The Silent and Unknown Epidemic of FASD
Introduction

- Jody Allen Crowe – served as teacher, principal, superintendent.
- 18 years experience on reservations around Minnesota and western states.
- Director of TEAM Academy Charter School, Waseca, MN
If I were to tell you my father died of lung cancer, what is the first question that comes to mind?

Did he smoke?

If I were to ask you why so many kids are on Ritalin, in Special Ed or Title I, what is the first question that comes to mind?

I submit the first question should be; Was the child fetally exposed to alcohol?
What Can a Mother Put Into Her Body That is Considered a Teratogen?

- Lead
- Thalidomide
- Alcohol

By far, these are the three most damaging teratogens.
Lead found in Toys From China

Toy Stores Recall Millions of Lead Painted Toys

Billions of Dollars Lost from Lead in Toys
Alcohol is a Teratogen

“Of all the substances of abuse (including cocaine, heroin, and marijuana), alcohol produces by far the most serious neurobehavioral effects in the fetus.”

—IOM Report to Congress, 1996
NORMAL  FAS
Fetal Alcohol Spectrum Disorder

Young girl with classic Fetal Alcohol Syndrome features.

Kellerman
How Many of These Kids are FASD?

Every one of these children suffer from the lifelong brain damage brought on by their mother’s drinking.
FAS is only the tip of the Iceberg!

Fetal alcohol syndrome (FAS)
Physical Evidence

Fetal alcohol effects (FAE)
Clinical suspect but appear normal
but never reach their potential
Adapted from Streissguth

Now known as Fetal Alcohol Spectrum Disorder (FASD)

We don’t know the extent because we don’t ask the question! (Crowe)
What size is the fetus when the blood circulates from the mother?
Visualization of the brain of a normal individual (A) and two with FAS (B, C) shows permanent loss of the white brain matter of the corpus callosum.

Images courtesy of Dr. S. Mattson
These two images are of the brain of a 9-year-old girl with FAS. She has agenesis of the corpus callosum, and the large dark area in the back of her brain above the cerebellum is essentially empty space.

Animal Research

Researchers use animals to replicate alcohol exposure.
Comparing Physical Deformities in Humans and Animal Research
Comparing Facial Deformities
Alcohol Added to Unhatched Eggs

Sulik et al
Fetal Alcohol Effected Chick Detour Learning Task
Fetal Alcohol Effected Chick Detour Learning Task
Impulse Study using Rats

Shocking device
Impulse Study using Rats

Shocking device
Fetal Alcohol Affected Mother Mice
Fetal Alcohol Effected Mother Mice
Fetal Alcohol Effected Mother Mice
The fastest FAE mother mouse took 18 times longer than a normal mouse. Some FAE mothers left all their babies out of the nest and sat amongst them confused and disoriented.
The Link of Prenatal Alcohol Exposure to Child Depressive Symptoms

Mary J. O’Connor, PhD and Blair Paley, PhD
University of California at Los Angeles, and Charles R. Drew University of Medicine and Science
Should Have Been a Headline!

Attention Deficit & Distractibility Increase when Mothers Consumed Alcohol During Pregnancy

- 475 young school age children whose mothers drank moderate amounts of alcohol during pregnancy
- Attention, distraction and impulsive behavior problems were found to occur more often.
- Average reaction times were about twice as slow for the more than 3 drink exposure children.

Dr. Ann P. Streissguth, Helen M. Barr, Paul D. Sampson
Department of Psychiatry and Behavioral Sciences
Department of Statistics, Department of Biostatistics, Alcoholism & Drug Institute
Child Development/Mental Retardation, Center of the University of Washington, Seattle
Neurobehavioral Toxicology and Teratology, 8:717-725, 1986
Startling Longitudinal Study

Dr. Ann P. Streissguth, Department of Psychiatry and Behavioral Sciences, University of Washington

-Neurological and school problems detected among 500 children day 1 and 2, 8 and 18 months, 4, 7 and 14 years.

-Mothers were primarily white, middle class, well educated, married women at low risk for adverse pregnancy outcomes.

