Protecting our Most Vulnerable

Effective Strategies in the Early Identification, Screening, and Child Welfare Interventions for Infants Exposed to Prenatal Substance Use
Screening for Perinatal Substance Abuse: Making a difference for Women & Children

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Children’s Hospital Colorado
Regis University
NIMBY Syndrome

- Not In My Back Yard
- It doesn’t happen in our community, hospital, or home
- Money Magazine:
  - 2007 #1 place to live
  - 2008 #2 place to live
Child protection Services stated that of all children eventually removed from their homes that admitted to substance abuse during their pregnancy, we identified < 1/3 during their hospitalization.

We were given reports that it was a “common” occurrence to have substance abusing new mothers to “brag” they were not identified in the hospital.
Perinatal Substance Abuse Advisory Panel

Purpose:
Identify women at risk for substance abuse and provide a supportive, nonjudgmental approach that increases the health and safety of newborns and their families.
Collective Impact

• 5 Key Goals
• Common Agenda
• Shared Measurement (Data collection)
• Mutually Reinforcing Activities
  – Differential responses
• Continued Communication
  – Quarterly Advisory Panel Meetings
• Backbone support
  – PVHS/UCH and Larimer DHHS
PVHS Substance Abuse Committee 2006

Membership included:

- Nursing Leadership
- Advanced Practice Nurses
- Physicians
- Nursing Staff/ Counseling Staff
- Child Protective Services
- Police Officers
- Community Members – recovering addict
Goals/Accomplishments

- Review of literature/evidenced based healthcare
- Developed a Maternal-Newborn Risk Screener
- Provided education to
  - RN’s, physicians and other health care providers
- Implemented practice guidelines
- Formalized intervention process to provide mothers with counseling and resources
Alcohol Consumption During Pregnancy

- Alcohol Consumption is legal—should we test for?
- Fetal Alcohol Syndrome
- Fetal Alcohol Spectrum Disorders
- No known safe level for alcohol consumption during pregnancy
  - CDC
  - AAP
  - ACOG
  - NANN
Is Fort Collins The NAPA Valley of microbrews?
### Percentage of Past Month Alcohol Use during Pregnancy

<table>
<thead>
<tr>
<th>Education Status</th>
<th>Pregnant</th>
<th>Recent Mothers</th>
<th>Non-pregnant, Not Recent Mothers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than High School</td>
<td>8.9%</td>
<td>28.1%</td>
<td>37.7%</td>
</tr>
<tr>
<td>High School Graduate</td>
<td>8.3%</td>
<td>35.7%</td>
<td>51.8%</td>
</tr>
<tr>
<td>Some College</td>
<td>11.7%</td>
<td>45.6%</td>
<td>60.9%</td>
</tr>
<tr>
<td>College Graduate</td>
<td>15.8%</td>
<td>53.7%</td>
<td>69.7%</td>
</tr>
</tbody>
</table>

(NSDUH, 2008)
# Percentage of Past Month Alcohol Use during Pregnancy

<table>
<thead>
<tr>
<th>Age</th>
<th>Pregnant</th>
<th>Recent Mothers</th>
<th>Non-pregnant, Not Recent Mothers</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 – 17</td>
<td>15.8%</td>
<td>26.8%</td>
<td>25.3%</td>
</tr>
<tr>
<td>18 – 25</td>
<td>9.8%</td>
<td>41.2%</td>
<td>62.2%</td>
</tr>
<tr>
<td>26 – 44</td>
<td>12.5%</td>
<td>42.9%</td>
<td>55.7%</td>
</tr>
<tr>
<td><strong>Race/Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>14.5%</td>
<td>52.1%</td>
<td>61.1%</td>
</tr>
<tr>
<td>Black</td>
<td>15.7%</td>
<td>31.9%</td>
<td>44.6%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>4.1%</td>
<td>22.9%</td>
<td>41.669.7%</td>
</tr>
</tbody>
</table>

