

## 7. Women's health

This section presents 2004 data for selected indicators of obstetric health in women, including the number, percentage of deliveries, and time trends, by DHB and ethnic group, for the following:

- Deliveries
- Assisted deliveries
- Caesarean sections
- Pre-eclampsia.

In addition, the number and rate of hysterectomies is presented by DHB and ethnic group. Only public hospital deliveries were included, therefore excluding the small number of private hospital deliveries and home births.

### 7.1. Deliveries

This section presents 2004 data for the following:

- Number and rate of deliveries by DHB and ethnic group
- Average age of mothers at delivery, and average age of mothers at first delivery, by DHB over time
- Total fertility rate of women by DHB over time.

#### [Number and rate of deliveries](#)

Table 7.1.1 shows the number and rate of deliveries in 2004 by DHB and ethnic group. Asian has been incorporated into Other for the calculations of delivery rate, and rate was calculated using the population aged 15-44 years of age. Counties Manukau residents had both the highest delivery rate and the greatest number of deliveries in the Auckland region in 2004 overall, and for each ethnicity. The highest delivery rate in CMDHB was in Pacific women (making up 41% of all Pacific deliveries in New Zealand) followed by Maori (15%). Overall 14% of deliveries to New Zealand women were to CMDHB residents.

**Table 7.1.1: Number and rate (per 1000) of deliveries by DHB and ethnic group for 2004**

| DHB of residence | Number |         |       |        |        | Rate  |         |       |       |
|------------------|--------|---------|-------|--------|--------|-------|---------|-------|-------|
|                  | Maori  | Pacific | Asian | Other  | Total  | Maori | Pacific | Other | Total |
| Counties Manukau | 1,605  | 2,274   | 978   | 2,562  | 7,419  | 90.4  | 111.5   | 62.1  | 78.0  |
| Auckland         | 507    | 1,129   | 1,342 | 3,054  | 6,032  | 57.0  | 89.2    | 50.6  | 55.6  |
| Waitemata        | 790    | 768     | 1,028 | 4,103  | 6,689  | 68.6  | 95.5    | 57.7  | 61.6  |
| Northland        | 837    | 31      | 25    | 940    | 1,833  | 77.4  | 76.5    | 59.3  | 66.7  |
| New Zealand      | 10,766 | 5,480   | 4,815 | 33,282 | 5,4343 | 74.4  | 94.3    | 56.0  | 61.5  |

Rate per 1000 women aged 15-44 years

#### [Age of mothers at delivery](#)

Table 7.1.2 and Figure 7.1.1 show the average age of mothers at delivery from 1990 to 2004, and Table 7.1.3 and Figure 7.1.2 show the average age of mothers at their first delivery from 1993 to 2004. Table 7.1.4 and Figure 7.1.3 shows the average age of mothers at first delivery by ethnic group in CM. The data for average age at first delivery does not include overseas delivery records which will bias upward the average in new migrants, possibly contributing to the apparent higher average age in Asians (Table 7.1.4).

The average age of mothers giving birth is increasing over time in the Auckland region (especially Auckland DHB) and nationally (Table 7.1.2 and Figure 7.1.1). For CMDHB it has risen around 2 years over the past decade. The average age of mothers in CMDHB in 2004 (29.1 years) is 1.5 and 2 years less than mothers in Waitemata and Auckland, respectively, the margins widening particularly from 2000 on.

**Table 7.1.2: Average age of mothers at delivery in public hospitals, from 1990 to 2004 by DHB of residence**

| DHB              | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Counties Manukau | 27.0 | 27.3 | 27.5 | 27.7 | 27.9 | 28.0 | 28.2 | 28.3 | 28.4 | 28.5 | 28.7 | 28.7 | 28.9 | 28.8 | 29.1 |
| Auckland         | 28.3 | 28.6 | 28.8 | 29.3 | 29.5 | 29.6 | 29.8 | 29.9 | 30.2 | 30.4 | 30.6 | 30.8 | 31.0 | 31.1 | 31.1 |
| Waitemata        | 28.4 | 28.5 | 28.8 | 28.9 | 29.1 | 29.3 | 29.6 | 29.7 | 30.0 | 30.1 | 30.1 | 30.2 | 30.5 | 30.5 | 30.6 |
| Northland        | 27.0 | 27.0 | 27.3 | 27.4 | 27.3 | 27.4 | 27.4 | 27.6 | 28.2 | 28.1 | 28.4 | 28.4 | 28.3 | 28.4 | 28.3 |
| New Zealand      | 27.6 | 27.7 | 27.9 | 28.1 | 28.3 | 28.5 | 28.6 | 28.8 | 29.0 | 29.1 | 29.3 | 29.4 | 29.5 | 29.6 | 29.7 |

