Ending Preventable Stillbirths

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PSANZ Stillbirth and Neonatal Death Alliance
International Stillbirth Alliance

On behalf of The Lancet’s Ending Preventable Stillbirths Series Study Group and collaborators
Presentation outline:

• Overview of the Lancet’s series
• Stillbirth rates and risk factors globally
• High income country
• Australian response
The Ending Preventable Stillbirths Series: What and Who?

Five Papers
1. Stillbirths: progress and unfinished business (Froen et al)
2. Stillbirths: rates, risk factors, and acceleration towards 2030 (Lawn et al) (195 countries, 28 weeks or more gestation)
3. Stillbirths: economic and psychosocial consequences (Heazell et al)
4. Stillbirths: recall to action in high-income countries (Flenady et al)
5. Stillbirths: ending preventable deaths by 2030 (Luc de Bernis et al)

Four commentaries
- Stillbirths: ending an epidemic of grief
- Supporting women, families, and care providers after stillbirth
- Reductions in stillbirths-more than a triple return on investment
- Stillbirths in sub-Saharan Africa: unspoken grief

Executive summary also in Chinese, Italian, Spanish, French and Portuguese

Lay summary (International Stillbirth Alliance) also in French, German, Spanish, Portuguese, Chinese, Italian, Greek, Hindi & Arabic

Who?
- Over 100 organizations
- 216 authors, investigators, and advisers from 43 countries
- Study group of 8 people
2015... 2.6 million stillbirths (28 weeks’ or more)

10 countries account for two-thirds of stillbirths in 2015 and also the majority of maternal and neonatal deaths

Source: Blencowe et al 2016
Overall rate reduction 2%; variation in progress

Highlighting the fastest progressing country in each region

If the same rate of progress continues, it will be **160 years** before the average pregnant women in sub-Saharan Africa will have the same chance of her baby being born alive as a HIC women has today.

If countries in each region did as well as their best performing neighbour then stillbirth rates could be halved by 2030.

When? Half of stillbirths occur during labour

Richards Horton Lancet’s Series 2016 “The idea of a child being alive at the beginning of labour and dying for entirely preventable reasons during the next few hours should be a health scandal of international proportions. Yet its not”

High coverage and quality of care during labour and birth gives quadruple return: Preventing stillbirths, reducing maternal and neonatal deaths, improving child development

Why? Risk factors for stillbirth show preventability

Population attributable risk for stillbirth, by region, for 12 potentially modifiable risk factors

Most stillbirths result from preventable conditions such as maternal infections (notably syphilis and malaria), non-communicable diseases.
Stillbirth rates, 49 developed region countries, 2000 - 2015

Annual rate reduction: 1.8%
- Fastest: Netherlands = 6.8%
- Slowest: Slovenia = +0.5% increase
- US = 0.4%

Australia
1.4% reduction; 2.7/1000 ranked 15th

UK
1.4% reduction; 2.9/1000 ranked 23rd

6 countries ≤ 2/1000

Potentially avoidable stillbirths 28 weeks + in developed regions

• ~46,200 stillbirths in 2015
• ~20,000 less stillbirths each year if country rates were ≤ 2/1000 in all countries (as for the top 6 best performing countries)

HIC should not be ignored – thousands of preventable deaths every year and care after stillbirth is often inadequate

Perinatal mortality audit can reduce deaths but not well implemented

Audits show 20–30% of stillbirths are linked to substandard care.

Survey data from care providers (N = 1884):
- 37% regular perinatal audit meetings at facility
- 61% case discussion only vs 12% formal audit methodology

Implementation at national level:
- Search of policies showed no major progress since 2011—Norway has now abandoned national audit
- All despite evidence of effectiveness of audit—e.g. New Zealand data from 2007–2013

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### Contributory factors and potentially avoidable perinatal related deaths 2010

<table>
<thead>
<tr>
<th></th>
<th>Termination of pregnancy</th>
<th>Stillbirths</th>
<th>Neonatal deaths</th>
<th>Perinatal related deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contributory factors</strong></td>
<td>n=153</td>
<td>n=341</td>
<td>n=210</td>
<td>n=704</td>
</tr>
<tr>
<td>Present</td>
<td>13 (8.5%)</td>
<td>106 (31.1%)</td>
<td>73 (34.8%)</td>
<td>192 (27.3%)</td>
</tr>
<tr>
<td>Absent</td>
<td>139 (90.8%)</td>
<td>227 (66.6%)</td>
<td>131 (62.4%)</td>
<td>497 (70.6%)</td>
</tr>
<tr>
<td>Missing data</td>
<td>1 (0.7%)</td>
<td>8 (2.3%)</td>
<td>6 (2.9%)</td>
<td>15 (2.1%)</td>
</tr>
<tr>
<td><strong>Potential avoidability</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4 (2.6%)</td>
<td>70 (20.5%)</td>
<td>50 (23.8%)</td>
<td>124 (17.6%)</td>
</tr>
<tr>
<td>Contributory factors present but not potentially avoidable</td>
<td>9 (5.9%)</td>
<td>36 (10.6%)</td>
<td>21 (10.0%)</td>
<td>66 (9.4%)</td>
</tr>
<tr>
<td>Contributory factors present but avoidability unknown</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>2 (0.3%)</td>
</tr>
</tbody>
</table>
Improve data quality on causes