-Approximately 80% of pregnant mothers were drinking.
Reading Test Scores Lower in Children Whose Mothers Drank Alcohol During Last Trimester of Pregnancy

- Primarily low income and black
- Average alcohol intake for both alcohol drinking groups was 2-3 drinks per day with approximately 21% of the women engaging in "binge" drinking
- Main results of the survey showed children’s head circumference was much lower in the drinking groups-over 2 cm difference between the "never drank" and "continued to drink" groups).
- Scores for math and reading/decoding were also significantly lower for the alcohol exposed groups.
- Sequential processing skills was much lower
- Short term memory processing was much lower.
- Short term memory processing was much lower.

Dr. Claire D. Coles, Human And Behavior Genetics Laboratory, Department Of Psychiatry, Emory University School of Medicine Georgia Mental Health Institute, Atlanta, Georgia

Lower verbal comprehension and spoken language scores were found among 84 children at 13 months of age whose mothers drank an average of .24 ounces of absolute alcohol per day.

Drs. Joanne L. Gusella and P.A. Fried
Department of Psychology, Carleton University, Ottawa, Canada
Neurobehavioral Toxicology and Teratology, Vol. 6:13-17, 1984

.24 ounces of absolute alcohol is about ½ drink per day.
Attention Deficit Disorder (A.D.D.) Link
Brain Neurotransmitter
Dopamine Lower After Alcohol Exposure
(In animal study)
*Neurobehavioral Toxicology & Teratology, 6:19-21, 1984*

- Found in lower levels in children with ADHD.
- A single dose of alcohol given on the 4th day of pregnancy to 10 rats "dramatically reduced" the levels of "striatal dopaminergic receptors" in their offspring.
- About half the concentration of the dopamine metabolite DOPAC in their brain tissue.
- The 4th day in a rat’s pregnancy would coincide with the first month of a human pregnancy.

Dr. Laura Lucchi, Vito Covelli
Department of Pharmacology & Pharmacology, University of Milan, Italy
*Neurobehavioral Toxicology and Teratology 6:19-21 (1984)*
Hyperactivity - A.D.D. and Behavior Disorders Linked With Alcohol Exposure


- 15 children from the Yale Learning Disorders Unit whose mothers were known to have a history of heavy drinking during pregnancy. - 11 boys and 4 girls ranged in age from 6 to 18 years of age. - Physical measurements showed that 60% of the children had a head circumference less than the 10th percentile - 20% of the children were below the third percentile.

The physicians at the Yale Learning Disorders Unit stated, "Our own clinical experience in a learning disorders unit, as well as other reports, both human and animal, suggest that perhaps more subtle manifestations of CNS dysfunction in the form of behavioral and learning difficulties might be significant but frequently overlooked problems in children exposed to ethanol (alcohol) in utero."
Why Weren’t These Headlines?

- One Drink a Day Affects Babies Decades Later [ABCNEWS.COM]

- FASD Prevalence in Foster Care
Early Pregnancy Warnings
One or Two Drinks Daily May Harm Baby
Aug. 15, 2001 - Women in early pregnancy, and even those who are considering becoming pregnant, should cut out cocktails, wine and beer completely, according to the results of a preliminary study on animals.

Alcohol Use Increases Baby's ADHD Risk
Mom's Vices May Up Baby's Attention Disorder Risk
Dr. Eric Mick of Harvard Medical School in Boston, Massachusetts, and colleagues report in the April issue of the Journal of the American Academy of Child and Adolescent Psychiatry.
Abnormalities in brain white-matter volume, especially in the temporal and parietal lobes

- **Water-diffusion technology identifies brain regions damaged by prenatal alcohol exposure**

- Scientists know that children with Fetal Alcohol Spectrum Disorder (FASD) often have structural brain damage. A new study has used diffusion tensor imaging (DTI) to identify several specific white matter regions as well as deep gray matter areas of the brain that appear sensitive to prenatal alcohol exposure.

