

# Protecting our Most Vulnerable

**Effective Strategies in the Early  
Identification, Screening, and Child  
Welfare Interventions for Infants  
Exposed to Prenatal Substance Use**



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# Screening for Perinatal Substance Abuse: Making a difference for Women & Children

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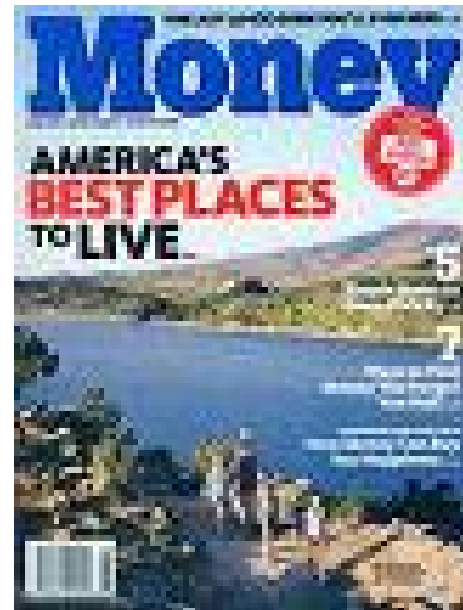
**Children's Hospital Colorado**



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# NIMBY Syndrome

- **N**ot **I**n **M**y **B**ack **Y**ard
- It doesn't happen in our community, hospital, or home
- Money Magazine:
  - 2007 #1 place to live
  - 2008 #2 place to live



# In Our Backyard



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

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

(NSDUH, 2008)



# Percentage of Past Month Alcohol Use during Pregnancy

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

(NSDUH, 2008)



# Percentage of Past Month Alcohol Use during Pregnancy

Income	Pregnant	Recent Mothers	Non-pregnant, Not Recent Mothers
Less than \$20,000	11.7%	30.9%	47.3%
\$20,000 to \$49,999	9.2%	38.3%	50.7%
\$50,000 to \$74,999	9.5%	47.1%	55.2%
\$75,000 or higher	16.3%	47.1%	55.2%

(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

Tri-County Clients	Reported Marijuana Use
< 30 years old	7.4% (Pregnant and non-Pregnant)
> 30 years old	4% (Pregnant and non-Pregnant)
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



# CDPHE Statements

- 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

MATERNAL NEWBORN SCREENER (MNI)		Admitting RN	Transition/ NURSE RN	NICU
PREGNATAL		POPULATION DOA/QUEST RN	HE (OB/ERN) DOA/QUEST	
Preconception history with pertinent symptoms (father or mother)	X			X
Family hx of chromosomal bearing impairment				X
Family hx of congenital problems (heart, club feet, etc.)				X
Medications other than vitamins				X
Any use of opiates during pregnancy including labor medications	X			X
Maternal hx of depression, anxiety, or mood disorder	X			X
Maternal hx of post-partum depression, anxiety, or mood disorder	X			X
Maternal hx of problem with drugs or alcohol	X			X
Partner hx of problem with drugs or alcohol	X			X
Hx of maternal parents' problem with drugs or alcohol	X			X
Tobacco use in 3 months prior to beginning of pregnancy	X			X
Tobacco use in second 3 months of pregnancy	X			X
Tobacco use in third 3 months of pregnancy	X			X
Beer, liquor, or wine use in the 3 months prior to knowing pregnant	X			X
Beer, liquor, or wine use in the first 3 months of pregnancy	X			X
Beer, liquor, or wine use in the second 3 months of pregnancy	X			X
Beer, liquor, or wine use in the third 3 months of pregnancy	X			X
Illegal drug use in the month prior to knowing about pregnancy	X			X
Illegal drug use during pregnancy	X			X
Problem about, without, other medical cause	X			X
USG without other medical cause	X			X
Packer/dilatation	X			X
Hx of domestic violence with present partner	X			X
Any history of Child Protective Services involvement	X			X
Use beginning after first trimester or no prenatal care	X			X
Inappropriate behavior (agitation, euphoria, agitation, observation)	X			X
Apparent medication, narcotic behavior, or unlicensed anger during hx	X			X
Taxit marks, accessions or injection sites	X			X
Umbilical/lochia indicates red, inflamed, ended, purts, excessive dx	X			X
Current or past homelessness, or living in a shelter/truck stop/etc	X			X
Significant mental illness	X			X
High risk physical findings without another medical diagnosis	X			X
Prenatal genetic evaluation/physiologic, diatomic or chorionic biopsy	X			X
Maternal or fetal cardiovascular accident without other medical cause	X			X
Maternal hx of urine drug screen during this pregnancy, even if needed	X			X
<b>NEONATAL</b>				
Maternal hx of a urine drug screen this admission	X			X
SCA or Microcephaly without other medical cause	X			X
Signs of Neonatal Abstinence	X			X
NEC in full-term infant	X			X
Neonatal Sepsis	X			X



