Prenatal Care of Women Who Give Birth to Children with Fetal Alcohol Spectrum Disorder
Are we missing an opportunity for prevention?

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Manitoba FASD Moms Study

Socioeconomic variables

Mental Health Morbidity

Physical Health Morbidity

Health care & social Service Utilization

Prenatal care

Substance use & Frequency of Alcohol Consumption

Suicide
Prenatal Alcohol Use & FASD

• Canadian Maternity Experiences Survey:
  – 10.5% of women drank during pregnancy according in Canada in 2006/07

• Fetal Alcohol Spectrum Disorder (FASD): Umbrella term used to describe a range of presentations and disabilities associated with prenatal alcohol exposure.

• Prevalence estimated 1 in 100 people:
  – Over 300,000 affected people in Canada
Prenatal Care (PNC)

- One of the most widely used preventative health care services in North America.
- Reduces maternal and infant mortality.
- Screening and treatment of infections and morbidities.
- Identification of warning signs.
PNC & Prenatal Alcohol Use

• Physicians administering PNC are women's first contact with health care system when pregnant:
  – Screening women for alcohol use
  – Advising abstinence of alcohol during pregnancy

• Lack of PNC utilization data in high risk populations.
• No data investigating PNC as an opportunity to prevent FASD.

First steps – what do patterns of care look like for this population?
Study Objective

• To compare prenatal health care utilization among women whose child(ren) have FASD relative to women whose children do not have FASD.
Methodological Approach

• Clinical data from the Manitoba FASD Centre was used to generate a population based sample of all children and adolescents in Manitoba who have been diagnosed with FASD.

• Clinical data was linked to the Manitoba Centre for Health Policy (MCHP) Data Repository to identify these children’s birth mothers and investigate prenatal care utilization.
Data Sources: Manitoba FASD Centre

• Only provincially centralized diagnostic clinic in Canada.
• Clinical data from 1999 onwards.
• Confirmed FASD diagnosis using Canadian guidelines for diagnosis.
• From 2009 to 2011: 784 children diagnosed with FASD.
Data Sources: Manitoba Centre for Healthy Policy Data Repository

- One of the world’s most comprehensive collection of population-based administrative databases.
- Health, social and educational data from 1984 onwards.
- Anonymous health records from Manitoba Health and various data providers throughout the province.
Linked datasets & Study groups

**UNEXPOSED GROUP**
N = 2140
Women from general population
Matched 3:1 on:
Region, SES
Date of birth of child

**Psychiatric & Non-Psychiatric Mortality**

**Vital Statistics**

**Census Data at area level**

**Hospital Abstracts**

**Population-Based Research Registry**

**Physician Claims**

**Prescription Medications**

**Child & Family Services**

**Education & Income Assistance**

**Families First & Healthy Baby Programs**

**Ses & Demographics**

**SES & Demographics & Social Services Utilization**

**Psychiatric & Non-Psychiatric Morbidity**

**Health Care Utilization**

**EXPOSED GROUP**
N = 719
Women who have given birth to children with FASD

**Children clinically diagnosed with FASD**

**Manitoba FASD Centre**

**Manitoba FASD Centre**
Adequacy of Prenatal Care

• The number and timing of prenatal care visits was estimated from hospital discharge abstracts and physician claims (ICD codes).

• **Revised Graduated Index of Prenatal Care Utilization (R-GINDEX)**
  – Based on the American College of Obstetricians and Gynaecologist’s guidelines

• Utilizes 3 variables from hospital and physician records:
  1. gestational age of the newborn;
  2. trimester that prenatal care began;
  3. total number of prenatal visits during the pregnancy.
Six categories of care:
1. No PNC care
2. Inadequate care
3. Intermediate care
4. Adequate care
5. Intensive care
6. Missing
Data Analysis

- Adjusted relative rates (aRRs) of PNC utilization were modeled using generalized linear models (GLM) with a Poisson distribution

- Covariates:
  - age of mother at birth of the child
  - region of residence (rural or urban)
  - SES (area level income quintiles ranked from low to high based on range of mean household income from census information)
  - Income assistance
Descriptive Results

• Women who were born from 1946 to 1992 with ages ranging from 14 to 46.

• Women with children with FASD:
  – Majority were from an urban location
  – Slightly younger (mean age of 24 versus 29)
  – More likely to be lone parents
  – Lower SES
  – Higher gravidity (number of pregnancies) & parity (number of births)
  – Higher proportion of mental & physical disorders
  – More child and family services involvement
  – More justice system involvement
Results: PNC Utilization

- Late initiation of prenatal care: 42.28%
- Low number of prenatal visits: 35.19%
- Inadequate or no prenatal care: 34.49%

Pre-natal health care utilization

Percent of women who have given birth or not to a child with FASD

Women who gave birth to a child with FASD
- Late initiation of prenatal care: 20.87%
- Low number of prenatal visits: 11.53%
- Inadequate or no prenatal care: 16.42%

Women who did not give birth to a child with FASD
- Late initiation of prenatal care: 42.28%
- Low number of prenatal visits: 35.19%
- Inadequate or no prenatal care: 34.49%
Results: Discrepancy in PNC Utilization

<table>
<thead>
<tr>
<th>Category</th>
<th>Relative Rates</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Late Initiation of Prenatal Care</td>
<td>1.64</td>
<td>(1.37-1.96)</td>
</tr>
<tr>
<td>Low Number of Prenatal Visits</td>
<td>3.01</td>
<td>(2.46-3.68)</td>
</tr>
<tr>
<td>Inadequate Prenatal Care</td>
<td>1.65</td>
<td>(1.34-2.04)</td>
</tr>
<tr>
<td>No Care*</td>
<td>2.29</td>
<td>(1.45-3.62)</td>
</tr>
<tr>
<td>Inadequate or No Care****</td>
<td>1.75</td>
<td>(1.44-2.11)</td>
</tr>
</tbody>
</table>
Discussion: Two key findings

1. Discrepancy in the receipt of PNC for women who give birth to children with FASD:
   - 35% of exposed group had inadequate or no PNC.
   - Optimal levels of care have not been reached for this vulnerable population.
Discussion: Two key findings

2. A substantial portion (55%) of women who have given birth to a child with FASD are receiving adequate, intensive or intermediate prenatal care:
   – continue to consume heavy amounts of alcohol throughout their pregnancy.
Is PNC a missed opportunity for the prevention of FASD and drinking during pregnancy?
1 – Evaluation & Investigation
• Evaluation of existing approaches and knowledge of PNC physicians regarding the screening, identifying, and treating of women at risk for alcohol consumption during pregnancy.
• Investigate barriers to accessing PNC for women

2 – Education & Training
• Improve training of physicians providing prenatal care in screening for and management of at risk drinking and alcohol use disorders during pregnancy.
• Brief intervention programs

3 – Community Linkage
• Develop linkages with physicians and community support programs for women with problematic alcohol use.

Implications & Future Work
Research Team & Funding

- Deepa Singal (PI)
- Dr. Marni Brownell (PhD Advisor)
- Dr. Dan Chateau
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