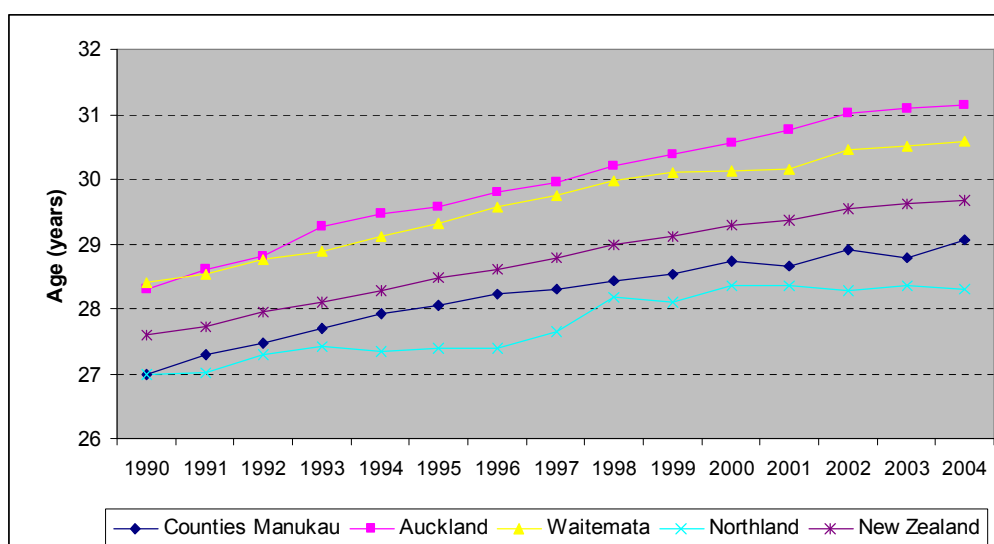
**Table 7.1.3: Average age of mothers at first delivery in a public hospital in New Zealand from 1994 to 2004 by DHB of residence**

| DHB              | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|------------------|------|------|------|------|------|------|------|------|------|------|------|
| Counties Manukau | 27.3 | 27.1 | 27.1 | 27.0 | 27.2 | 27.1 | 27.3 | 27.1 | 27.4 | 27.2 | 27.4 |
| Auckland         | 28.9 | 28.8 | 28.9 | 29.1 | 29.5 | 29.7 | 29.8 | 29.9 | 30.1 | 30.3 | 30.3 |
| Waitemata        | 28.5 | 28.5 | 28.7 | 28.9 | 29.2 | 29.2 | 29.2 | 29.1 | 29.5 | 29.5 | 29.6 |
| Northland        | 26.5 | 26.3 | 26.4 | 26.1 | 26.7 | 26.7 | 26.7 | 26.4 | 26.0 | 26.3 | 26.3 |
| New Zealand      | 27.6 | 27.6 | 27.7 | 27.7 | 28.0 | 28.0 | 28.2 | 28.1 | 28.3 | 28.4 | 28.3 |

**Table 7.1.4: Average age of mothers at first delivery in a public hospital for CMDHB residents from 1994 to 2004 by ethnic group**

| Ethnic group | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|--------------|------|------|------|------|------|------|------|------|------|------|------|
| Maori        | 24.5 | 24.0 | 23.5 | 24.0 | 23.8 | 23.7 | 23.5 | 23.3 | 22.8 | 22.5 | 22.9 |
| Pacific      | 26.8 | 26.5 | 25.7 | 26.0 | 25.9 | 25.8 | 26.0 | 26.0 | 25.9 | 25.5 | 25.5 |
| Asian        | 29.7 | 29.6 | 30.2 | 29.1 | 29.4 | 29.7 | 29.7 | 29.2 | 29.5 | 29.5 | 29.7 |
| Other        | 28.3 | 28.1 | 28.0 | 27.7 | 28.7 | 28.8 | 28.9 | 28.8 | 29.2 | 29.1 | 29.3 |
| Total        | 27.3 | 27.1 | 27.1 | 27.0 | 27.2 | 27.1 | 27.3 | 27.1 | 27.4 | 27.2 | 27.4 |

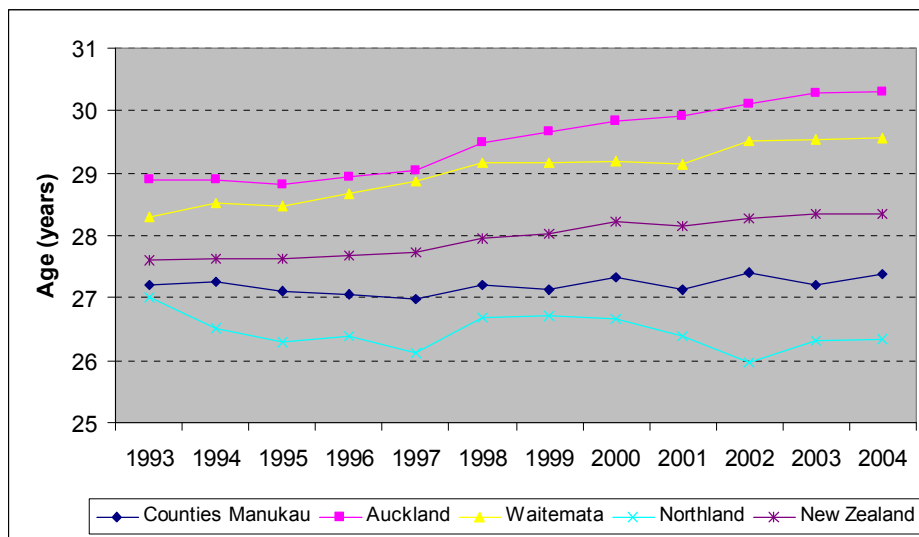
**Figure 7.1.1: Average age of mothers at delivery in public hospitals from 1990 to 2004 by DHB of residence**