- Carmen Rasmussen, assistant professor in the department of pediatrics at the University of Alberta. Results published in the October 2008 issue of *Alcoholism: Clinical & Experimental Research*
Prenatal Exposure Predisposes Adolescent Brain to Alcohol

- State University of N.Y. Upstate Medical University, by Steven and Lisa Youngentob, The Effect of Gestational Ethanol Exposure on Voluntary Ethanol Intake in Early Postnatal and Adult Rats. Published in Behavioral Neuroscience, 2007, Vol. 121, No. 6, pages 1306-1315.
FAS and Autism

Nanson JL, Alyin Buckwold Centre, Royal University Hospital, Saskatoon, SK, Canada.

Abstract:
This paper reports on six children who all fulfill the criteria for fetal alcohol syndrome and have a history of maternal alcohol abuse during pregnancy, and who also fulfill the criteria for diagnosis of autism. Comments in: Alcohol Clin Exp Res 1993 Aug;17(4):926-8

PMID: 1626656, UI: 92328155
“Blind Spots” in the Brain cause behaviors that lead to the Secondary Disabilities of FASD
Seeing Eye Brain

Much like a blind person needs a Seeing-Eye Dog, the FASD person, with blind spots in their brain, needs a Seeing-Eye Brain.
Secondary Disabilities of Persons With an FASD

- Mental health issues
- Disrupted school experience
- Trouble with the law
- Inappropriate sexual behavior
- Confinement in jail or treatment facilities
- Alcohol and drug problems
- Dependent living - Emancipated from adult care 35 y.o.
- Employment problems
What a Child Needs to Limit Secondary Disabilities in School

Diagnosis of FASD or adults around the child who understand brain damage behavior

Early intervention

Structured environment with little transition

Non-shaming, non-blaming language from adults

Recognized disabilities

Limited sensory inputs

Stable school environment with no bullying from students

Limited sequence of commands

Computer assisted instruction

Kinetic instruction

Permission to move and wiggle

Quiet non-stimulating place to focus on work
Not in My Town!

This is your town!

Exercise in statistics- Everyone stand up
So, Who is Drinking?

- Among non-pregnant women who reported any alcohol use rates remained stable: 53.2% in 1995, 52.8% in 1997, and 53.3% in 1999. Binge drinking rates among this population were 11.2% in 1995, 10.8% in 1997, and 12.3% in 1999.

- In comparison with other pregnant women, pregnant women who reported any alcohol use, binge drinking, and frequent drinking were more likely to be under 30 years, employed, and unmarried.

- Women reporting any alcohol use during their childbearing years were more likely to be white and to have higher education levels.

JS Sidhu, MD, RL Floyd, DSN, Div of Birth Defects and Developmental Disabilities, National Center on Birth Defects and Developmental Disabilities, CDC.
ATLANTA (Ivanhoe Newswire) -- Nearly half of all pregnancies in the United States are unintended. A new study shows binge drinking is associated with the risk of a woman getting pregnant when it's not desired.

Binge drinking is defined as consuming five or more alcoholic beverages on one occasion. The study included more than 72,900 women who gave birth from 1996 to 1999.

Researchers say 45 percent of the women reported an unintended pregnancy. (Higher in MN) The study found women who were binge drinkers before pregnancy were more likely to be white, unmarried, smoke and be exposed to violence. They were also more likely to drink alcohol and smoke during pregnancy.

SOURCE: Pediatrics, 2003;111:1136-1141

Self-Reporting, Is It Accurate?

- A study by University of Boston
  - 73% of pregnant mothers who reported to not be drinking were not telling the truth.

- Study in American Journal of Obstetrics and Gynecology April 2008
  - 103 pregnant women
  - 26 positive markers for consumption of alcohol
  - three self-reported drinking.
  - seven showed heavy alcohol use, only one self-reported drinking and only at a light level.
Adopted Children

- High percentage FASD

- Many chose to adopt from mid-European countries and Russia to avoid Crack Babies and Cocaine Babies.

- Who is giving up their babies?
What Can Individual Educators Do?

Always think brain damage first.

