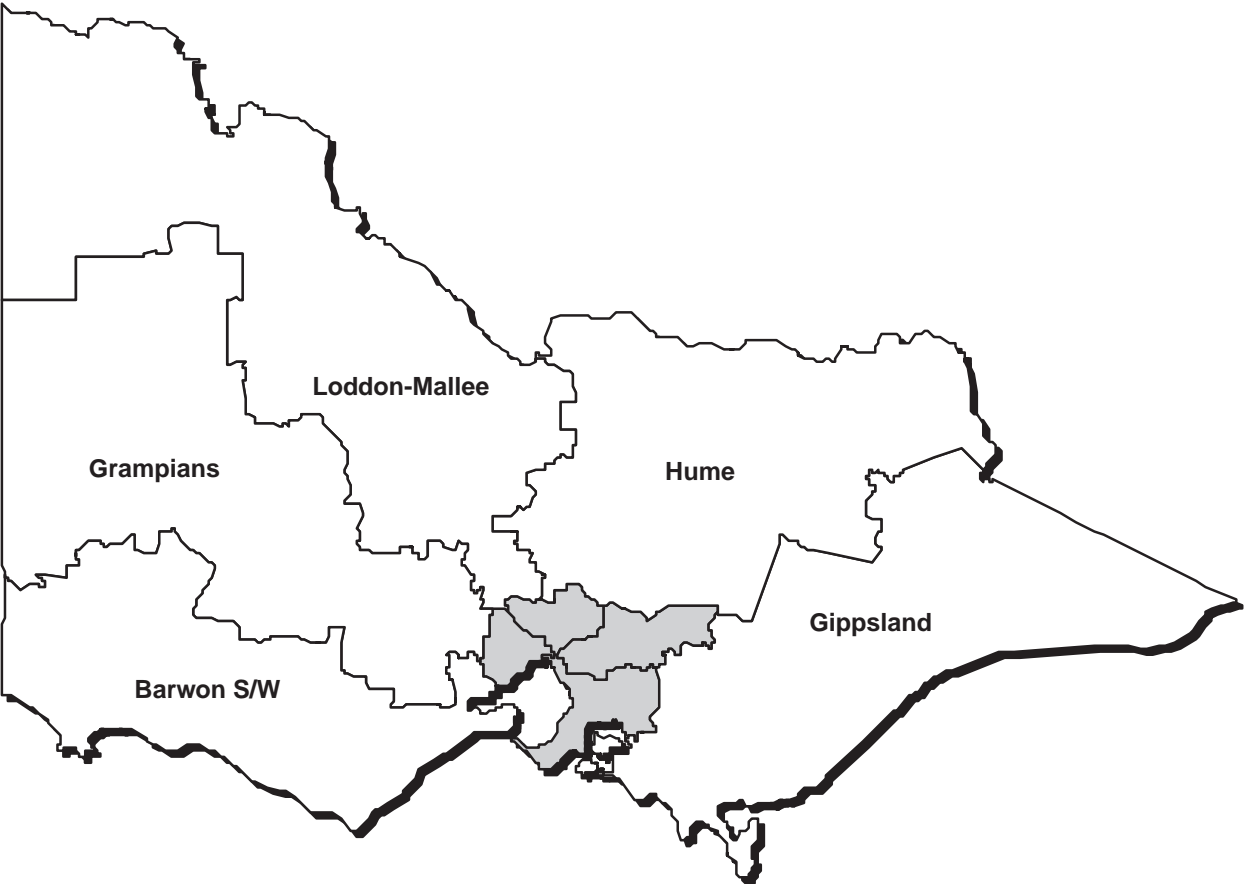
Region of residence: the place where the patient lives as defined by Victorian Department of Human Services health regions

Resuscitation: active measures taken immediately after birth to establish independent respiration and heart beat, or to treat depressed respiratory effort and to correct metabolic disturbances.

Stillbirth: is the complete expulsion or extraction from its mother of a baby of at least 20 weeks gestation or, if the gestation is unknown, weighing at least 400 g, who did not, at any time after delivery, breathe or show any evidence of life such as a heartbeat.

Very low birth weight: birthweight < 1500 gms.

Appendix C – Department of Human Services – Rural Regions



Appendix C – Department of Human Services – Metropolitan Regions

