

## 4. TRENDS IN NEW SOUTH WALES

### Confinements and births by plurality

There were 86,005 births to 84,587 women reported in 2002 (Table 1). Over the last five years the number of births has ranged from about 86,000 to 88,000.

Between 1998 and 2002, the number of multiple births (twins, triplets, etc.) ranged from 2,436 (2.8 per cent) in 1998 to 2,932 (3.4 per cent) in 2001, and 2,815 (3.4 per cent) in 2002.

**TABLE 1**

**BIRTHS AND CONFINEMENTS BY PLURALITY, NSW 1998–2002**

Plurality	1998		1999		Year 2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%	No.	%
<b>Confinements</b>										
Singleton	83869	98.6	84676	98.5	85027	98.3	82926	98.3	83190	98.3
Twins	1174	1.4	1261	1.5	1404	1.6	1428	1.7	1375	1.6
Triplets	28	0.0	30	0.0	29	0.0	24	0.0	22	0.0
Quadruplets	1	0.0	0	0.0	0	0.0	1	0.0	0	0.0
Total	85072	100.0	85967	100.0	86460	100.0	84379	100.0	84587	100.0
<b>Births</b>										
Singleton	83869	97.2	84676	97.0	85027	96.7	82926	96.6	83190	96.7
Twins	2348	2.7	2523	2.9	2808	3.2	2856	3.3	2749	3.2
Triplets	84	0.1	90	0.1	87	0.1	72	0.1	66	0.1
Quadruplets	4	0.0	0	0.0	0	0.0	4	0.0	0	0.0
Total	86305	100.0	87289	100.0	87922	100.0	85858	100.0	86005	100.0

Source: NSW Midwives Data Collection (HOIST). Centre for Epidemiology and Research, NSW Department of Health.

### Health area of residence

In 2002, 80.5 per cent of confinements were among residents of urban areas and 18.7 per cent were among residents of rural health areas. The number of confinements in rural health areas fell from 17,488 in 1998 to 15,859 in 2002, while confinements in urban areas rose from

66,910 in 1998 to 68,130 in 2002 (Table 2). Falls in births were observed in all rural health areas, while the main increases were seen in Western Sydney and South Western Sydney.

**TABLE 2**

**CONFINEMENTS BY HEALTH AREA OF RESIDENCE, NSW 1998–2002**

Health Area	1998		1999		Year 2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%	No.	%
Central Sydney	6574	7.7	6625	7.7	6775	7.8	6602	7.8	6579	7.8
Northern Sydney	8824	10.4	9242	10.8	9432	10.9	9226	10.9	9258	10.9
Western Sydney	10541	12.4	10712	12.5	10794	12.5	10818	12.8	11051	13.1
Wentworth	4825	5.7	4851	5.6	4921	5.7	4683	5.5	4606	5.4
South Western Sydney	12050	14.2	12219	14.2	12541	14.5	12161	14.4	12526	14.8
Central Coast	3736	4.4	3665	4.3	3772	4.4	3628	4.3	3560	4.2
Hunter	6875	8.1	6965	8.1	6981	8.1	6725	8.0	6918	8.2
Illawarra	4350	5.1	4413	5.1	4407	5.1	4250	5.0	4329	5.1
South Eastern Sydney	9135	10.7	9428	11.0	9697	11.2	9347	11.1	9370	11.1
Northern Rivers	2941	3.5	2903	3.4	2766	3.2	2755	3.3	2725	3.2
Mid North Coast	2954	3.5	2906	3.4	2802	3.2	2806	3.3	2752	3.3
New England	2381	2.8	2348	2.7	2265	2.6	2228	2.6	2265	2.7
Macquarie	1589	1.9	1596	1.9	1590	1.8	1552	1.8	1486	1.8
Mid Western	2339	2.7	2297	2.7	2264	2.6	2249	2.7	2098	2.5
Far West	556	0.7	533	0.6	533	0.6	564	0.7	497	0.6
Greater Murray	2946	3.5	2603	3.0	2517	2.9	2550	3.0	2484	2.9
Southern	1782	2.1	1845	2.1	1766	2.0	1673	2.0	1485	1.8
Other/Not stated	674	0.8	816	0.9	637	0.7	562	0.7	598	0.7
TOTAL	85072	100.0	85967	100.0	86460	100.0	84379	100.0	84587	100.0

Source: NSW Midwives Data Collection (HOIST). Centre for Epidemiology and Research, NSW Department of Health.