- Whenever confronted by behaviors that are characteristics of FASD, ask yourself if this is a result of brain damage.
- We think they think the way we think they should think!

Stop the shaming and blaming language.

Computerized instruction

Advocate for the FASD victim to minimize secondary disabilities.
What can you do?

 Support the parents!!!!!! Read the blogs by mothers of FASD children to understand.

 Remember, adoptive parents many times do not know they have an FASD child

 Many times educators will not believe the parents when they tell the educator about the child’s disabilities.

 Many times, the student exerts so much energy at school trying to meet expectations, he/she will melt down at home.
Never Give Up

- The Invisible Children and Families of FASD, Part 2, states her daughter had to have a skill presented 625 times before her daughter was successful with that skill.

SENIOR CLASS CITIZENSHIP AWARDS went to Jody Crowe, left, Ron Oleheiser and Judy Whitney. Jody also received a Blandin Achievement award, and Judy was presented the VFW Auxiliary award. Don Jacobson makes the presentation of citizenship awards.
The FATAL LINK

THE CONNECTION BETWEEN SCHOOL SHOOTERS AND THE BRAIN DAMAGE FROM PRENATAL EXPOSURE TO ALCOHOL

POLICE LINE DO NOT CROSS

Jody Allen Crowe
The Fatal Link

1966 - Grand Rapids, MN - Heavy PEA
1969 - Tomah, WI – Heavy PEA
1993 – Wauwatosa, WI Fits profile – no info
2003 – Cold Spring, MN – Fits profile, mother denies drinking when pregnant
2005 – Red Lake, MN Heavy PEA
2006 – Cazenovia, WI Heavy PEA
Jonesboro, AK born in MN – mother binge drinker at or near to the time of pregnancy

Concave chest

- 88% of School Shooters fit the profile of Prenatal Exposure to Alcohol
Accused Central High School shooter to be tried as adult

Posted: April 8, 2009 01:14 PM CDT

Jamar Siler in August 2008

By ANN KEIL
6 News Reporter

KNOXVILLE (WATE) -- The case against Jamar Siler, the teen accused shooting of a Central High School student in August 2008, will be transferred to adult court..............

It was clear to the court Siler suffers from a conduct disorder created by a well-documented abusive past. His attorney believes Siler might also be suffering from fetal alcohol syndrome. "As you heard the judge say, there are major failures on the part of DCS in Florida, DCS here in Tennessee. This is a classic case of someone who has fallen completely through the cracks all his life. He never had a chance since he was a child."
Mystery Man
Red Flags

- Father died when mother was 7 months pregnant
- Mother was Lutheran
- Mother had divorced first husband
- No definitive indication that mother drank during pregnancy
- Testimony in third divorce of mother throwing bottles at third husband
- Mystery man had problems through adolescence and adulthood
- Mystery man assaulted his mother and brother with a knife
- Mystery man had police record and psychologist report indicating characteristics common to FASD
- Mystery man had unrealistic fantasies of importance
Behavioral Characteristics of the Mystery Man

- Quality about him that led him to act with an apparent disregard for possible consequences.
- "I don’t like school. It’s too hard to do, I am not able to do the work."
- The boy told the P.O. that he had too much difficulty making friends and hence he likes to be to himself.
- The P.O. observed that the boy is somewhat shallow and seems to be immature to have little capacity for comprehension.
- “had to be diagnosed as "personality pattern disturbance with schizoid features and passive aggressive tendencies." has to be seen as an emotionally, quite disturbed youngster ……..“
- Salvation Army indicates that the boy, as pointed out in the psychiatric report, is severely disturbed and would need direct psychiatric treatment in a Child Guidance Institution.
MYSTERY MAN

Mystery man about 4 yrs. old

Brother of Mystery Man

Brother of Mystery Man
Mystery Man
Mystery Man

Three pictures of Mystery man as teenager and as young marine
Compare

A philtrum guide developed by Washington State FAS Diagnostic and Prevention Network
Nobody Asked the Question!

Lee Harvey Oswald