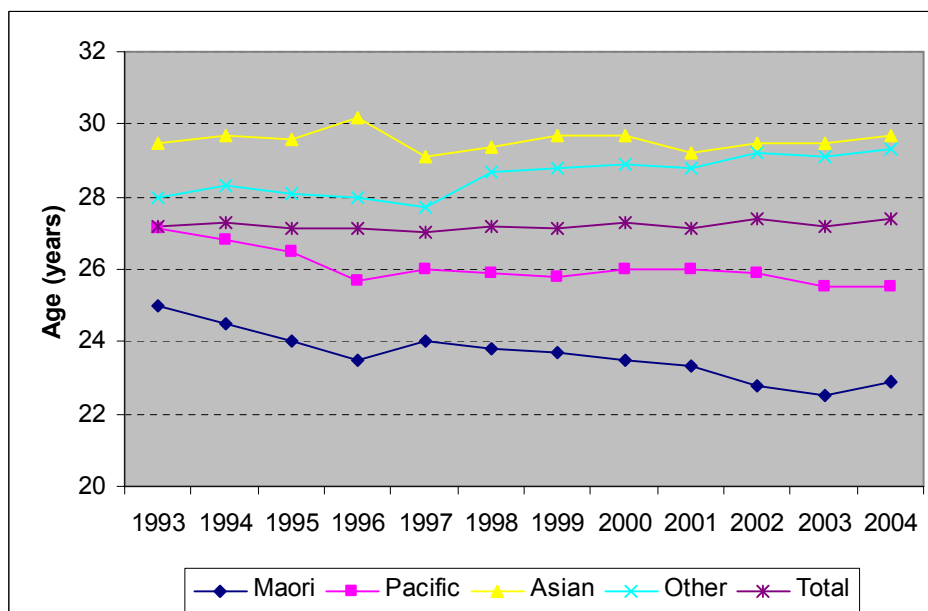
In contrast, the average age of mothers at their first delivery (Table 7.1.3 and Figure 7.1.2) has not increased in CMDHB, although it has been increasing nationally and in Waitemata and Auckland. The increase in age of women at first birth in Waitemata and Auckland was less than the average increase in age, suggesting that in the three Auckland regional DHBs women may be spacing their pregnancies at greater intervals than previously.

Within CMDHB Maori and Pacific have shown a decrease in average age of mothers at first birth from 1994 to 2004, with the greatest decrease and youngest ages occurring in Maori (22.9 years) followed by Pacific (25.5) (Table 7.1.4 and Figure 7.1.3). The age of Asian first-time mothers has remained at approximately 29.5 years, while the age of Other mothers has generally increased.

**Figure 7.1.2: Average age of mothers at first delivery in a public hospital in New Zealand from 1993 to 2004 by DHB of residence**



**Figure 7.1.3: Average age of mothers at first delivery in a public hospital for CMDHB residents from 1993 to 2004 by ethnic group**



## Total fertility rate

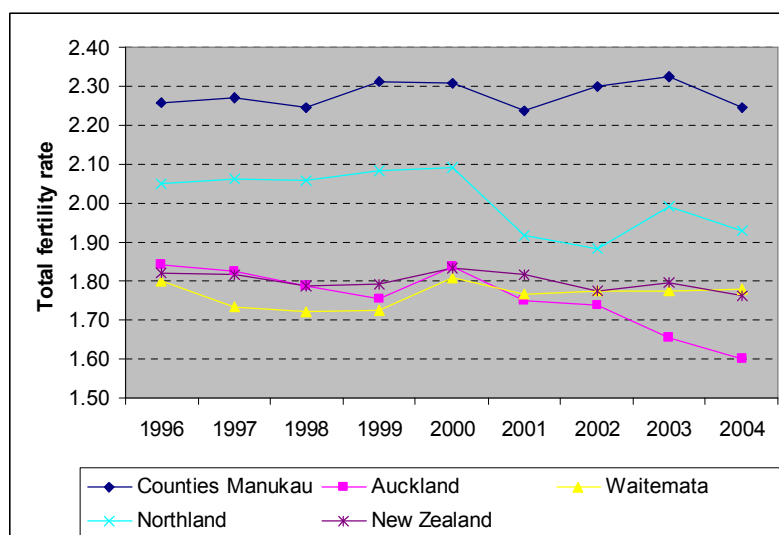
The fertility rate is defined as the number of live births per 1000 women aged 15-44 years in a given year. The total fertility rate (TFR) is the average number of children that would be born to a woman during her reproductive lifetime (15-44 years) if she were to conform to the fertility rate of a given year.

Table 7.1.5 and Figure 7.1.4 show the TFRs for women from 1996 to 2004, according to DHB of residence. The TFR for women in CM (2.3 children per woman) was higher than for women in Auckland, Waitemata, Northland, or nationally. The TFR for women in CM and Waitemata has generally remained steady since 1996, while the TFR for Northland, all NZ, and especially Auckland, has been declining. Since 2001, Auckland DHB has had the lowest TFRs in the Auckland region, and has also been well below the national TFR. CMDHB is one of the few DHBs in the country which has a fertility rate above replacement level.