## Maternal age

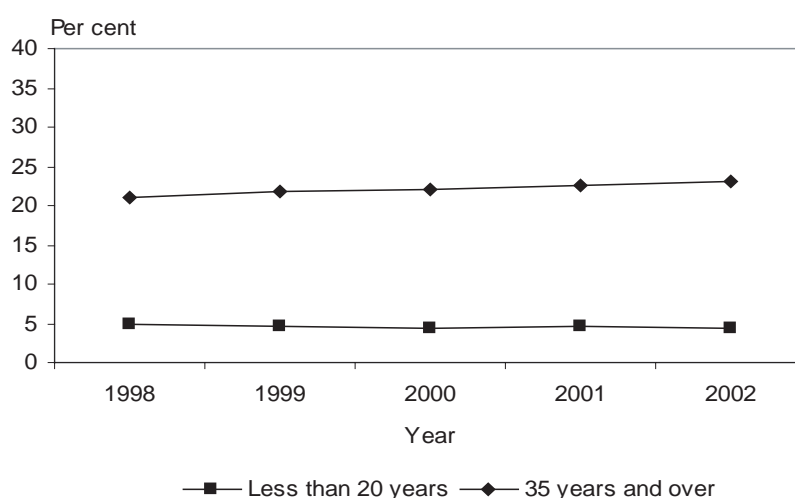
The number of teenage mothers decreased from 4,118 in 1998 to 3,652 in 2002 (Figure 1, Table 3). The mean maternal age rose slightly from 29.5 to 30.1 years over the same period.

The number of mothers 35 years of age or over giving birth increased from 13,839 in 1998 to 15,872 in 2002, an increase from 16.3 to 18.8 per cent of all confinements.

The trend towards later childbirth is evident among both primiparous and multiparous mothers: the proportion of mothers aged 35 years or more who gave birth for the first time increased from 9.7 to 11.8 per cent over the 5-year period, and the proportion of multiparous mothers increased from 20.7 to 23.7 per cent.

**FIGURE 1**

CONFINEMENTS AMONG MOTHERS AGED LESS THAN 20 YEARS AND 35 YEARS AND OVER, NSW 1998–2002



Source: NSW Midwives Data Collection Centre for Epidemiology and Research, NSW Department of Health.

**TABLE 3**

CONFINEMENTS BY MATERNAL AGE, NSW1998–2002

Maternal age (years)	1998		1999		Year 2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%	No.	%
Under 15	27	0.0	27	0.0	31	0.0	19	0.0	28	0.0
15–19	4091	4.8	4072	4.7	3822	4.4	3778	4.5	3624	4.3
20–24	14261	16.8	13790	16.0	13316	15.4	13036	15.4	12674	15.0
25–29	27759	32.6	27678	32.2	27293	31.6	25528	30.3	24523	29.0
30–34	25014	29.4	25703	29.9	26640	30.8	26707	31.7	27810	32.9
35–39	11745	13.8	12372	14.4	12894	14.9	12640	15.0	13107	15.5
40–44	2026	2.4	2199	2.6	2342	2.7	2488	2.9	2645	3.1
45+	68	0.1	97	0.1	98	0.1	122	0.1	120	0.1
Not stated	81	0.1	29	0.0	24	0.0	61	0.1	56	0.1
TOTAL	85072	100.0	85967	100.0	86460	100.0	84379	100.0	84587	100.0

Source: NSW Midwives Data Collection (HOIST). Centre for Epidemiology and Research, NSW Department of Health.

## Maternal country of birth

In the period 1998–2002, about 73 per cent of confinements were to mothers who were born in Australia. In 2002, mothers born in the United Kingdom, New Zealand, China, Vietnam and Lebanon together accounted for 12.7 per cent of all confinements (Table 4). Further information on maternal country of birth is shown in Chapter 7.