# 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



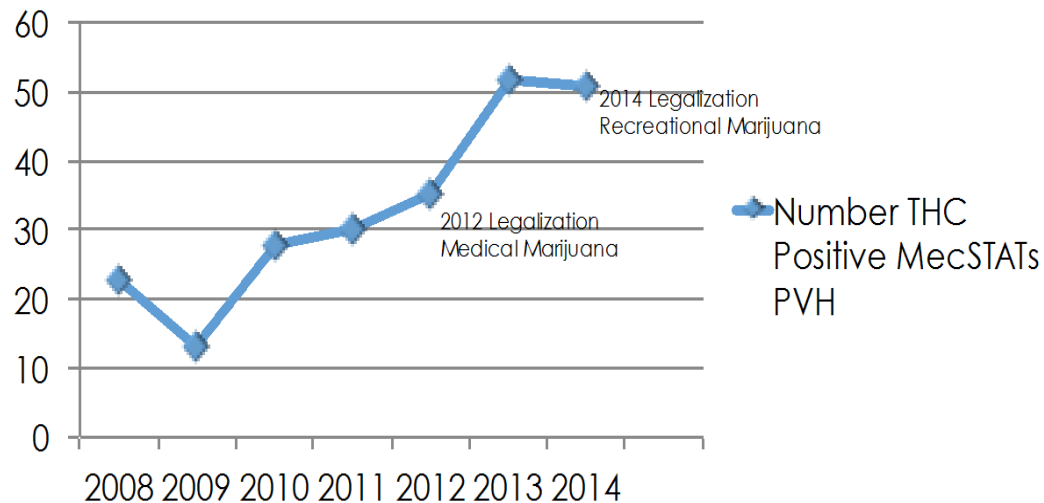
# 2011 PVH Data Results

Data	18 month Pre-screening	18 month Post-screening
Total # deliveries	4,093	3,854
Total # MecStat sent	161	447
% of deliveries MecStat sent	3.9%	11.5%
Total positive	37	205
% positive of all sent	23%	45.8%
% positive of all deliveries	<b>0.9%</b>	<b>5.3%</b>
<b>EXCLUDING FAEF</b>		
Total # positive	34	63
% positive of all those sent	21%	14%
% positive of all deliveries	<b>0.8%</b>	<b>1.6%</b>



# THC Positive MecSTATs 2008-2014

## Number THC Positive MecSTATs PVH



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)





**LEGAL  SAFE**

***Legal no significa seguro***

If you're pregnant or breastfeeding, talk to your provider or call Connections at 970.221.5551 before using alcohol, marijuana or prescription drugs.

*Si está embarazada o dando el pecho hable con su médico o llame a Connections al 970.221.5551 antes de consumir bebidas alcohólicas o marihuana o tomar medicamentos por receta.*



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[uchealth.org/legal-not-safe](http://uchealth.org/legal-not-safe)

# RIE: Perinatal Substance Use May 2 and 3, 2016



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# References

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- Wang, G.S., (2016). Pediatric concerns due to expanded cannabis use: unintended consequences of legalization. *Journal of Medical Toxicology*, doi: 10.1007/13181-016-0552-x