**Table 7.1.5: Total fertility rate for women aged 15-44 years from 1996 to 2004 by DHB of residence**

| DHB              | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|------------------|------|------|------|------|------|------|------|------|------|
| Counties Manukau | 2.26 | 2.27 | 2.25 | 2.31 | 2.31 | 2.24 | 2.30 | 2.33 | 2.25 |
| Auckland         | 1.84 | 1.83 | 1.79 | 1.75 | 1.84 | 1.75 | 1.74 | 1.65 | 1.60 |
| Waitemata        | 1.80 | 1.73 | 1.72 | 1.72 | 1.81 | 1.77 | 1.77 | 1.77 | 1.78 |
| Northland        | 2.05 | 2.06 | 2.06 | 2.08 | 2.09 | 1.91 | 1.88 | 1.99 | 1.93 |
| New Zealand      | 1.82 | 1.82 | 1.79 | 1.79 | 1.83 | 1.81 | 1.77 | 1.80 | 1.76 |

**Figure 7.1.4: Total fertility rate for women aged 15-44 years from 1996 to 2004 by DHB of residence**



## 7.2. Assisted deliveries

Assisted deliveries are defined as vaginal deliveries that require vacuum or forceps assistance. This section presents data on the following:

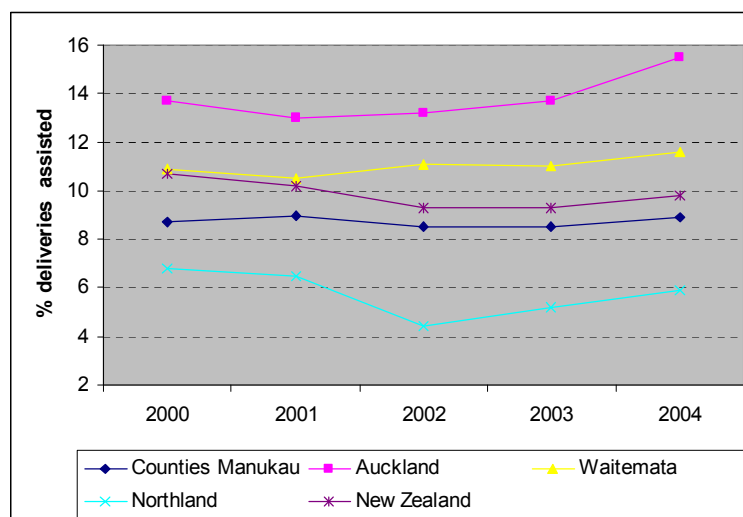
- Number of assisted deliveries
- Percentage of all deliveries that were assisted (women aged 15-44 years): 2004 data, and graphed time trend from 2000 to 2004

Counties Manukau DHB residents had a lower proportion (expressed as a percentage) of deliveries that were assisted (8.9%) than the rest of the Auckland region or nationally (9.8%) (Table 7.2.1 and Figure 7.2.1). In addition, every ethnic group in CM had a lower proportion of assisted deliveries than in the rest of the Auckland region. The proportion of assisted deliveries was highest in Asian and Other groups and lowest in Maori and Pacific in all regions (Table 7.2.1 and Figure 7.2.2). The proportion of assisted deliveries has increased in all regions since 2002 as follows: CM (+0.4%), Auckland (+2.3%), Waitemata (+0.5%), and NZ (+0.4%).

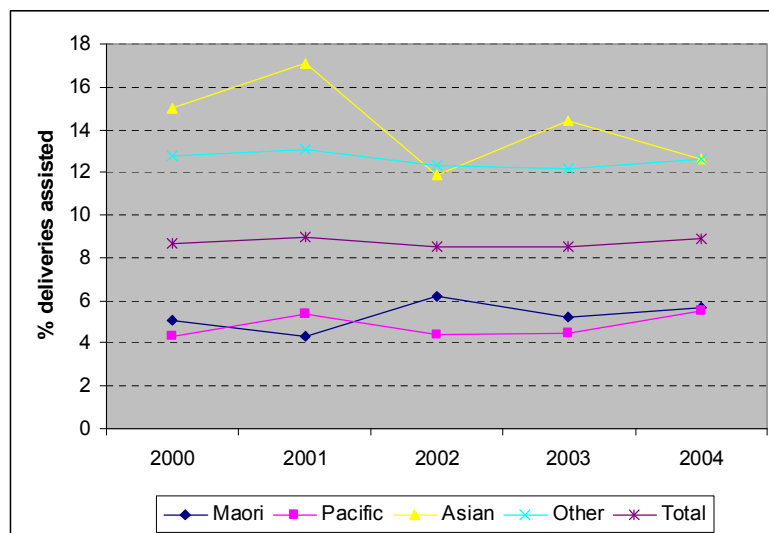
**Table 7.2.1: Number of assisted deliveries and percentage of all deliveries that were assisted in 2004, by ethnic group and DHB.**

| DHB of residence | Number of assisted deliveries |         |       |       |       | Percentage of deliveries |         |       |       |       |
|------------------|-------------------------------|---------|-------|-------|-------|--------------------------|---------|-------|-------|-------|
|                  | Maori                         | Pacific | Asian | Other | Total | Maori                    | Pacific | Asian | Other | Total |
| Counties Manukau | 92                            | 125     | 123   | 322   | 662   | 5.7                      | 5.5     | 12.6  | 12.6  | 8.9   |
| Auckland         | 51                            | 84      | 245   | 552   | 932   | 10.1                     | 7.4     | 18.3  | 18.1  | 15.5  |
| Waitemata        | 62                            | 46      | 145   | 520   | 773   | 7.8                      | 6.0     | 14.1  | 12.7  | 11.6  |
| Northland        | 26                            | 0       | 4     | 79    | 109   | 3.1                      | 0.0     | 16.0  | 8.4   | 5.9   |
| New Zealand      | 549                           | 310     | 696   | 3,752 | 5,307 | 5.1                      | 5.7     | 14.5  | 11.3  | 9.8   |

