Pregnancy risk factors and birth outcomes within Oregon’s American Indian/Alaska Native population, 2008-2010

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Outline

• **Background**
  - MCH data
  - IDEA-NW Project (linkage)
  - Race coding on birth certificates
  - Oregon’s AI/AN population

• **Methods**

• **Results**

• **Conclusions**

• **Next steps & recommendations**
American Indians/Alaska Natives (AI/AN) at higher risk for many health conditions and indicators, including obesity, diabetes, preterm birth, smoking, domestic violence, injury

Infant mortality rates (IMR) for AI/AN in Pacific Northwest lower than for AI/AN people in rest of U.S.; however, the IMR remains twice that for white infants

Limited MCH data available to tribes and Indian health programs; race-specific data rarely published due to small numbers
Racial misclassification a well-documented problem for AI/AN in surveillance systems

Our Northwest Tribal Registry (NTR) consists largely of the Portland Area Indian Health Service registration file
- All AI/AN registered at an IHS or tribal clinic (RPMS) in Idaho, Oregon, or Washington; documentation of tribal enrollment status required for eligibility
- Demographic data only, no health status or diagnostic info

Comparing this list of known AI/ANs to other health data sources can improve ascertainment of AI/AN records and therefore increase accuracy of health status data

Linkages routinely completed with cancer, death certificates, communicable disease/STI, and other registries to identify and correct racial misclassification
- This is the first linkage between NTR and birth certificates
Race coding on birth certificates

- Race of baby assigned by maternal race
  - Self-reported (always?)
  - Collected by...
  - Multiple race responses allowed
  - Tribal affiliation write-in
  - Father’s race also collected

- Does racial “misclassification” happen on birth certificates?

- From a service standpoint, baby with AI/AN mother or father who uses IHS/tribal clinical services is likely to become an IHS/tribal patient
Oregon AI/AN population

- 9 federally-recognized Tribes
- Census estimate: 81,786
  - Includes 18,209 women ages 15-44
- 8 of 9 tribes have clinics, plus Chemawa IHS clinic
- Limited prenatal & OB services
- Some tribal WIC programs
Methods – linkage & analysis

• Probabilistic linkage on mothers’ identifiers (name, DOB, address, etc.)
  ▪ CDC’s Link Plus software
  ▪ Examined race & tribal affiliation fields in combination with match results
  ▪ De-identified data retained for analysis

• AI/AN births: those with...
  ▪ Any mention of AI/AN race for mother, and/or
  ▪ Any mention of AI/AN race for father, and/or
  ▪ Match of mother to the Tribal Registry

• Comparison population: birth records for Non-Hispanic white mothers (single race)

• Rate calculations: AI/AN mothers or Tribal Registry match (numerator), NCHS bridged-race pop estimates (denominator)
Results – race classification
2008-2010 births

- **Pre-linkage** (mother and/or father race): 6,654 AI/ANs
- **Linkage**
  - 1,837 matches between Tribal Registry and mothers’ identifiers
    - 402 (22%) were coded on birth certificate as non-AI/AN mothers
- **Post-linkage**: 7,035 AI/AN in analysis
  - Including matches: 9.7% increase above mother’s race on birth certificate alone
  - Overall, AI/AN births comprised 4.9% of file, as compared to Non-Hispanic white mothers, single race (66.0%)
Demographics

AI/AN births

• Mean maternal age = 25.8
• 55% unmarried
• 22% less than 12\textsuperscript{th} grade education
• 57% Medicaid/OHP
• 58% WIC use
• 1.1% pre-pregnancy diabetes
Maternal risk factors

- Overweight or obese (BMI > 25)
- Pre-pregnancy diabetes
- Gestational diabetes
- Pre-pregnancy hypertension
- Gestational hypertension

AI/AN and Non-Hispanic white comparison.
Maternal risk factors

Bar chart showing percent of births with different risk factors:
- Any tobacco use: 25.3% AI/AN, 16.2% Non-Hispanic white
- Any alcohol use: 1.2% AI/AN, 0.6% Non-Hispanic white
- Any STDs present/treated: 7.3% AI/AN, 5.0% Non-Hispanic white
Trimester entered prenatal care

