Out-of-Hospital Births in Oregon

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Oregon Public Health Association
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Presentation Outline

• Background
  o Where do births happen in Oregon and who attends these births?
  o Do birth place and attendant matter?

• Public Health Division Report on 2012 Births
  o Pursuant to 2011 Legislation (HB2380)
  o Perinatal case fatality review

• Public health considerations
Where do births in Oregon occur?

- Hospital: 96.2%
- Freestanding Birth Center: 1.3%
- Planned Homebirth: 2.3%
- Other: 0.2%
Percent of Out-of-Hospital Births

<table>
<thead>
<tr>
<th>Year</th>
<th>Oregon</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>2.9</td>
<td>1.0</td>
</tr>
<tr>
<td>2009</td>
<td>2.9</td>
<td>1.1</td>
</tr>
<tr>
<td>2010</td>
<td>3.4</td>
<td>1.2</td>
</tr>
<tr>
<td>2011</td>
<td>3.7</td>
<td>1.3</td>
</tr>
<tr>
<td>2012</td>
<td>3.8</td>
<td>U.S. data not available</td>
</tr>
</tbody>
</table>
Out-of-Hospital Births, Oregon, 2012

- Planned Homebirth: 60%
- Birth Center: 35%
- Other: 5%
## 2012 Oregon Occurrence Births by Attendant Type

<table>
<thead>
<tr>
<th>Planned Attendant Type</th>
<th>Total Births (#)</th>
<th>Total Births (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Total</td>
<td>45,566</td>
<td>100%</td>
</tr>
<tr>
<td>MDs &amp; DOs</td>
<td>36,269</td>
<td>80%</td>
</tr>
<tr>
<td>Certified Nurse Midwives</td>
<td>7,521</td>
<td>17%</td>
</tr>
<tr>
<td>Licensed Direct-Entry Midwives</td>
<td>1,075</td>
<td>2%</td>
</tr>
<tr>
<td>Unlicensed Direct-Entry Midwives</td>
<td>200</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Naturopathic Physicians</td>
<td>221</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Other</td>
<td>280</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>
# Midwives in Oregon

<table>
<thead>
<tr>
<th>CERTIFIED NURSE</th>
<th>DIRECT-ENTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masters Degree</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>High-school diploma</td>
</tr>
<tr>
<td></td>
<td>Certificate of Midwifery</td>
</tr>
<tr>
<td>RN License</td>
<td>Voluntary Licensing</td>
</tr>
<tr>
<td>Hospitals, birthing centers, home</td>
<td>Birthing centers, home</td>
</tr>
<tr>
<td>CNM</td>
<td>Licensed (LDEM)</td>
</tr>
<tr>
<td></td>
<td>Unlicensed (DEM)</td>
</tr>
</tbody>
</table>
Do Birth Place and Birth Attendant matter?

“Bring Birth Home”

"Home delivery is for pizza.”
Literature

• “Midwives who were integrated into the [Canadian] health care system with good access to emergency services, consultation, and transfer of care provided care resulting in favorable outcomes for women planning both home or hospital births.” (Hutton, 2009)

• “Planned home birth for low risk women in North America using certified professional midwives was associated with lower rates of medical intervention but similar intrapartum and neonatal mortality to that of low-risk hospital births in the US.” (Johnson, 2000)

• “Less medical intervention during planned home birth is associated with a tripling of the neonatal mortality rate.” (Wax, 2010)
Why are out of hospital births difficult to study?

- Small numbers
- Difficult to differentiate between planned and unplanned homebirths using vital statistics data
- Difficult to capture OOHB that transfer to hospitals
Two new questions are added to the birth and fetal death certificates effective January 1, 2012.

1) Did mother go into labor planning to deliver at home or at a freestanding birthing center?

2) If yes, the planned primary attendant type at onset of labor was:

In addition, the Public Health Division was required to report on outcomes annually.
2012 Report Objectives

1. Describe maternal characteristics and birth outcomes by planned birth place
   – Who, what, where?

2. Identify neonatal deaths and fetal deaths by planned place of birth
   – Perform special perinatal fatality review among out-of-hospital births
2012 Report Methods, Objective #1

- Data: 2012 Birth Certificates
- Population: Oregon occurrence
- *Term* live births at $\geq 37$ weeks gestation
2012 Report, Objective #1

- 42,011 live term births

- 2,021 (5%) were planned out of hospital births
  - 379 of those 2,021 (19%) ultimately delivered in hospital

- Planned birth attendant type varied by place of birth
Maternal Characteristics by Planned Place of Birth, 2012 Births

<table>
<thead>
<tr>
<th>Maternal Characteristics, 2012 Births</th>
<th>Hospital</th>
<th>Planned OOH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother's Age 30+</td>
<td>43%</td>
<td>57%</td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>68%</td>
<td>87%</td>
</tr>
<tr>
<td>Married</td>
<td>64%</td>
<td>83%</td>
</tr>
<tr>
<td>College Educated</td>
<td>29%</td>
<td>46%</td>
</tr>
<tr>
<td>Self-pay</td>
<td>1%</td>
<td>28%</td>
</tr>
</tbody>
</table>
Maternal Characteristics by Planned Place of Birth, 2012 Births

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<thead>
<tr>
<th>Maternal Characteristics, 2012 Births</th>
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<th>Planned OOH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overweight/Obese</td>
<td>49%</td>
<td>32%</td>
</tr>
<tr>
<td>Tobacco</td>
<td>11%</td>
<td>2%</td>
</tr>
<tr>
<td>Gestational Diabetes</td>
<td>7%</td>
<td>2%</td>
</tr>
<tr>
<td>Gestational Hypertension</td>
<td>6%</td>
<td>1%</td>
</tr>
</tbody>
</table>
Maternal Characteristics by Planned Place of Birth, 2012 Births