**TABLE 4**

**CONFINEMENTS BY MATERNAL COUNTRY OF BIRTH, NSW 1998–2002<sup>#</sup>**

Country of birth	1998		1999		Year 2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%	No.	%
Australia	62606	73.6	62555	72.8	62368	72.1	61655	73.1	61631	72.9
United Kingdom	2471	2.9	2627	3.1	2557	3.0	2331	2.8	2344	2.8
New Zealand	1762	2.1	1966	2.3	1962	2.3	2009	2.4	1998	2.4
China	1892	2.2	2015	2.3	2163	2.5	1791	2.1	1830	2.2
Vietnam	1462	1.7	1804	2.1	2053	2.4	1691	2.0	1773	2.1
Lebanon	1942	2.3	1788	2.1	1766	2.0	1667	2.0	1663	2.0
Philippines	1308	1.5	1319	1.5	1315	1.5	1243	1.5	1156	1.4
India	634	0.7	635	0.7	643	0.7	612	0.7	747	0.9
Fiji	640	0.8	604	0.7	688	0.8	652	0.8	655	0.8
Iraq	360	0.4	414	0.5	455	0.5	577	0.7	545	0.6
Former Yugoslavia	659	0.8	662	0.8	627	0.7	607	0.7	531	0.6
Indonesia	424	0.5	460	0.5	566	0.7	494	0.6	494	0.6
South Africa	329	0.4	386	0.4	387	0.4	450	0.5	486	0.6
United States of America	340	0.4	372	0.4	377	0.4	332	0.4	346	0.4
Sri Lanka	276	0.3	295	0.3	304	0.4	291	0.3	324	0.4
Western Samoa	349	0.4	318	0.4	320	0.4	319	0.4	310	0.4
Hong Kong	433	0.5	409	0.5	357	0.4	332	0.4	307	0.4
South Korea	370	0.4	370	0.4	426	0.5	358	0.4	301	0.4
Japan	239	0.3	264	0.3	252	0.3	293	0.3	283	0.3
Cambodia	238	0.3	303	0.4	326	0.4	285	0.3	279	0.3
Tonga	312	0.4	308	0.4	296	0.3	278	0.3	271	0.3
Thailand	194	0.2	207	0.2	199	0.2	221	0.3	268	0.3
Ireland	280	0.3	287	0.3	273	0.3	291	0.3	267	0.3
Turkey	340	0.4	314	0.4	335	0.4	317	0.4	266	0.3
Pakistan	200	0.2	192	0.2	224	0.3	276	0.3	266	0.3
Malaysia	259	0.3	286	0.3	319	0.4	251	0.3	262	0.3
Chile	214	0.3	224	0.3	202	0.2	206	0.2	250	0.3
Bangladesh	140	0.2	134	0.2	179	0.2	183	0.2	212	0.3
Canada	177	0.2	185	0.2	177	0.2	203	0.2	192	0.2
Germany	187	0.2	226	0.3	204	0.2	192	0.2	188	0.2
Egypt	202	0.2	218	0.3	196	0.2	176	0.2	160	0.2
Syria	143	0.2	145	0.2	138	0.2	150	0.2	151	0.2
North Korea	71	0.1	90	0.1	140	0.2	102	0.1	151	0.2
Iran	139	0.2	140	0.2	153	0.2	169	0.2	137	0.2
Papua New Guinea	131	0.2	136	0.2	132	0.2	133	0.2	135	0.2
Afghanistan	85	0.1	120	0.1	96	0.1	147	0.2	133	0.2
Laos	126	0.1	118	0.1	136	0.2	118	0.1	128	0.2
Singapore	102	0.1	101	0.1	104	0.1	119	0.1	117	0.1
Malta	55	0.1	72	0.1	53	0.1	58	0.1	113	0.1
France	114	0.1	108	0.1	113	0.1	99	0.1	109	0.1
Netherlands	92	0.1	102	0.1	109	0.1	95	0.1	106	0.1
Poland	100	0.1	123	0.1	104	0.1	92	0.1	106	0.1
Portugal	136	0.2	120	0.1	101	0.1	101	0.1	105	0.1
Russian Federation	38	0.0	33	0.0	56	0.1	63	0.1	105	0.1
Other/Not stated	2501	2.9	2412	2.8	2509	2.9	2350	2.8	2386	2.8
TOTAL	85072	100.0	85967	100.0	86460	100.0	84379	100.0	84587	100.0

Source: NSW Midwives Data Collection (HOIST). Centre for Epidemiology and Research, NSW Department of Health.

<sup>#</sup> Countries of birth for which there were 100 or more confinements in 2002.

## Maternal Aboriginality

The reported number of Aboriginal or Torres Strait Islander mothers giving birth increased marginally from 2,043 in 1998 (2.4 per cent of all mothers) to 2,155 in 2002 (2.5 per cent of all mothers) (Table 5). Further information on maternal Aboriginality and reporting of Aboriginality is shown in Chapter 6.

**TABLE 5**

**CONFINEMENTS BY MATERNAL ABORIGINALITY, NSW 1998–2002**

Aboriginality	1998		1999		Year 2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%	No.	%
Aboriginal or Torres Strait Islander	2043	2.4	2059	2.4	2105	2.4	2110	2.5	2155	2.5
Non-Aboriginal or Torres Strait Islander	82787	97.3	83899	97.6	84306	97.5	82223	97.4	82383	97.4
Not stated	242	0.3	9	0.0	49	0.1	46	0.1	49	0.1
TOTAL	85072	100.0	85967	100.0	86460	100.0	84379	100.0	84587	100.0

Source: NSW Midwives Data Collection (HOIST). Centre for Epidemiology and Research, NSW Department of Health.

## Number of previous pregnancies

In recent years there were no substantial changes in the reported number of previous pregnancies greater than 20 weeks gestation (Table 6). The proportion of mothers giving birth for the first time has been stable at about 41 per cent, while the proportion of mothers giving birth to a second to fifth baby has been stable at about 57 per cent. Less than 2 per cent of mothers have previously given birth 5 times or more.

**TABLE 6**

**CONFINEMENTS BY NUMBER OF PREVIOUS PREGNANCIES, NSW 1998–2002**

Number of previous pregnancies (>20 weeks gestation)	1998		1999		Year 2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%	No.	%
0	34376	40.4	35311	41.1	35953	41.6	35153	41.7	35035	41.4
1–4	49462	58.1	49432	57.5	49146	56.8	47850	56.7	48169	56.9
5+	1184	1.4	1206	1.4	1331	1.5	1329	1.6	1290	1.5
Not stated	50	0.1	18	0.0	30	0.0	47	0.1	93	0.1
TOTAL	85072	100.0	85967	100.0	86460	100.0	84379	100.0	84587	100.0

Source: NSW Midwives Data Collection (HOIST). Centre for Epidemiology and Research, NSW Department of Health.

## Duration of pregnancy at first antenatal visit

Since 1998, the proportion of mothers starting antenatal care at 20-plus weeks gestation has been stable at 12–13 per cent (Table 7).