**Figure 7.2.1: Assisted deliveries as a percentage of all deliveries from 2000 to 2004 by DHB of residence**



**Figure 7.2.2: Assisted deliveries as a percentage of all deliveries from 2000 to 2004 for CMDHB residents by ethnic group**



### 7.3. Caesarean sections

This section presents data on the following:

- Number of caesarean sections
- Percentage of all deliveries that were caesarean (women aged 15-44 years): 2004 data, and graphed time trend from 1990 to 2004

There is ongoing concern regarding the high rates of obstetric intervention at child birth. While the optimum rate for caesarean section is unknown, the World Health Organisation (WHO) recommends that not more than 15% of all deliveries should be caesarean. The proportion of deliveries requiring caesarean section for CMDHB resident women continues to rise from 17% in 2002 to 19% in 2004, although figures for CM have been lower than in Auckland, Waitemata or NZ since 1990 (Table 7.3.1 and Figure 7.3.1). The increase in proportion of caesarean births in CM is occurring at a slower rate than in Auckland and Waitemata – in 1990 the proportion of deliveries that were caesarean was 9.8% in CMDHB and 13.3% in Auckland DHB with a difference of 3.5%, however in 2004 this difference had risen to 7.1% (Figure 7.3.1).

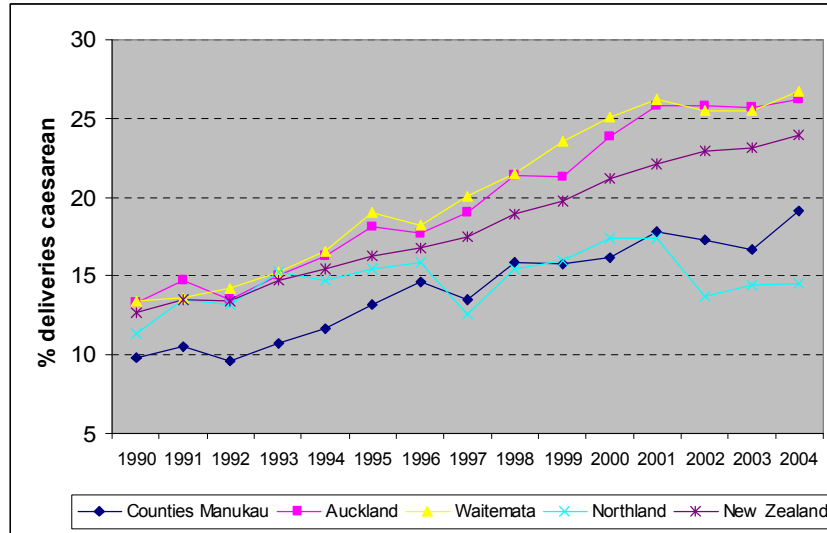
**Table 7.3.1: Number of caesarean sections and percentage of all deliveries that were caesarean in 2004, by ethnic group and DHB.**

| DHB of residence | Number of caesarean sections |         |       |       |        | Percentage of deliveries |         |       |       |       |
|------------------|------------------------------|---------|-------|-------|--------|--------------------------|---------|-------|-------|-------|
|                  | Maori                        | Pacific | Asian | Other | Total  | Maori                    | Pacific | Asian | Other | Total |
| Counties Manukau | 223                          | 367     | 241   | 587   | 1,418  | 13.9                     | 16.1    | 24.6  | 22.9  | 19.1  |
| Auckland         | 99                           | 219     | 371   | 893   | 1,582  | 19.5                     | 19.4    | 27.6  | 29.2  | 26.2  |
| Waitemata        | 130                          | 139     | 302   | 1212  | 1,783  | 16.5                     | 18.1    | 29.4  | 29.5  | 26.7  |
| Northland        | 94                           | 11      | 3     | 158   | 266    | 11.2                     | -       | -     | 16.8  | 14.5  |
| New Zealand      | 1,726                        | 1,046   | 1,333 | 8,919 | 13,024 | 16.0                     | 19.1    | 27.7  | 26.8  | 24.0  |

