Making Pregnancy Safer

November 2009
Before the PMMRC

- NZ Maternity Reports 2000-2004
  - Maternity and Newborn Information System
    - National Minimum Discharge
    - Maternity claims
    - Birth and death certificates
Report on Maternity 2004

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother</td>
<td>54,875</td>
<td></td>
</tr>
<tr>
<td>Liveborn babies:</td>
<td>55,213</td>
<td></td>
</tr>
<tr>
<td><strong>Perinatal deaths</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stillbirths:</td>
<td>441</td>
<td>0.8</td>
</tr>
<tr>
<td>In-hospital neonatal deaths:</td>
<td>144</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>Type of birth</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal births:</td>
<td>33,466</td>
<td>66.5</td>
</tr>
<tr>
<td>Caesarean sections:</td>
<td>12,994</td>
<td>23.7</td>
</tr>
<tr>
<td>Operative births:</td>
<td>5268</td>
<td>9.6</td>
</tr>
</tbody>
</table>
A brief introduction ....

• The PMMRC was established in 2005 by the Minister of Health under the NZ Public Health and Disability Act 2000
• The 10 members of the PMMRC are from midwifery, nursing, obstetrics, paediatrics, pathology, anaesthetics, consumers, as well as Māori and Pacific communities
Purpose of the PMMRC

• To review and report to the Minister of Health on perinatal and maternal deaths with a view to reducing the numbers

• To support quality improvement through local local perinatal and maternal mortality review meetings

• To develop strategic plans and methodologies to reduce morbidity and mortality
Purpose of Report

• To provide an accurate estimate of the absolute numbers of perinatal and maternal deaths in New Zealand
• To describe risk factors for perinatal deaths
• To attempt to identify where maternity and neonatal services might best be focused in order to prevent perinatal and maternal deaths
• To provide a measure of the quality and safety of New Zealand maternity services
Data collection

• Mother and Baby web-based forms are completed by clinical staff

• The National and Local Coordinators ensure complete coverage of all deaths using Births, Deaths and Marriages and Discharge Dataset

• At a local meeting, the PMMRC Local Coordinators and a multidisciplinary team review the death

• Complete the PMMRC Classification using the PSANZ system for perinatal death (since 2006) and potentially avoidable factors (since 2009)
PMMRC reporting

- In March 2009
  - we reported on perinatal data for the second half of 2006

- Today....
  - we are reported on a full year of perinatal and maternal data from 2007
Annual report 2007

• First full report with 12 months data of 677 babies and 11 mothers who died
  – 38 tables
  – 19 figures

• 18 recommendations
  – 8 for the MOH
  – 10 for clinicians and LMCs
Births in New Zealand 1991-2007

Live Births
1991–2007

(000)

65
60
55
50

0
91 93 95 97 99 01 03 05 07

December year
Maternal mortality 2007

• 11 maternal deaths
  – 5 direct
    • 2 PET, PPH, PE, Peripartum cardiomyopathy
  – 5 indirect
    • 4 pre-existing, non obstetric sepsis
  – 1 unclassifiable

• Maternal mortality rate 16.8 per 100,000 maternities
  – 2006 : 23 per 100,000 maternities
  – Not possible to comment on trends with only two years of data
### Some perinatal definitions

#### Fetal and infant death periods

<table>
<thead>
<tr>
<th>Gestation</th>
<th>Birth</th>
<th>7 days</th>
<th>28 days</th>
<th>One year</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 weeks or more or 400 grams birthweight</td>
<td>0 – 7 days</td>
<td>7 – 27 days</td>
<td>28 days – 1 year</td>
<td></td>
</tr>
</tbody>
</table>

- Fetal deaths
- Early neonatal deaths
- Late neonatal deaths
- Post-neonatal deaths
- Perinatal deaths
- Neonatal deaths
- Infant deaths
# Perinatal mortality in NZ 2007