**TABLE 7**

### CONFINEMENTS BY DURATION OF PREGNANCY AT FIRST ANTENATAL VISIT, NSW 1998–2002

Duration of pregnancy (weeks)	1998		1999		Year 2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%	No.	%
0–19	72257	84.9	74077	86.2	74803	86.5	72704	86.2	73116	86.4
20-plus	11410	13.4	10979	12.8	10748	12.4	10878	12.9	10614	12.5
Not stated	1405	1.7	911	1.1	909	1.1	797	0.9	857	1.0
TOTAL	85072	100.0	85967	100.0	86460	100.0	84379	100.0	84587	100.0

Source: NSW Midwives Data Collection (HOIST). Centre for Epidemiology and Research, NSW Department of Health.

## Smoking in pregnancy

The proportion of mothers reporting any smoking during pregnancy declined between 1998 and 2002: in 1998, 16,859 (19.8 per cent) mothers reported smoking in pregnancy, compared to 16,302 (19.0 per cent) in 1999, 15,001 (17.4 per cent) in 2000, 14,424 (17.1 per cent) in 2001 and 13,829 (16.3 per cent) in 2002.

Of mothers who smoked during pregnancy in 2002, four per cent stopped smoking before the second half of pregnancy.

Over the five year period, among those who smoked in the second half of pregnancy, there was a trend towards smoking fewer cigarettes per day (Table 8).

**TABLE 8**

### MOTHERS WHO SMOKED AT ALL DURING PREGNANCY BY NUMBER OF CIGARETTES SMOKED IN THE SECOND HALF OF PREGNANCY, NSW 1998–2002

Cigarettes smoked in the second half of pregnancy	1998		1999		Year 2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%	No.	%
None	690	4.1	739	4.5	622	4.1	576	4.0	556	4.0
1–10 per day	7634	45.3	7303	44.8	7092	47.3	6834	47.4	6639	48.0
More than ten per day	8171	48.5	7966	48.9	7005	46.7	6725	46.6	6347	45.9
Smoked, amount not stated	358	2.1	294	1.8	282	1.9	289	2.0	279	2.0
Not stated	6	0.0	0	0.0	0	0.0	0	0.0	8	0.1
TOTAL	16859	100.0	16302	100.0	15001	100.0	14424	100.0	13829	100.0

Source: NSW Midwives Data Collection (HOIST). Centre for Epidemiology and Research, NSW Department of Health.

## Place of birth

In 2002, the majority of mothers planned to give birth in a hospital labour ward, and 3.4 per cent of mothers planned to give birth in a birth centre (Table 9). About two-thirds of mothers who planned to give birth in a birth centre actually did so. The number of reported planned homebirths declined from 202 in 1998 to 130 in 2002.

**TABLE 9**

### CONFINEMENTS BY PLACE OF BIRTH, NSW 1998–2002

Place of birth	1998		1999		Year 2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%	No.	%
Hospital	80835	95.0	82103	95.5	82782	95.7	80984	96.0	81230	96.0
Birth centre	2514	3.0	2249	2.6	2205	2.6	2038	2.4	2030	2.4
Planned birth centre/ hospital admission	1154	1.4	1070	1.2	959	1.1	822	1.0	881	1.0
Planned homebirth	147	0.2	139	0.2	108	0.1	144	0.2	99	0.1
Planned homebirth/ hospital admission	55	0.1	43	0.1	38	0.0	38	0.0	31	0.0
Born before arrival	366	0.4	363	0.4	366	0.4	353	0.4	316	0.4
Not stated	1	0.0	0	0.0	2	0.0	0	0.0	0	0.0
TOTAL	85072	100.0	85967	100.0	86460	100.0	84379	100.0	84587	100.0

Source: NSW Midwives Data Collection (HOIST). Centre for Epidemiology and Research, NSW Department of Health.

## Hypertension and diabetes

Pre-eclampsia was reported in about 6 per cent of mothers and essential hypertension in about 1 per cent. These rates have not changed substantially over the last five years (Table 10).

In 2002, gestational diabetes was reported in 4.4 per cent of mothers, rising from 3.7 per cent reported in 1998. Diabetes mellitus was reported in about 0.5 per cent of mothers.

**TABLE 10**

### CONFINEMENTS BY PRESENCE OF HYPERTENSION OR DIABETES, NSW 1998–2002

Condition	1998		1999		Year 2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%	No.	%
Diabetes mellitus	323	0.4	363	0.4	392	0.5	404	0.5	462	0.5
Gestational diabetes	3118	3.7	3254	3.8	3386	3.9	3213	3.8	3693	4.4
Essential hypertension	779	0.9	816	0.9	858	1.0	823	1.0	940	1.1
Pre-eclampsia	5393	6.3	6194	7.2	6082	7.0	5360	6.4	4839	5.7
TOTAL CONFINEMENTS	85072	100.0	85967	100.0	86460	100.0	84379	100.0	84587	100.0

Source: NSW Midwives Data Collection (HOIST). Centre for Epidemiology and Research, NSW Department of Health.

## Labour and delivery

The rate of spontaneous onset of labour fell from 65.5 per cent in 1998 to 61.1 per cent in 2002 (Table 11). Nine per cent of labours were augmented with oxytocics or prostaglandins in 2002.