- **AI/AN**
  - 1st: 75.3%
  - 2nd: 19.3%
  - 3rd: 3.5%
  - No PNC: 0%

- **Non-Hispanic white**
  - 1st: 82.6%
  - 2nd: 13.4%
  - 3rd: 2.5%
  - No PNC: 10%
Pregnancy care

Kotelchuck PNC index

AI/AN

Non-Hispanic white

<table>
<thead>
<tr>
<th>Category</th>
<th>AI/AN</th>
<th>Non-Hispanic white</th>
</tr>
</thead>
<tbody>
<tr>
<td>No PNC</td>
<td>28.3%</td>
<td>28.3%</td>
</tr>
<tr>
<td>Inadequate</td>
<td>14.5%</td>
<td>9.4%</td>
</tr>
<tr>
<td>Intermediate</td>
<td>11.5%</td>
<td>11.5%</td>
</tr>
<tr>
<td>Adequate</td>
<td>43.2%</td>
<td>48.2%</td>
</tr>
<tr>
<td>Intensive</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Pregnancy care

• Tested for HIV
  - AI/AN: 83.0%
  - NHW: 80.7%
Percent of moms reporting any smoking

Smoking prevalence by trimester

- **AI/AN**
  - 3 mo. prepregnancy: 24.3%
  - 1st trimester: 20.3%
  - 2nd trimester: 17.5%
  - 3rd trimester: 16.7%

- **Non-Hispanic White**
  - 3 mo. prepregnancy: 15.7%
  - 1st trimester: 13.3%
  - 2nd trimester: 11.5%
  - 3rd trimester: 11.1%

Decreases:
- AI/AN: 31.4%
- Non-Hispanic White: 29.8%
## Birth outcomes

<table>
<thead>
<tr>
<th></th>
<th>AI/AN</th>
<th>NHW</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gestational age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early preterm (&lt;34 wks)</td>
<td>2.6%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Preterm (34 to &lt;37 wks)</td>
<td>6.9%</td>
<td>5.8%</td>
</tr>
<tr>
<td>Term (&gt;=37 wks)</td>
<td>90.4%</td>
<td>92.1%</td>
</tr>
<tr>
<td><strong>Method of delivery</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaginal</td>
<td>69.6%</td>
<td>70.9%</td>
</tr>
<tr>
<td>Cesarean</td>
<td>30.4%</td>
<td>29.1%</td>
</tr>
<tr>
<td><strong>Birth weight</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very low (&lt;1500 g)</td>
<td>1.3%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Low (1500 - &lt;2500 g)</td>
<td>5.9%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Normal (2500 - &lt;4500g)</td>
<td>91.2%</td>
<td>92.3%</td>
</tr>
<tr>
<td>High (&gt;4500 g)</td>
<td>1.7%</td>
<td>1.6%</td>
</tr>
</tbody>
</table>
Birth outcomes

• NICU admission
  ▪ AI/AN: 8.5%
  ▪ NHW: 6.9%

• Breastfeeding at discharge
  (>12% unknown/missing data)
  ▪ AI/AN: 77.7%
  ▪ NHW: 77.7%
Highlights/Conclusions

- Birth/fertility rates 2-3 times higher
  - Greatest disparity among 15-17 year olds: fertility rate almost 5x higher than NHW
- AI/ANs have elevated prevalence of pregnancy risk factors
- Birth outcomes (those that we looked at) not vastly different than NHW
- AI/ANs doing somewhat better than NHW on HIV screening and smoking reduction
  - IHS/Tribal initiatives, GPRA
- PRAMS comparison?
Next steps & Recommendations

- Future planned analyses
- MCH strategic plan
- Focus on teen moms
  - Prenatal care
  - Prevention efforts: WeRNative, PRT, etc.
- Consider using dads’ race data for service-based analyses
Limitations

• Our selection of AI/AN cases not standard (including linked records and dads’ race info) - not comparable with other data

• NTR doesn’t cover entire Oregon AI/AN population
  - Urban population represented
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