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>2006 Rate *</th>
<th>2007 Rate *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of births (2007)</td>
<td>65,602</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>No. of fetal deaths (TOP &amp; SB)</td>
<td>510</td>
<td>8.9</td>
<td>7.8</td>
</tr>
<tr>
<td>No. of neonatal deaths &lt; 28 days</td>
<td>167</td>
<td>3.4</td>
<td>2.6</td>
</tr>
<tr>
<td>No. of perinatal deaths (fetal deaths and early NND &lt; 7 days)</td>
<td>644</td>
<td>11.9</td>
<td>9.8</td>
</tr>
<tr>
<td>No. of perinatal related deaths (fetal deaths and all NNDs &lt;28 days)</td>
<td>677</td>
<td>12.4</td>
<td>10.3</td>
</tr>
</tbody>
</table>

* Per 1000 babies born
Selected Recommendations

• For the Ministry of Health
  – Improved systems for collection of birth data
    • Establishment of a National Perinatal Epidemiology Unit
    • Birth registrations to include some maternity data

• Why?
  – We now have a complete dataset about the babies who die but have little information about the rest.....
  – We need to improve the currency of the reports
  – Current system is fragmented
Variation across DHBs

- Recommendation for the MOH and DHBs:
  DHB disparities – further research on higher rates of PNM in different DHBs should be undertaken

Why?
Recommendations (cont.d)

• Intrapartum stillbirths at term without congenital abnormality need full investigation including a postmortem

Why?

• 52 babies died during labour
  – 29 after 24 weeks without congenital abnormality
  – 80% were at term
  – Only 41% had a postmortem
  – 50% were classified as hypoxic peripartum deaths
• Sudden Unexplained Deaths in Infancy (SUDI)
  – LMCs should provide information to women and their whanau on SUDI prevention
    • Stop smoking, encourage breast feeding, safe sleeping practice, discourage co-sleeping in babies at risk

Why?
• 22 of 110 babies born after 24 weeks died at home and 10 of these were SUDI deaths
Recommendations (cont.d)

• Bleeding in pregnancy after 20 weeks should have monthly serial growth scans and be advised that there is risk of spontaneous preterm births

Why?
• 20% of stillbirths had bleeding after 20 weeks
• 32% of neonatal deaths had bleeding after 20 weeks
• 50% of these babies were growth restricted using customised birthweight centiles.....
Use of seatbelts in pregnancy

• Three point seat belts should be worn throughout pregnancy with the lap strap placed as low as possible beneath the “bump” lying across the thighs with the diagonal shoulder strap above the “bump” lying between the breasts

Why?

• 3 maternal deaths who were not wearing seatbelts (not included in the statistics as accidental)
From 2009: we are collecting information on each death on the following potentially avoidable factors:

- Organisational and management
- Factors relating to personnel
- Technology and equipment
- Environmental factors
- Factors relating to the woman and her family
• Classifying potentially avoidable events means that we can look for areas where improvements in care could be made

• Part of the quality improvement cycle
  – Measurement of outcomes should lead to change...
What else have we been doing?

- Established process for measuring neonatal encephalopathy
  - Neonatal encephalopathy working group
- Established process for measuring maternal morbidity
  - AMOSS
- Perinatal postmortems
  - published a panui on decisions about perinatal postmortems
  - Supported call for improved services
Today ..... 

• Opportunity to reflect on the findings of the report  
• Hear from local and overseas obstetric and midwifery experts  
• Hear from NZ LMCs and clinicians  
• Take home some messages.....
Acknowledgements

- Vicki Masson, National Coordinator
- Secretariat staff, MOH
- Otago Data Group
- Members of the PMMRC
- Local DHB coordinators
- Clinicians everywhere
- Lynn Sadler, Epidemiologist
He matenga ohorere, he wairua uiui, wairua mutunga-kore

The grief of a sudden, untimely death will never be forgotten