The rate of induction of labour rose slightly from 24.2 per cent in 1998 to 25.0 per cent in 2002. The most common reported reason for induction of labour in 2002 was prolonged pregnancy (41 or more weeks) (34.7 per cent), followed by hypertensive disease (12.0 per cent), prelabour rupture of membranes (10.0 per cent), diabetes (4.0 per cent), suspected intrauterine growth retardation (3.6 per cent) and fetal death (1.0 per cent).

The rate of normal vaginal birth decreased from 69.5 per cent in 1998 to 64.2 per cent in 2002 (Table 12). The caesarean section rate increased from 19.1 to 24.9 per

cent. The rate of instrumental delivery remained steady at about 10 to 11 per cent, accompanied by a change in the pattern of instrumental delivery: the rate of vacuum extraction rose from 5.2 to 6.9 per cent and the rate of forceps delivery declined from 5.3 to 3.6 per cent.

Operative and instrumental deliveries continue to be more common among privately than publicly insured mothers (Table 13). The changing pattern in type of delivery is evident in both groups between 1997 and 2001. Among privately insured mothers the rate of normal vaginal birth decreased from 59.8 to 55.2 per cent and the rate of caesarean section increased from 24.4 to 30.0 per cent. Among publicly insured mothers the rate of normal vaginal birth decreased from 75.1 to 72.6 per cent and the rate of caesarean section increased from 15.4 to 19.4 per cent.

**TABLE 11**

**CONFINEMENTS BY ONSET AND AUGMENTATION OF LABOUR, NSW 1998–2002**

Onset of labour	1998		Year 1999		2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%	No.	%
Spontaneous	39281	46.2	39706	46.2	40042	46.3	37492	44.4	37615	44.5
Spontaneous augmented with ARM	7997	9.4	7844	9.1	7014	8.1	6684	7.9	6422	7.6
Spontaneous augmented with oxytocics–prostaglandins#	8411	9.9	8657	10.1	9050	10.5	8297	9.8	7644	9.0
No labour	8800	10.3	9147	10.6	9926	11.5	10986	13.0	11720	13.9
Induced—oxytocics–prostaglandins	7893	9.3	7626	8.9	7493	8.7	7422	8.8	7414	8.8
Induced—ARM only	1462	1.7	1305	1.5	1196	1.4	1181	1.4	1193	1.4
Induced—ARM–oxytocics–prostaglandins	11069	13.0	11527	13.4	11516	13.3	12033	14.3	12262	14.5
Induced—other##	138	0.2	154	0.2	215	0.2	277	0.3	305	0.4
Not stated	21	0.0	1	0.0	8	0.0	7	0.0	12	0.0
TOTAL	85072	100.0	85967	100.0	86460	100.0	84379	100.0	84587	100.0

Source: NSW Midwives Data Collection (HOIST). Centre for Epidemiology and Research, NSW Department of Health.

# This category includes other forms of induction such as Foley's catheter.

**TABLE 12**

**CONFINEMENTS BY TYPE OF DELIVERY, NSW 1998–2002**

Type of delivery	1998		Year 1999		2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%	No.	%
Normal vaginal	59097	69.5	58951	68.6	58049	67.1	55206	65.4	54271	64.2
Forceps	4478	5.3	4190	4.9	3904	4.5	3398	4.0	3034	3.6
Vacuum extraction	4453	5.2	5152	6.0	5367	6.2	5499	6.5	5855	6.9
Vaginal breech	805	0.9	762	0.9	669	0.8	383	0.5	353	0.4
Elective caesarean section	8800	10.3	9147	10.6	9926	11.5	10986	13.0	11720	13.9
Emergency caesarean section#	7416	8.7	7765	9.0	8530	9.9	8894	10.5	9335	11.0
Not stated	23	0.0	0	0.0	15	0.0	13	0.0	19	0.0
TOTAL	85072	100.0	85967	100.0	86460	100.0	84379	100.0	84587	100.0

Source: NSW Midwives Data Collection (HOIST). Centre for Epidemiology and Research, NSW Department of Health.