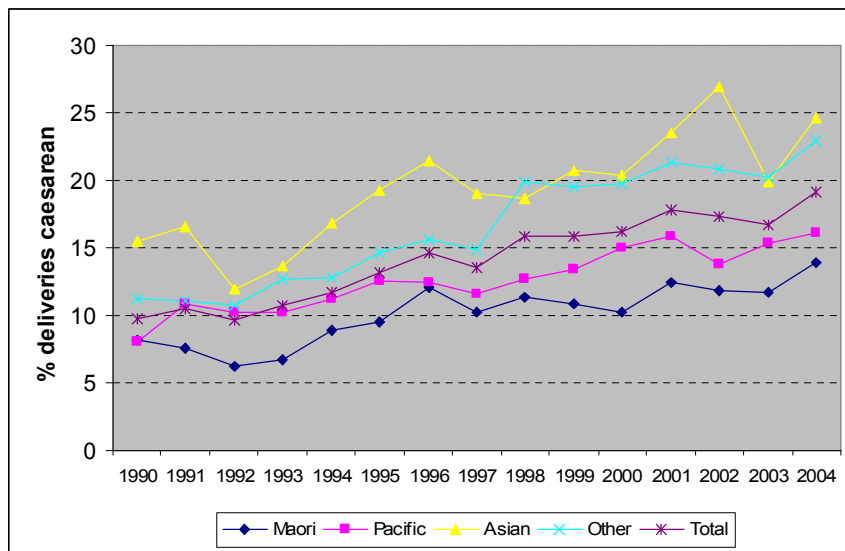
For CMDHB residents Asian and Other groups have had the highest proportion of deliveries that were caesarean since 1990, while Maori have consistently had the lowest (Figure 7.3.2). A similar pattern has been observed across Auckland and nationally (Table 7.3.1). Every ethnic group in CM has a lower proportion of caesarean deliveries than their counterparts in Auckland or nationally (Table 7.3.1). It is also interesting to note that the CMDHB provider arm has the lowest rate of Caesarean section in New Zealand at 16% in 2004 (data not

shown). CMDHB residents who choose to give birth at facilities other than in CMDHB (primarily Auckland City Hospital) have a much higher caesarean rate than those who use CMDHB facilities.

**Figure 7.3.1: Caesarean deliveries as a percentage of all deliveries from 1990 to 2004 by DHB of residence**



**Figure 7.3.2: Caesarean deliveries as a percentage of all deliveries from 1990 to 2004 for CMDHB residents by ethnic group**



## 7.4. Pre-eclampsia

This section presents data on the following:

- Number of women with pre-eclampsia in 2004
- Percentage of all deliveries that were complicated by pre-eclampsia: 2004 data, and graphed time trend from 2000 to 2004

Pre-eclampsia is a condition in pregnancy characterized by high blood pressure and the presence of protein in the urine; it can affect the health of both the mother and the baby, potentially leading to toxæmia and death if untreated. Counties Manukau has consistently had the highest proportion of births complicated by pre-eclampsia, while the proportion in Waitemata has consistently been the lowest of the northern DHBs and well below the national average (Figure 7.4.1). Since the year 2000, the proportion has generally been declining for all northern DHBs and nationally (Figure 7.4.1).

In CMDHB in 2004, Pacific women had the highest, and Asian women the lowest, proportion of deliveries complicated by pre-eclampsia. This was consistent across Auckland and nationally (Table 7.4.1). In CMDHB, Pacific and Maori have had the highest proportion of deliveries with pre-eclampsia since the year 2000, however, while the Maori proportion is clearly dropping, the proportion for Pacific has been rising since 2002 (Figure 7.4.2).

**Table 7.4.1: Number of women with pre-eclampsia and percentage of all deliveries that were complicated by pre-eclampsia in 2004, by ethnic group and DHB of residence**

| DHB of residence | Number of women with pre-eclampsia |         |       |       |       | Percentage of deliveries |         |       |       |       |
|------------------|------------------------------------|---------|-------|-------|-------|--------------------------|---------|-------|-------|-------|
|                  | Maori                              | Pacific | Asian | Other | Total | Maori                    | Pacific | Asian | Other | Total |
| Counties Manukau | 52                                 | 101     | 28    | 84    | 265   | 3.2                      | 4.4     | 2.9   | 3.3   | 3.6   |
| Auckland         | 17                                 | 39      | 35    | 88    | 179   | 3.4                      | 3.5     | 2.6   | 2.9   | 3.0   |
| Waitemata        | 17                                 | 20      | 21    | 83    | 141   | 2.2                      | 2.6     | 2.0   | 2.0   | 2.1   |
| Northland        | 18                                 | 1       | 0     | 25    | 44    | 2.2                      | 3.2     | 0.0   | 2.7   | 2.4   |
| New Zealand      | 321                                | 222     | 125   | 1,002 | 1,670 | 3.0                      | 4.1     | 2.6   | 3.0   | 3.1   |