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<th>Maternal Characteristics, 2012 Births</th>
<th>Hospital</th>
<th>Planned OOH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group B Streptococcal Test</td>
<td>97%</td>
<td>82%</td>
</tr>
<tr>
<td>First Trimester Prenatal Care</td>
<td>77%</td>
<td>64%</td>
</tr>
<tr>
<td>Adequate Prenatal Care</td>
<td>95%</td>
<td>90%</td>
</tr>
</tbody>
</table>
### Medical Characteristics and Outcomes, 2012 Births

<table>
<thead>
<tr>
<th>Medical Characteristics and Outcomes</th>
<th>Hospital (%)</th>
<th>Planned OOH (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Induction/Augmentation of Labor</td>
<td>47%</td>
<td>12%</td>
</tr>
<tr>
<td>Epidural/Spinal Anesthesia</td>
<td>70%</td>
<td>11%</td>
</tr>
<tr>
<td>Vacuum Assisted Vaginal Birth</td>
<td>3%</td>
<td>1%</td>
</tr>
<tr>
<td>Primary Cesarean</td>
<td>16%</td>
<td>6%</td>
</tr>
</tbody>
</table>
2012 Report Methods, Objective #2

- **Data:** 2012 Birth, Fetal Death, & Death Certificates; medical charts
- **Population:** Oregon occurrence
- **Term** fetal deaths and *term* live births at ≥ 37 weeks gestation up to 6 days after birth
2012 Neonatal Deaths and Fetal Deaths by Planned Place of Birth

• In 2012 there were 92 *term* fetal deaths and *term* early neonatal deaths

  – 84 were planned hospital births (2.1 per 1,000)
    • 58 term fetal deaths
    • 26 term early neonatal deaths

  – 8 were planned OOH births (4.0 per 1,000)
    • 4 term fetal deaths
    • 4 term early neonatal deaths
## 2012 Neonatal Deaths and Fetal Deaths by Planned Place of Birth

<table>
<thead>
<tr>
<th>Cause of Death, 2012 Term Fetal and Early Neonatal Deaths</th>
<th>Hospital</th>
<th>Planned OOH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total rate per 1,000</td>
<td>2.1</td>
<td>4.0</td>
</tr>
<tr>
<td>Circulatory System Diseases (I00-I99)</td>
<td>&lt;0.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Perinatal Conditions (P00-P96)</td>
<td>0.8</td>
<td>1.5</td>
</tr>
<tr>
<td>Congenital Malformations (Q00-Q99)</td>
<td>0.8</td>
<td>0.0</td>
</tr>
<tr>
<td>Symptoms &amp; Signs NOC (R00-R99)</td>
<td>0.9</td>
<td>2.5</td>
</tr>
<tr>
<td>External Causes (V01-Y89)</td>
<td>&lt;0.1</td>
<td>0.0</td>
</tr>
</tbody>
</table>
Perinatal Fatality Case Review

4 term fetal deaths
4 term neonatal deaths
Perinatal Fatality Case Review

- 6 of 8 pregnancies did not meet low-risk criteria
  - More than 41 weeks gestation (4)
  - Twin gestation (2)
  - Morbid obesity (>40 BMI) (1)
Perinatal Fatality Case Review

- 2 pregnancies had inadequate or no prenatal care
- 4 mothers declined prenatal ultrasound
- 5 mothers declined Group B streptococcal (GBS) testing
- 2 mothers declined prophylaxis during labor for GBS positive tests
Perinatal Fatality Case Review

- 6 of 8 transferred to the hospital during labor
  - Indications for transfer from home or birthing center included
    - loss of fetal heart tones (3)
    - prolonged labor (2)
    - decreased fetal movement (2)
    - malpresentation (2)
Perinatal Fatality Case Review

• Causes of death and major contributing factors
  – Hypoxic ischemic encephalopathy or cardiorespiratory failure (3)
  – Chorioamnionitis (3)
  – Pre-existing, or pregnancy-related maternal disease (2)
  – Respiratory failure (1)
  – Undetermined, umbilical cord wrapped around neck, large baby (1)
  – Undetermined, twin gestation, small baby (2)
2012 Report Summary

- Women in Oregon are choosing home birth
  - 5% of births planned out-of-hospital

- Women’s preference determined prenatal screening

- Fatality Review found 6 of 8 pregnancies among women planning out-of-hospital births did not meet low-risk criteria
Public Health Considerations

- Professional midwife education and training
- Public awareness (informed consent or refusal)
- Appropriate risk stratification and referral guidelines
- Communication between in- and out-of-hospital care providers
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Public Health Division References

- Oregon Birth Outcomes, by Planned Birth Place and Attendant, 2012

- CD Summary, Out-of Hospital Births In Oregon -2012, October 1, 2013
Literature References


• Johnson KC, Daviss BA, Outcomes of planned home births with certified professional midwives: large prospective study in North America, BMJ. 2005 Jun 18;330(7505):1416.

“Although the Committee on Obstetric Practice believes that hospitals and birthing centers are the safest setting for birth, it respects the right of a woman to make a medically informed decision about delivery. Women inquiring about planned home birth should be informed of its risks and benefits based on recent evidence.”
“Supports efforts to increase access to out-of-hospital maternity care services and increase the range of quality maternity care choices available to consumers…”