

Department of Pediatrics
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Drug-exposed Children Utah's Research Efforts

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Objectives

- Understand the methodological challenges of research about drug-exposed children
- Become aware of Utah's current efforts in research about drug-exposed children

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The Challenges

- Early 90's - no organized effort to address issues of maternal substance use
- Substance abuse in Utah? Among pregnant women and mothers?
- Not in my backyard!

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The Prevalence of Substance Abuse Among Pregnant Women in Utah

Karen F. Buchi, MD
Michael W. Varner, MD
Richard Chase, MS

Obstetrics and Gynecology 1993;81:239-42

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PREVALENCE STUDIES

	US mat urine L&D Early 1990's	Utah mat urine L&D 1991
Opiates	0.9 - 6.9%	4.9%
Marijuana	1.2 - 12.1%	2.9%
Cocaine	1.1 - 15.3%	1.1%
Amphetamines	0 - 6.6%	0.6%

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The decade of the 90's

- 1991
 - 0.4% of total admissions for substance abuse treatment in Utah were for methamphetamine
 - 1.2% of the female population claimed methamphetamine as primary substance of abuse
- 2001
 - 18.5% of total admissions for substance abuse treatment in Utah were for methamphetamine
 - 37% of the female population claimed methamphetamine as primary substance of abuse

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Changing Prevalence of Prenatal Substance Abuse in Utah

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Stephanie Zone, MD
Kraig Langheirich
Michael W. Varner, MD

Obstetrics and Gynecology 2003;102:27-30

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PREVALENCE STUDIES


	US mat urine L&D Early '90's	Utah mat urine L&D 1991	Utah mcc 2000
Opiates	0.9 - 6.9%	4.9%	2.7%
Marijuana	1.2 - 12.1%	2.9%	1.4%
Cocaine	1.1 - 15.3%	1.1%	0.2%
Amphetamines	0 - 6.6%	0.6%	0.2%

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Utah's Methamphetamine Initiatives

- COPS Meth task force
- Public awareness campaigns
 - Meth labs
 - Maternal use
- Development of Level 2 protocol for children found in drug exposed settings




DEC and foster care

- Are drug endangered children different than other children admitted to the foster care system?



SAFE Database


- Computerized confidential information management system
- Utilized by DCFS in Utah since 2000
- Contains demographic, medical, dental, mental health, pharmacy, and case worker information
- This database provides a unique opportunity to look at a larger cross-section of children and adolescents in the foster system than found in previously published studies



Medical and Mental Health of Children Entering the Utah Foster Care System


Julie Steele, MN, FNP
Karen F. Buchi, MD

Pediatrics 2006;122:e000

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Methods

- Analysis of a statewide database (SAFE)
- 1/01/2001 to 12/16/2004
- Abstracted mental health information from the initial medical and mental health assessments
- Mental health diagnoses based on the DSM IV diagnoses from the 30 day mental health evaluation
- Information on 6177 children was analyzed

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Results

Race/Ethnicity	White	83%
	Hispanic	24%
	American Indian	6%
	African American	5%
	Asian	0.7%
Gender	Male	49%
	Female	51%
Age	0 to <6 years	40%
	6-12 years	28%
	13-18 years	31%

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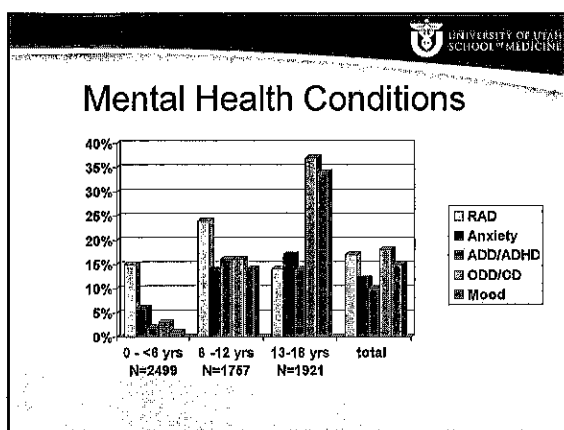
SAFE Data Base 2001-2004

- 38% removed due to neglect
- 21% dependency
- 13% delinquent behavior
- 11% physical abuse
- 4% sexual abuse
- 13% other
- Drug endangerment reported in 45% of the cases

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Results

Condition	Total (N=6177)
One or more MH Conditions	2747 (44%)
2 or more MH Conditions	1612 (26%)
Reactive Attachment/Adjustment Disorder (RAD)	1051 (17%)
Anxiety Disorders	713 (12%)
Attention Deficit Disorders (ADD/ADHD)	604 (10%)
Oppositional Defiant/Conduct Disorder (ODD/CD)	1088 (18%)
Mood Disorders	937 (15%)



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Summary of Findings

- Large statewide database that uniquely used DSM IV diagnoses
- 44% had one or more mental health conditions
- Multiple mental health diagnoses present in one-fourth of the total population
- Increasing prevalence of mental health disorders, co-morbid conditions, and pharmacotherapy with age
- Pharmacotherapy was utilized in 15% of the cohort and one-third of those with a mental health diagnosis were on medication for a mental health condition

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Health and Developmental Outcomes of Methamphetamine- exposed Children in Utah: A Descriptive Study

Julie Steele, FNP
Karen F. Buchi, MD

Funded by COPS Meth Grant
Salt Lake City Corporation

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Background

- Children in foster care are at risk for medical and mental health conditions
- In Utah
 - 54% had one or more acute or chronic medical condition
 - 44% had one or more mental health condition
- Many assume that drug-endangered children, specifically methamphetamine-exposed children, are more at risk

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Objectives

- Determine the prevalence of medical and mental health problems among drug-endangered children, specifically those known to be exposed to methamphetamine
- Describe the developmental and behavioral outcomes of a subset of these children
- Compare these findings to the prevalence of these conditions among children in the foster system who are not identified as being drug-endangered.