**Figure 7.4.1: Percentage of deliveries that were complicated by pre-eclampsia from 2000 to 2004 by DHB of residence**

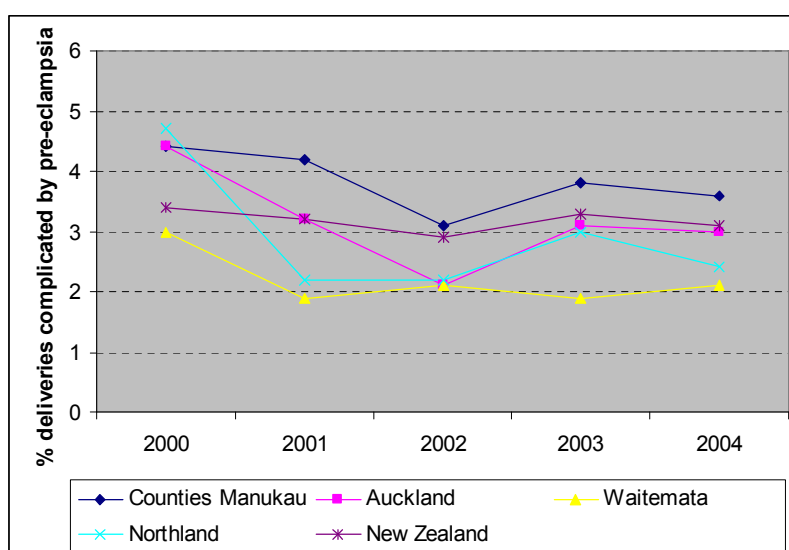
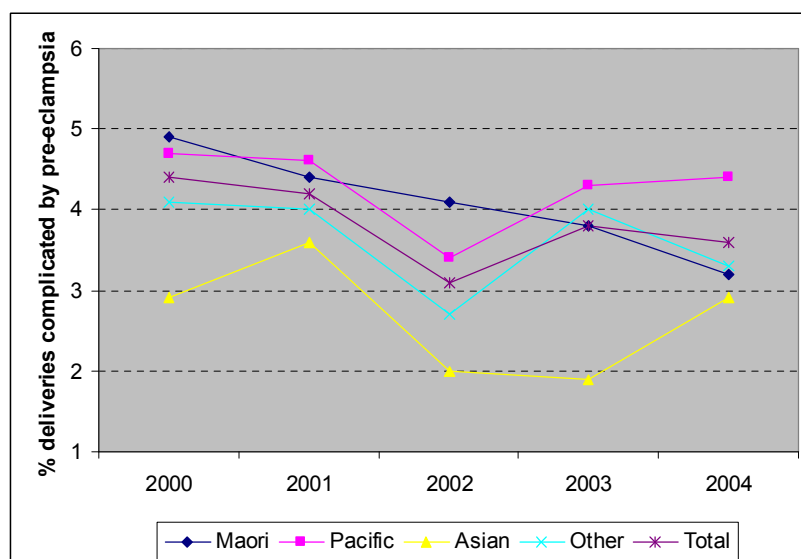


Figure 7.4.2: Percentage of deliveries that were complicated by pre-eclampsia from 2000 to 2004 for CMDHB residents by ethnic group.



## 7.5. Hysterectomy

This section presents the following data:

- Number of women <45 years of age who had a hysterectomy in 2004
- Number of women <45 years of age per 100,000 adults (15+ years of age) who had a hysterectomy from 2000 to 2004 by DHB
- Number of CM women <45 years of age per 100,000 adults (15+ years of age) who had a hysterectomy from 1996 to 2004 by ethnic group.

The “desired” level of hysterectomy is the subject of debate – in the past the hysterectomy rate has been used as an indicator of potentially unneeded surgery for women in their reproductive years<sup>9</sup>. As shown in Table 7.5.2 and Figure 7.5.1, the hysterectomy rate has consistently been higher nationally than in the northern DHBs. Counties Manukau has had a higher rate than Auckland or Waitemata since 2000.

Within CMDHB Asian women have generally had the lowest rate of hysterectomy since 1996. There are no clear differences between the other three ethnic groups although Pacific women have generally had lower rates of hysterectomy than Other or Maori women.

Table 7.5.1: Number of women aged <45 years having a hysterectomy in 2004 by DHB of residence

| DHB of residence | Number of hysterectomies |         |       |       |       |
|------------------|--------------------------|---------|-------|-------|-------|
|                  | Maori                    | Pacific | Asian | Other | Total |
| Counties Manukau | 19                       | 21      | 7     | 45    | 92    |
| Auckland         | 7                        | 7       | 14    | 31    | 59    |
| Waitemata        | 12                       | 8       | 6     | 58    | 84    |
| Northland        | 13                       | 0       | 0     | 26    | 39    |
| New Zealand      | 243                      | 62      | 51    | 860   | 1,216 |

<sup>9</sup> Jackson G, Palmer C, Lindsay A, Pearce J. *Counties Manukau health profile*. Manukau: CMDHB. May 2001.

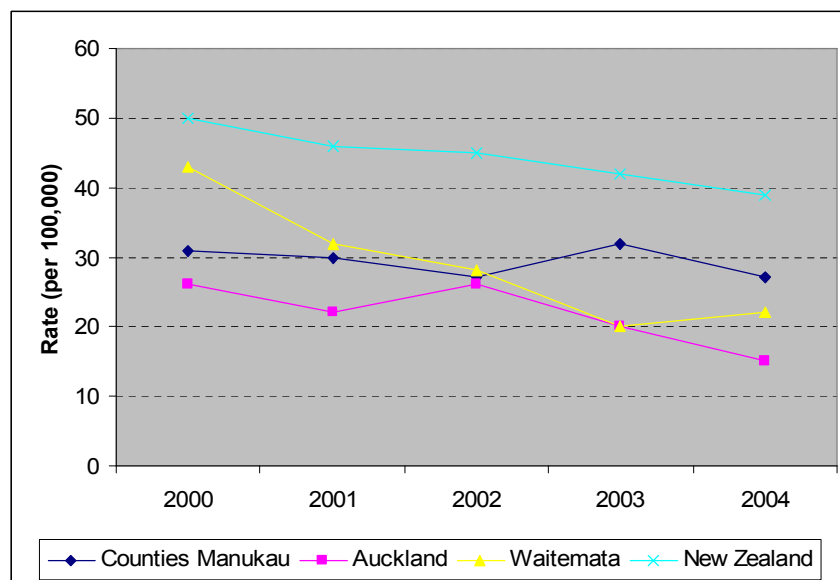
**Table 7.5.2: Number of women (aged 15-44 years) per 100,000 population having a hysterectomy from 2000 to 2004**