# Emergency caesarean section includes caesarean sections where the onset of labour was not stated.

**TABLE 13****CONFINEMENTS BY HEALTH INSURANCE STATUS AND TYPE OF DELIVERY, NSW 1997–2001**

Insurance status— type of delivery	Year									
	1997		1998		1999		2000		2001	
	No.	%	No.	%	No.	%	No.	%	No.	%
<b>Public</b>										
Normal vaginal	45183	75.1	44007	73.7	44690	72.8	43688	71.8	37610	72.6
Forceps	2643	4.4	2365	4.0	2440	4.0	2202	3.6	1442	2.8
Vacuum extraction	2295	3.8	2645	4.4	3174	5.2	3120	5.1	2482	4.8
Vaginal breech	733	1.2	615	1.0	601	1.0	512	0.8	255	0.5
Elective caesarean section	4684	7.8	5038	8.4	5248	8.5	5683	9.3	5265	10.2
Emergency caesarean section#	4610	7.7	4990	8.4	5263	8.6	5658	9.3	4778	9.2
Not stated	45	0.1	13	0.0	0	0.0	12	0.0	3	0.0
<b>TOTAL</b>	<b>60193</b>	<b>100.0</b>	<b>59673</b>	<b>100.0</b>	<b>61416</b>	<b>100.0</b>	<b>60875</b>	<b>100.0</b>	<b>51835</b>	<b>100.0</b>
<b>Private</b>										
Normal vaginal	15929	59.8	14019	58.5	13444	57.4	13119	55.9	13447	55.2
Forceps	2368	8.9	2048	8.5	1720	7.3	1564	6.7	1395	5.7
Vacuum extraction	1621	6.1	1744	7.3	1940	8.3	2050	8.7	2122	8.7
Vaginal breech	185	0.7	153	0.6	132	0.6	130	0.6	66	0.3
Elective caesarean section	3927	14.7	3649	15.2	3763	16.1	3997	17.0	4555	18.7
Emergency caesarean section#	2581	9.7	2339	9.8	2435	10.4	2619	11.2	2761	11.3
Not stated	34	0.1	10	0.0	0	0.0	3	0.0	8	0.0
<b>TOTAL##</b>	<b>26645</b>	<b>100.0</b>	<b>23962</b>	<b>100.0</b>	<b>23434</b>	<b>100.0</b>	<b>23482</b>	<b>100.0</b>	<b>24354</b>	<b>100.0</b>
<b>TOTAL##</b>										
Normal vaginal	61175	70.4	59097	69.5	58951	68.6	58049	67.1	51057	67.0
Forceps	5014	5.8	4478	5.3	4190	4.9	3904	4.5	2837	3.7
Vacuum extraction	3919	4.5	4453	5.2	5152	6.0	5367	6.2	4605	6.0
Vaginal breech	921	1.1	805	0.9	762	0.9	669	0.8	321	0.4
Elective caesarean section	8616	9.9	8800	10.3	9147	10.6	9926	11.5	9820	12.9
Emergency caesarean section#	7195	8.3	7416	8.7	7765	9.0	8530	9.9	7540	9.9
Not stated	80	0.1	23	0.0	0	0.0	15	0.0	11	0.0
<b>TOTAL</b>	<b>86920</b>	<b>100.0</b>	<b>85072</b>	<b>100.0</b>	<b>85967</b>	<b>100.0</b>	<b>86460</b>	<b>100.0</b>	<b>76191</b>	<b>100.0</b>

Source: 1997: NSW Midwives Data Collection (HOIST). 1998–2001: Linked data of the NSW Midwives Data Collection and NSW Inpatient Statistics Collection. Centre for Epidemiology and Research, NSW Department of Health.

# Emergency caesarean section includes caesarean sections where the onset of labour was not stated.

## Total includes confinements where type of health insurance was not stated.

**Pain relief**

There has been a trend towards increased use of spinal anaesthetics, from 3.9 per cent in 1998 to 10.3 per cent in 2002. The proportion of mothers having no pain relief during labour or delivery decreased from 14.9 per cent in 1998 to 10.8 per cent in 2002 (Table 14).

In 2002, almost one half (48.2 per cent) of all mothers used nitrous oxide for pain relief, 27.8 per cent had an epidural anaesthetic, and 24.9 per cent received intramuscular narcotics.

**TABLE 14****CONFINEMENTS BY TYPE OF PAIN RELIEF, NSW 1998–2002**

Type of pain relief #	Year									
	1998		1999		2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%	No.	%
Epidural	22917	26.9	24289	28.3	25728	29.8	24572	29.1	23543	27.8
General anaesthetic	5004	5.9	4735	5.5	4753	5.5	4866	5.8	4811	5.7
IM Narcotics	22274	26.2	22800	26.5	22654	26.2	21451	25.4	21038	24.9
Nitrous Oxide	41273	48.5	42361	49.3	42303	48.9	40964	48.5	40729	48.2
Spinal	3314	3.9	4179	4.9	5248	6.1	6677	7.9	8672	10.3
Nil	12656	14.9	11468	13.3	10518	12.2	9674	11.5	9163	10.8
<b>TOTAL CONFINEMENTS</b>	<b>85072</b>	<b>100.0</b>	<b>85967</b>	<b>100.0</b>	<b>86460</b>	<b>100.0</b>	<b>84379</b>	<b>100.0</b>	<b>84587</b>	<b>100.0</b>

Source: NSW Midwives Data Collection (HOIST). Centre for Epidemiology and Research, NSW Department of Health.

# More than one type of pain relief may be used.



## Baby sex

There were no significant changes in the pattern of baby sex since 1998, with slightly more male babies born than females in each year. In 2002, 44,058 (51.2 per cent) of babies were male, 41,858 (48.7 per cent) were female, 15 were of indeterminate sex, and the sex was not reported for 74 babies. This compares with babies born in 1998, when 44,283 (51.3 per cent) were male, 41,960 (48.6 per cent) were female, 14 were of indeterminate sex, and the sex was not reported for 48 babies.