(NSDUH, 2008)
### Percentage of Past Month Alcohol Use during Pregnancy

<table>
<thead>
<tr>
<th>Income</th>
<th>Pregnant</th>
<th>Recent Mothers</th>
<th>Non-pregnant, Not Recent Mothers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $20,000</td>
<td>11.7%</td>
<td>30.9%</td>
<td>47.3%</td>
</tr>
<tr>
<td>$20,000 to $49,999</td>
<td>9.2%</td>
<td>38.3%</td>
<td>50.7%</td>
</tr>
<tr>
<td>$50,000 to $74,999</td>
<td>9.5%</td>
<td>47.1%</td>
<td>55.2%</td>
</tr>
<tr>
<td>$75,000 or higher</td>
<td>16.3%</td>
<td>47.1%</td>
<td>55.2%</td>
</tr>
</tbody>
</table>

(NSDUH, 2008)
Marijuana Use During Pregnancy

- NSDUH- 4% drug use- Marijuana most common
- Tri-County-Colorado’s largest health department-serves 26% of state population Women’s Infant and Children Program Clients results

<table>
<thead>
<tr>
<th>Tri-County Clients</th>
<th>Reported Marijuana Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 30 years old</td>
<td>7.4% (Pregnant and non-Pregnant)</td>
</tr>
<tr>
<td>&gt; 30 years old</td>
<td>4% (Pregnant and non-Pregnant)</td>
</tr>
</tbody>
</table>
| All marijuana users (past,ever,current) | 35% Use during pregnancy  
41% Since baby was born  
18% While breastfeeding |
| Reason for use during pregnancy | 39% Recreational  
63% Depression/Anxiety/Stress  
60% Pain  
48% Nausea/Vomiting |
Marijuana Consumption During Pregnancy

- Does Legal = Safe?
- THC & metabolites cross placenta
- THC in cord blood 3-6 times higher than maternal blood
- Greatest transfer early in pregnancy
- Limited research shows THC in breastmilk 8.4 times higher than maternal plasma
Marijuana Consumption During Pregnancy

- Potential negative impact on cognitive development
  - Decreased IQ scores
  - Decreased Cognitive function
  - Decreased attention
  - Negative performance on Stanford-Binet Intelligence Scores at age 3
  - Increased hyperactivity, impulsivity, inattention on Swanson, Noland, Pelham (SNAP) scores at age 10
  - Deficits in visual-motor coordination, processing speed, visual memory and interhemispheric transfer of information in adolescence
Marijuana Consumption During Pregnancy

• *Minimal* evidence:
  – Decreased height
  – Stillbirth
  – SIDS
  – Depression
  – Delinquent behavior
  – Congenital heart lesions
  – Psychosis,
  – Future marijuana use
  – preterm birth & low birth weight
• More longitudinal studies needed
• There is no known safe amount of marijuana during pregnancy
• THC can pass from mother to the unborn child through the placenta
• The unborn child is exposed to THC used by the mother
• Maternal use of marijuana during pregnancy is associated with negative effects on exposed children that may not appear until adolescence
  – The most negatively affected are academic ability, cognitive function and attention, which may not become evident until adolescence when these typically develop
• There are negative effects of marijuana use during pregnancy regardless of when it is used during pregnancy
Marijuana Use While Breastfeeding

- **AAP Statement:** Breastfeeding is contraindicated for women using marijuana
- **ACOG Statement:** Breastfeeding is contraindicated for women using marijuana
- **CDPHE Statement:** THC can also be passed from the mother’s breast milk, potentially affecting the baby.

Identification Strategies
Screening vs. Testing

➢ Universal *Testing* of pregnant women
  ▪ Urine sampling
  ▪ Use of an Interview tool

➢ Universal *Screening* of Pregnant Women
  ▪ Comprehensive review of maternal history
  ▪ Assessment and evaluation of neonate

➢ Universal *Testing* of Neonates
  ▪ Urine or Meconium Testing

➢ Universal *Screening* of Neonates
  ▪ Comprehensive review of maternal history
    assessment and evaluation of neonate
Universal **Testing of Pregnant Women**

- Consent needed
- Financial Implications
- Lack of Reliable test
- Controversial
- **Not** called for by any major organization
  i.e. ACOG, AAP, CDC, AMA etc.