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Methodology

- **SAFE database**
 - Computerized confidential information management system
 - Utilized by DCFS in Utah since 2000
 - Contains demographic, medical, dental, mental health, pharmacy, and case worker information
 - This database provides a unique opportunity to look at a larger cross-section of children and adolescents in the foster system than found in previously published studies

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Methodology

- De-identified information is provided by the Division of Substance Abuse and Mental Health
- Detailed data analysis to determine associations between drug exposure and health status

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Methodology

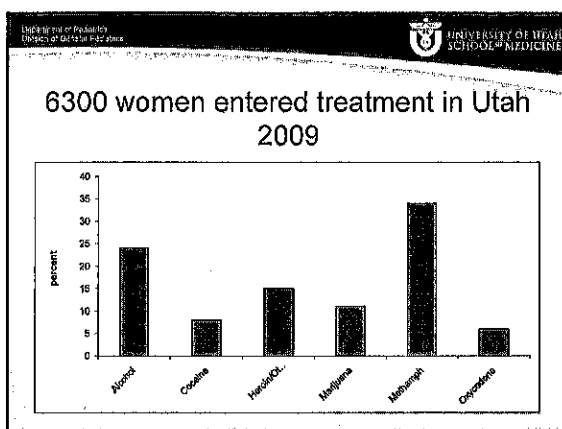
- Analysis of a subset of children who received developmental screening
 - Ages and Stages
 - Administered by nurses or foster parents
 - Ages 4 months to 5 years
 - Fostering Healthy Children program keeps this information in a separate database

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Status Report

- IRB approval
 - University of Utah
 - Division of Substance Abuse and Mental Health
- Data query to be run by the Division



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Utah Prenatal Substance Abuse Prevalence Study

Karen F. Buchi, MD
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Carla Suarez

Funded by a grant from
Utah Substance Abuse and Anti-Violence Coordinating Council
Commission on Criminal and Juvenile Justice

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Objectives

- Determine the prevalence and patterns of prenatal substance use among women delivering infants in Utah hospitals.
- Identify maternal and infant risk factors associated with maternal substance use in urban Utah.
- Compare these findings to prevalence studies done previously to identify trends in the maternal population in Utah.

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Methodology

- Enroll hospitals throughout Utah
 - Rural and urban
- Perform anonymous collection
 - Segments of umbilical cord from consecutive deliveries
 - Non-identifiable demographic information
- Analyze cord samples for substances of abuse
- Perform statistical analysis

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Hospitals

• Sevier Valley Medical Center	Richfield
• Castle View Hospital	Price
• Uintah Basin Medical Center	Roosevelt
• Logan Regional Hospital	Logan
• Intermountain Medical Center	Murray
• LDS Hospital	Salt Lake City
• St. Mark's Hospital	Salt Lake City
• University Hospital	Salt Lake City
• Dixie Regional Medical Center	St. George
• American Fork Hospital	American Fork
• Utah Valley Regional Medical Center	Provo
• Ogden Regional Medical Center	Ogden
• McKay-Dee Medical Center	Ogden

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Umbilical cord analysis

- Easier to obtain than meconium
- Is currently used clinically in some hospitals
- Reflects drug exposure after 18 weeks of gestation

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Demographic Data

- Maternal information
 - Age
 - Parity
 - Marital status
 - Race/ethnicity
 - Insurance status
 - # prenatal visits
 - Reported history of prenatal substance use
- Newborn information
 - Birth weight
 - Gestational age

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Drugs

- Amphetamines
- Cannabinoids
- Cocaine
- Opiates (metabolize to morphine and/or codeine)
- Phencyclidine
- Methadone
- Barbiturates
- Benzodiazepines
- Propoxyphene (Darvon)
- Meperidine (Demerol)
- Tramadol (Ultram)
- Oxycodone
- Alcohol biomarkers

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Status report

- IRB approval obtained for 13 hospitals
- Still awaiting IRB approval in 2 hospitals
- Umbilical cord collection complete in eligible hospitals
- Once data analyzed, report back to all participating hospitals

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Management of Neonatal Abstinence Syndrome

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Karen Buchi, MD
Shrona Patel, MD
Kent Korgenski
Xiaoming Sheng
Michael Goodman

Funded by an NIH grant

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Background

- Opiate use during pregnancy is common
- Neonatal abstinence syndrome (NAS) is common
 - Requires pharmacologic intervention
 - Requires prolonged hospital stays
- No evidence-based guidelines exist for treatment of NAS

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Objectives

- Describe the demographic characteristics of the drug-exposed newborn.
- Describe the physical health of the drug-exposed newborn.
- Describe the hospital management and disposition of the drug-exposed newborn, specifically focusing on variability of care.
- Compare our experience with the published literature.

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Methodology

- Retrospective chart review
 - Identify newborns with NAS
 - University Hospital
 - Case Western University
 - Review charts to document all aspects of care
 - Analyze data
 - Degree of consistency or variability of care
 - Determine aspects of care that need more research

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Methodology

- Intermountain Healthcare data
 - Identify cases with NAS throughout the system
 - Determine prevalence
 - Determine economic impact

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Status Report

- Chart review
 - Complete
 - Currently being analyzed
- Database review

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Summary

- Maternal substance use is alive and well in Utah
- Our systems need flexibility to respond to developing trends regarding maternal substance abuse
- Continued need for research to
 - Document our experiences
 - Answer the questions we generate

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Questions?