## Gestational age

In 2002, 7.1 per cent of babies were born prematurely (less than 37 weeks gestation). This is similar to the rate of 6.9 per cent in 1998 (Table 15). Over the five year period, about 90 per cent of babies were born at term (37-41 weeks gestation), and about 2 per cent were postmature (41-plus weeks gestation).

**TABLE 15**

**BIRTHS BY GESTATIONAL AGE, NSW 1998-2002**

Gestational age (weeks)	1998		Year 1999		2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%	No.	%
20-27	588	0.7	585	0.7	623	0.7	628	0.7	594	0.7
28-31	607	0.7	625	0.7	663	0.8	667	0.8	612	0.7
32-36	4758	5.5	5026	5.8	5114	5.8	4890	5.7	4865	5.7
37-41	78463	90.9	79114	90.6	79368	90.3	77566	90.3	77865	90.5
42 +	1871	2.2	1932	2.2	2148	2.4	2093	2.4	2047	2.4
Not stated	18	0.0	7	0.0	6	0.0	14	0.0	22	0.0
TOTAL	86305	100.0	87289	100.0	87922	100.0	85858	100.0	86005	100.0

Source: NSW Midwives Data Collection (HOIST). Centre for Epidemiology and Research, NSW Department of Health.

## Birthweight

Since 1998, the rate of low birthweight (less than 2,500 grams) has been about six per cent (Table 16). The rate was 6.4 per cent in 2002.

**TABLE 16**

**BIRTHS BY BIRTHWEIGHT, NSW 1998-2002**

Birthweight (grams)	1998		Year 1999		Year 2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%	No.	%
Less than 500	190	0.2	212	0.2	228	0.3	243	0.3	212	0.2
500-999	398	0.5	391	0.4	425	0.5	416	0.5	399	0.5
1000-1499	481	0.6	509	0.6	546	0.6	526	0.6	469	0.5
1500-1999	1017	1.2	1076	1.2	1079	1.2	1043	1.2	1083	1.3
2000-2499	3147	3.6	3353	3.8	3383	3.8	3283	3.8	3344	3.9
2500-2999	12810	14.8	12942	14.8	12819	14.6	12783	14.9	12838	14.9
3000-3499	30974	35.9	30978	35.5	30647	34.9	30312	35.3	30504	35.5
3500-3999	26818	31.1	27173	31.1	27483	31.3	26542	30.9	26676	31.0
4000-4499	8807	10.2	9002	10.3	9454	10.8	9060	10.6	8921	10.4
4500+	1597	1.9	1629	1.9	1811	2.1	1607	1.9	1509	1.8
Not stated	66	0.1	24	0.0	47	0.1	43	0.1	50	0.1
TOTAL	86305	100.0	87289	100.0	87922	100.0	85858	100.0	86005	100.0

Source: NSW Midwives Data Collection (HOIST). Centre for Epidemiology and Research, NSW Department of Health.

## Apgar score

In 2002, 2.1 per cent of babies were born with an Apgar score of less than seven at five minutes and 1.0 per cent were born with a score less than four (Table 17). These rates are similar to those of previous years.

**TABLE 17**

**BIRTHS BY APGAR SCORE AT FIVE MINUTES, NSW 1998–2002 #**

Apgar score	1998		1999		Year 2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%	No.	%
0–4	1001	1.2	996	1.1	1043	1.2	922	1.1	902	1.0
5–6	990	1.1	1098	1.3	956	1.1	938	1.1	893	1.0
7+	84114	97.5	85028	97.4	85756	97.5	83797	97.6	84033	97.7
Not stated	200	0.2	167	0.2	167	0.2	201	0.2	177	0.2
TOTAL	86305	100.0	87289	100.0	87922	100.0	85858	100.0	86005	100.0

Source: NSW Midwives Data Collection (HOIST). Centre for Epidemiology and Research, NSW Department of Health.

# Includes stillbirths and live births.

## Special care and neonatal intensive care

In 2002, 14.8 per cent of babies were admitted to special care units and 2.6 per cent were admitted to neonatal intensive care units (Table 18). These rates are similar to previous years.

**TABLE 18**

**BIRTHS BY ADMISSION TO SPECIAL CARE OR NEONATAL INTENSIVE CARE UNITS, NSW 1998–2002**

Unit of admission	1998		1999		Year 2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%	No.	%
Special care unit	13585	15.7	14430	16.5	13842	15.7	12900	15.0	12740	14.8
Neonatal intensive care unit	2254	2.6	2306	2.6	2147	2.4	2190	2.6	2196	2.6
TOTAL	86305	100.0	87289	100.0	87922	100.0	85858	100.0	86005	100.0

Source: NSW Midwives Data Collection (HOIST). Centre for Epidemiology and Research, NSW Department of Health.

## Perinatal outcome

In the period 1998–2002 the perinatal mortality rate varied from 8.7 to 9.6 per 1,000 (Table 19). In 2002, about two-thirds of all perinatal deaths were stillbirths and one third were neonatal deaths.

In 2002, of the 748 perinatal deaths in NSW, 734 (98.1 per cent) were reported among planned hospital births, 8 (1.1 per cent) among planned birth centre births, none among planned home births, and 6 were among babies born before arrival at hospital.