| DHB of residence | 2000 | 2001 | 2002 | 2003 | 2004 |
|------------------|------|------|------|------|------|
| Counties Manukau | 31   | 30   | 27   | 32   | 27   |
| Auckland         | 26   | 22   | 26   | 20   | 15   |
| Waitemata        | 43   | 32   | 28   | 20   | 22   |
| New Zealand      | 50   | 46   | 45   | 42   | 39   |

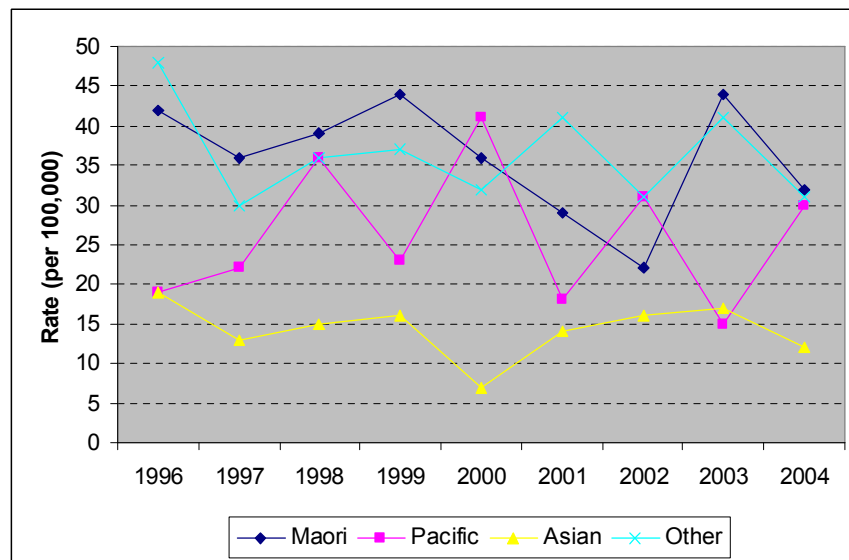
**Table 7.5.3: Number of CMDHB women (aged 15-44 years) per 100,000 population having a hysterectomy from 2000 to 2004 by ethnic group**

| Ethnic group | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|--------------|------|------|------|------|------|------|------|------|------|
| Maori        | 42   | 36   | 39   | 44   | 36   | 29   | 22   | 44   | 32   |
| Pacific      | 19   | 22   | 36   | 23   | 41   | 18   | 31   | 15   | 30   |
| Asian        | 19   | 13   | 15   | 16   | 7    | 14   | 16   | 17   | 12   |
| Other        | 48   | 30   | 36   | 37   | 32   | 41   | 31   | 41   | 31   |
| Total        | 39   | 28   | 34   | 33   | 31   | 30   | 27   | 32   | 27   |

**Figure 7.5.1: Number of women (aged 15-44 years) per 100,000 population (aged 15+ years) having a hysterectomy from 2000 to 2004**



**Figure 7.5.2: Number of CM women (aged 15-44 years) per 100,000 population (aged 15+ years) having a hysterectomy from 2000 to 2004 by ethnic group**



#### Summary – Section 7 women's health

Women in CMDHB had the highest birth rate and the highest total fertility rate (TFR) in the Auckland region in 2004, with the highest birth rate being in Pacific followed by Maori women. CMDHB is one of the few DHBs where the birth rate is above replacement level. Whilst the number of children is static or declining in most parts of NZ in CMDHB it is still growing, although less than in the past (see section 1). While the average age of mothers is increasing in CM, they are still 1.5 to 2 years younger on average than those in the rest of the Auckland region. In contrast to trends occurring nationally and in Waitemata and Auckland, the average age of first time mothers in CM has not increased, and is actually decreasing in Maori and Pacific women. In combination, these trends suggest that women are spacing their children at longer intervals.

Women in CM had a smaller proportion of deliveries requiring instrumental delivery or caesarean section to women in the rest of the Auckland region or nationally. The proportion of caesarean sections has risen since 2002 from 17% to 19%, and is rising at the same rate as the populations of other DHBs, albeit from a lower base. In CMDHB resident women the proportion of deliveries requiring caesarean section was highest in Asian followed by Other, and lowest in Maori women.

Counties Manukau had the highest proportion of births complicated by pre-eclampsia (3.6% of births) in the Northern Region. Pacific and Maori women in CM had the greatest proportion of births complicated by pre-eclampsia while Asian women had the least.

The hysterectomy rate was highest amongst women in CM than in the rest of the Auckland region, although national rates have been higher than in CM. For CMDHB residents Asian women have generally had the lowest rates of hysterectomy since 1996.