- Poor quality and lack of consistency in classification systems for cause of stillbirths – over 80 systems in use currently
  
  Recent release of WHO ICDPM

- Under investigation, low autopsy rates

Better attention to risk factors

- **Maternal overweight & obesity**
  Population Attributable Risk (PAR) 12%:
  adjusted OR 1.23, 1.63 (Prevalence 40%)
  (8000 stillbirths each year)

- **Maternal age > 35 years**
  PAR 11%,
  adjusted OR 1.65 (Prevalence 22%)
  (4000 stillbirths each year)

- **Smoking**
  PAR 6%;
  adjusted OR 1.36; (Prevalence 17%)
  (3000 stillbirths each year)
Risk factors awareness: Survey of care providers (n=1884)

Generally consistent with evidence, but shows underestimation of risk posed by maternal age >35, multiple pregnancy, IVF
SOCIAL DISADVANTAGE & STILLBIRTH: **DOUBLE THE RISK**

- African Americans (2x)
- Aboriginal and Indigenous Peoples (Canada, Aust, NZ) (2x)
- Migrants (2x)
- Low Income (2x)
- Low Education (2x)
- Early Teenagers (2x)

**Preconception**
- Pregnancy intention
- Lack of access to contraception
- Poverty
- Social status
- Economic status
  - Nutrition
  - Interpregnancy interval

**During Pregnancy**
- Lack of access to care
- Delays in care
- Poorer placental health
  - Poorer quality care
  - Institutional racism
  - Lack of involvement and empowerment in own care
  - Lack of community involvement

**The Major Risk Factors**
- Smoking
- Overweight and obesity
- Fetal growth restriction
  - Pre-existing diabetes
  - Illicit drug use
  - Pre-eclampsia
  - Hypertension
  - Maternal mental health
  - Infection
  - Previous stillbirth
Uptake of interventions
Survey of care providers n=1884

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Never</th>
<th>Some of the time</th>
<th>Most of the time</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking cessation advice for women who smoke</td>
<td>10.6</td>
<td>27.1</td>
<td></td>
<td>60.4</td>
</tr>
<tr>
<td>Serial fundal height measurement</td>
<td>7.3</td>
<td>6.3</td>
<td>12.0</td>
<td>73.1</td>
</tr>
<tr>
<td>Culturally appropriate, accessible antenatal care</td>
<td>5.1</td>
<td>28.6</td>
<td>27.8</td>
<td>36.0</td>
</tr>
<tr>
<td>Early ultrasound assessment of gestational age</td>
<td>14.5</td>
<td>26.3</td>
<td></td>
<td>56.5</td>
</tr>
<tr>
<td>Screening for gestational diabetes before 28 wks</td>
<td>22.1</td>
<td>20.7</td>
<td></td>
<td>55.7</td>
</tr>
<tr>
<td>Umbilical artery Doppler velocimetry if high-risk</td>
<td>4.3</td>
<td>26.4</td>
<td>34.5</td>
<td>33.5</td>
</tr>
<tr>
<td>Low-dose aspirin for high-risk women</td>
<td>10.6</td>
<td>40.8</td>
<td>30.3</td>
<td>13.1</td>
</tr>
<tr>
<td>Preconception care for women with risk factors</td>
<td>14.6</td>
<td>53.2</td>
<td>18.8</td>
<td>8.9</td>
</tr>
</tbody>
</table>
Balancing risks and benefits of early birth

- formally risk assess in early pregnancy
- provide appropriate level of care
- consider “refinement” tools (eg early GTT, uterine Aa Doppler, biometry)
- continually reassess risk across pregnancy
- listen to women
- careful consideration around timing of birth

I Ibiebele, M Coory, FM Boyle, M Humphrey, S Vlack and V Flenady. Stillbirth rates among indigenous and non-indigenous women in Queensland, Australia: is the gap closing? Article first published online: 3 SEP 2014, BJOG DOI: 10.1111/1471-0528.13047
Increase visibility

What the RMNCH community talked about in 2014

THE LANCET
Stillbirths count for families

Over 7000 families a day experience a stillbirth… Each is an individual, painful story

Whether famous or not, in a rich country or poor, the grief for families is overwhelming, and usually hidden, often tinged with guilt, isolation, loss not acknowledged

Heidi and Ned Mules with baby Sophie; stillborn
Understand and acknowledge the impact of stillbirth on the mother, father, family, health services, society, and government.
Perceptions about stillbirth must be challenged