**TABLE 19**

**BIRTHS BY PERINATAL OUTCOME, NSW 1998–2002#**

Year	Liveborn surviving		Stillborn		Perinatal Outcome Neonatal death		Not stated		Total births		Perinatal mortality rate/1,000 births
	No.	%	No.	%	No.	%	No.	%	No.	%	
1998	85384	98.9	595	0.7	208	0.2	118	0.1	86305	100.0	9.3
1999	86473	99.1	533	0.6	266	0.3	17	0.0	87289	100.0	9.2
2000	87076	99.0	595	0.7	247	0.3	4	0.0	87922	100.0	9.6
2001	85063	99.1	538	0.6	251	0.3	6	0.0	85858	100.0	9.2
2002	85222	99.1	515	0.6	233	0.3	35	0.0	86005	100.0	8.7

Source: NSW Midwives Data Collection (HOIST). Centre for Epidemiology and Research, NSW Department of Health.

# Perinatal deaths include deaths reported to the MDC only. As the MDC form is completed at discharge or transfer of the baby, deaths occurring after this time may not be reported to the MDC.

## Maternal deaths

In the period 1990–2000, 128 deaths were reported among pregnant women or women who gave birth less than six weeks previously. Of these, 43 (33.6 per cent) died of incidental causes not related to the pregnancy or its management; 59 (46.1 per cent) deaths were found to be directly due to pregnancy or its management; 25 (19.5 per cent) deaths were found to result from pre-existing

disease or disease which developed during pregnancy (not due to direct obstetric causes), but which may have been aggravated by the physiologic effects of pregnancy; and there was one death for which the cause was not determined (Table 20). Table 21 shows maternal deaths by cause in NSW for 2000.

**TABLE 20**

**MATERNAL DEATHS BY YEAR, NSW 1990–2001<sup>#</sup>**

Year	Direct		Indirect		Classification Total Direct & Indirect		Incidental		TOTAL	
	No.	Rate/ 100,000	No.	Rate/ 100,000	No.	Rate/ 100,000	No.	Rate/ 100,000	No.	Rate/ 100,000
1990	4	4.6	6	6.9	10	11.6	2	2.3	12	13.9
1991	4	4.7	1	1.2	5	5.8	1	1.2	6	7.0
1992	5	5.7	1	1.1	6	6.8	5	5.7	11	12.5
1993	6	6.9	1	1.2	7	8.1	6	6.9	13	15.0
1994	8	9.2	1	1.2	9	10.4	3	3.5	12	13.8
1995	7	8.1	2	2.3	9	10.4	6	7.0	15	17.4
1996	6	7.0	1	1.2	7	8.2	5	5.9	12	14.1
1997	7	8.1	2	2.3	9	10.5	5	5.8	14	16.1
1998	4	4.7	4	4.7	8	9.4	3	3.5	11	12.9
1999 <sup>##</sup>	4	4.7	1	1.2	5	5.8	6	7.0	12	14.0
2000	4	4.7	5	5.9	9	10.7	1	1.2	10	11.9
2001 <sup>###</sup>									13	15.4

Source: NSW Maternal and Perinatal Committee.

<sup>#</sup> Includes all deaths of women who were pregnant at the time of death, or who died within 42 days of childbirth.

Direct deaths include those resulting from obstetric complications of the pregnant state, including its management.

Indirect deaths include those resulting from preexisting disease or disease which developed during pregnancy and was not due to direct obstetric causes but which may have been aggravated by the physiological effects of pregnancy.

Incidental deaths are those where the pregnancy is unlikely to have contributed significantly to the death.<sup>1</sup>

<sup>##</sup> Total for 1999 includes one death of undetermined cause

<sup>###</sup> Classification incomplete for 2001.

**TABLE 21**

**MATERNAL DEATHS BY CAUSE, NSW 2000**

Classification	Cause	No.
Direct	Streptococcal septicaemia	1
Direct	Intracranial haemorrhage associated with pre-eclampsia	1
Direct	Amniotic fluid embolism and haemorrhage following uterine tear	1
Direct	Ruptured ectopic pregnancy	1
Indirect	Pulmonary thromboembolism	1
Indirect	Adult respiratory distress syndrome	1
Indirect	Multiple organ failure following pneumonia	1
Indirect	Rupture of splenic artery aneurysm	1
Indirect	Churg Strauss vasculitis	1
Incidental	Asthma	1
TOTAL		10

Source: NSW Maternal and Perinatal Committee.

<sup>#</sup> Includes all deaths of women who were pregnant at the time of death, or who died within 42 days of childbirth.

Direct deaths include those resulting from obstetric complications of the pregnant state, including its management.

Indirect deaths include those resulting from preexisting disease or disease which developed during pregnancy and was not due to direct obstetric causes but which may have been aggravated by the physiological effects of pregnancy.<sup>1</sup>

Incidental deaths are those where the pregnancy is unlikely to have contributed significantly to the death.

## Reference

1. National Health and Medical Research Council. *Report on Maternal Deaths in Australia 1994–96*. Canberra: NHMRC and AIHW National Perinatal Statistics Unit, 2001.