We do **not** perform
Universal Screening of Pregnant Women

Use of an Interview/assessment tool
Rarely occurs in prenatal settings

**Screening:**
- ACOG-Ethics 2008- calls for universal screening
- Screening **DOES** improve accurate identification of substance abusing patients in primary care
- Complicated by limited tools developed and validated for use with pregnant women
  - **Self-report:** Historically inaccurate

Women report that a caring health care provider during their pregnancy was the #1 motivator for change
Universal Screening

- 4P's Plus Screening Tool
- Designed by Ira Chasnoff
- Identifies women in need of in-depth assessment for perinatal substance abuse
- Identifies women at risk for any level of use of alcohol or illicit drugs
- Ideally, utilized early to allow early intervention and reduce risks for pregnancy
Maternal Newborn Risk Screener

- Meets state of Colorado requirements for birth certificate information on tobacco and alcohol use
- Screens for depression and prompts referrals
- Serves as newborn developmental high-risk screener
Risk Factors for Maternal Substance Use during Pregnancy

- Preterm delivery-unknown cause
- Precipitous delivery
- Placental abruption
- IUGR- unknown cause
- History of significant mental illness
- Late, inconsistent or no prenatal care
Risk Factors for Maternal Substance Use during Pregnancy

- Domestic violence
- Family or individual current, or history of, child protective services involvement.
- Homelessness
- Incarceration
- Current involvement with the legal system
Positive result initiates one or more following interventions:

- Referral for hospital based counseling
  - Consistent counselors
- Urine test on the mother
- Urine, meconium, or Cord tissue test on the newborn
- Referral to CPS possible based on above findings
## Maternal Newborn Risk Screener

<table>
<thead>
<tr>
<th>Maternal Variable</th>
<th>Newborn Variable</th>
<th>Risk Factor</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>Birth Weight</td>
<td>Low</td>
<td>0</td>
</tr>
<tr>
<td>Diabetes</td>
<td>Birth Length</td>
<td>Low</td>
<td>0</td>
</tr>
<tr>
<td>Anemia</td>
<td>Apgar Score</td>
<td>Low</td>
<td>0</td>
</tr>
<tr>
<td>Maternal Age</td>
<td>NICU Stay</td>
<td>Low</td>
<td>0</td>
</tr>
<tr>
<td>Preeclampsia</td>
<td>NICU Stay</td>
<td>Low</td>
<td>0</td>
</tr>
<tr>
<td>Previous C-section</td>
<td>NICU Stay</td>
<td>Low</td>
<td>0</td>
</tr>
</tbody>
</table>

### Notes:
- Low risk is 0 points.
- High risk is 3 points.
- Medium risk is 1-2 points.

### Additional Information:
- NICU Stay: NICU stay in the first year of life.
- Apgar Score: Apgar score at 1 and 5 minutes.
- Birth Weight: Birth weight in kilograms.
- Birth Length: Birth length in centimeters.
- Maternal Age: Age of the mother at delivery.
- Preeclampsia: Preeclampsia during pregnancy.
- Previous C-section: History of previous cesarean section.