"People in my community generally think that…" (3503 Parents)

- Many stillbirths are preventable: 29%
- Stillbirth is the same as death of a child: 40%
- Stillbirth is "nature's way": 34%
- Stillbirth is usually the mother's fault: 12%
- Parents should forget and have another child: 43%
- Parents should not talk about their stillborn: 45%

Societal attitudes contribute to stigma and fatalism
Ensure quality, respectful care

How often do care providers…?
% always

- Treat parents with kindness and respect: 55
- Take parents’ concerns seriously: 41
- Listen to parents: 40
- Talk in a way parents can understand: 46
- Involve parents in decision-making: 38
- Spend enough time with parents: 30
- Give parents the information they need: 28

“I had to organise my own 6 week check-up … when I arrived the staff didn’t know that my daughter had been stillborn and asked me how the baby was doing”
Conclusions

• Vast global burden of stillbirth is in LMIC. Country target of 12/1000 by 2030

• Stillbirth is a major cause of preventable mortality within HIC, with opportunity to prevent tens of thousands of deaths per year
What to do differently?

Intentional leadership development
Especially in countries with highest burden

Increase the voice of women
Women’s rights, and their voices for accountability, attention to respectful care

Implementation and investment
Address health system bottlenecks, integrate and invest in Quality of Care

Indicators & metrics
2030 Targets
Measurement of progress and impact; perinatal audit

Investigation of critical knowledge gaps
Australian Stillbirth Centre for Research Excellence

1. Best practice for known risk factors
2. Develop identifiers for at risk fetuses
3. Reduce impact of stillbirth
4. Implement national mortality audit
Station 1: Communicating with parents about perinatal autopsy

Station 2: Autopsy and placental examination

Station 3: Investigation of perinatal deaths

Station 4: Examination of babies who die in the perinatal period

Station 5: Audit and classification of perinatal death

Station 6: Psychological and social aspects of perinatal bereavement

Clinical practice in perinatal mortality in ANZ - IMPROVE training IMproving Perinatal Review and Outcomes Via Education
### Australian Perinatal Mortality Audit Tool

**Clinical Audit Tool for Perinatal Mortality**

<table>
<thead>
<tr>
<th>Case number</th>
<th>Baby URN</th>
<th>Baby's date of birth</th>
<th>Baby's date of death</th>
<th>Mother's name</th>
<th>Mother's URN</th>
<th>Maternity Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>22222</td>
<td>Unknown</td>
<td>Unknown</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Case Entry**

<table>
<thead>
<tr>
<th>Baby registration details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mother's details</strong></td>
</tr>
<tr>
<td><strong>Previous pregnancies</strong></td>
</tr>
<tr>
<td><strong>Current pregnancy</strong></td>
</tr>
<tr>
<td><strong>Mother's medical history</strong></td>
</tr>
<tr>
<td><strong>Obstetric conditions</strong></td>
</tr>
<tr>
<td><strong>Antenatal procedures</strong></td>
</tr>
<tr>
<td><strong>Mother's medications</strong></td>
</tr>
<tr>
<td><strong>Labour and birth part one</strong></td>
</tr>
<tr>
<td><strong>Labour and birth part two</strong></td>
</tr>
<tr>
<td><strong>Baby resuscitation at birth</strong></td>
</tr>
<tr>
<td><strong>Neonatal/post neonatal care</strong></td>
</tr>
<tr>
<td><strong>Maternal investigations after stillbirth or neonatal death</strong></td>
</tr>
</tbody>
</table>

#### Baby registration details

1. **Case Number**
   - Case Number: 60

2. **Was this a multiple pregnancy?**
   - Yes
   - No
   - Unknown

6. **Baby URN**
   - 22222

7. **Type of Death**
   - Neonatal death
   - Unknown

**Hospital episode for Neonatal/Post neonatal death**

8. **Was this perinatal death a result of a termination of pregnancy?**
   - Yes
   - No
   - Unknown

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**The Consultative Council on Obstetric and Paediatric Mortality and Morbidity (CCOPMM); VicHealth**

**Queensland Maternal Perinatal Quality Council: Queensland Health**

**Mater Medical Research Institute and Mater Health Services**
My Baby’s Movements Trial
A stepped-wedge, cluster randomised trial of maternal awareness and reporting of decreased fetal movements to reduce stillbirth

260,000 women across 26 hospitals (AUS & NZ) over a period of 3 years
Does routine third trimester ultrasound reduce adverse fetal and neonatal perinatal outcome?

**Intervention group:**
- Screening test @ 37⁰-38⁰w and reveal
- Screen +ve → Offer elective delivery @38-39w
- Screen -ve → Standard obstetric care

**Control group:**
- Screening and conceal
- Standard obstetric care

Randomisation at recruitment (34⁰-36⁶w)
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210 authors and many more collaborators

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