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*Sample Table Entry for Maternal Variable:
- Maternal Age: 32 years
- Maternal Hypertension: Yes
- Maternal Diabetes: No
- Maternal Anemia: No
- Previous C-section: No

Sample Table Entry for Newborn Variable:
- Birth Weight: 3.2 kg
- Birth Length: 50 cm
- Apgar Score: 9 at 1 minute, 9 at 5 minutes
- NICU Stay: Yes, 10 days

### Score Calculation:
- Maternal Age: 32 years = 0 points
- Maternal Hypertension: Yes = 1 point
- Maternal Diabetes: No = 0 points
- Maternal Anemia: No = 0 points
- Previous C-section: No = 0 points
- Birth Weight: 3.2 kg = 0 points
- Birth Length: 50 cm = 0 points
- Apgar Score: 9 at 1 minute, 9 at 5 minutes = 0 points
- NICU Stay: Yes, 10 days = 3 points

Total Score: 3 points

**Risk Level:** High

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*University of Colorado Health*
Opportunities and Challenges

- Perceptions of healthcare team
- Motivational Interviewing Techniques
- Focus on non-judgmental approach
- Keeping mother/families informed
- Early intervention in the hospital
  - through family conferencing
- Community education
Community Education

– Community Education
– To hospital staff
– Regional health care providers
  • Regarding our policy goals and strategies
  • Regarding prescription drug abuse
    – /added commonly abused prescription drugs to panel
## 2011 PVH Data Results

<table>
<thead>
<tr>
<th>Data</th>
<th>18 month Pre-screening</th>
<th>18 month Post-screening</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total # deliveries</td>
<td>4,093</td>
<td>3,854</td>
</tr>
<tr>
<td>Total # MecStat sent</td>
<td>161</td>
<td>447</td>
</tr>
<tr>
<td>% of deliveries MecStat sent</td>
<td>3.9%</td>
<td>11.5%</td>
</tr>
<tr>
<td>Total positive</td>
<td>37</td>
<td>205</td>
</tr>
<tr>
<td>% positive of all sent</td>
<td>23%</td>
<td>45.8%</td>
</tr>
<tr>
<td>% positive of all deliveries</td>
<td>0.9%</td>
<td>5.3%</td>
</tr>
<tr>
<td><strong>EXCLUDING FAEE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total # positive</td>
<td>34</td>
<td>63</td>
</tr>
<tr>
<td>% positive of all those sent</td>
<td>21%</td>
<td>14%</td>
</tr>
<tr>
<td>% positive of all deliveries</td>
<td>0.8%</td>
<td>1.6%</td>
</tr>
</tbody>
</table>
2008: 0.009 or < 1% of all deliveries
2013: 0.022 or 2.2% of all deliveries
2016 Challenges

New hospital leadership
Staff turn-over (hospital and community workers)
Legalization of THC
Switch from meconium to cord tissue testing
Consistent messaging
Re-energize staff
Re-educate staff
State wide best practices evaluation
Rapid Improvement Event

• Two day event
• Key stake holders
• Review where we’ve been and where we are going
• Goal:
• Develop and ensure that communication, education, and community messaging regarding substance use throughout pregnancy and postpartum is **transparent** and **consistent** for providers, staff, and for patients. These improvement efforts will abide by state and system regulations and be based on current evidence.
Rapid Improvement Event

- Projects were developed out of the RIE
- Community education and partnership
  - Develop a community outreach program that delivers messaging around “legal doesn’t equal safe.”
  - Explore all versions of multimedia options to get the messaging out to the community as a whole
Rapid Improvement Event

• Well Informed Patients

• Develop patient handouts –
  – For provider offices discussing substance use at various times during pregnancy
  – Explaining the hospital screening process and possible additional testing or referrals

• Educate providers on Women and Children’s Service Line view that there is no known safe level of substance use during pregnancy
Rapid Improvement Event

• Improved staff satisfaction and clarity in the screening process; more consistent messaging for patients
• Survey Staff on their perception and understanding of the screening process
• Develop staff resource binder for each unit Neonatal Abstinence Scoring education (Second half 2016)
If you're pregnant or breastfeeding, talk to your provider or call Connections at 970.221.5661 before using alcohol, marijuana or prescription drugs.

Sí está embarazada o dando el pecho, hable con su médico o llame a Connections al 970.221.5661 antes de consumir bebidas alcohólicas o marihuana o tomar medicamentos por receta.
References
