



The Leader in Newborn Toxicology

United States Drug Testing Laboratories, Inc.

Up Coming Events:

January 21-23	NEO Prep	New Orleans, LA
January 24-26	Gravens	Orlando, FL
February 16-17	Idaho Perinatal Project	Nampa, Idaho
February 22-26	NEO	Orlando, FL
March 8-10	OB Challenges	Phoenix, AZ
March 15-16	Counselling Advances	Las Vegas, NV
March 21-24	NCNN	Orlando, FL
March 30-April 1	Perinatal Practices	Scottsdale, AZ

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In Recent News: Epidemic of Newborns Addicted to Prescription Painkillers

by Nancy J Parra

Last November the problem of babies born dependent on prescription drugs was the talk of the media, but nothing new to neonatal nurses and USDTL.

It all started November 1, 2011 when the CDC came out with a press release stating, “Prescription painkiller overdoses have reached epidemic levels and kill more Americans than heroin and cocaine combined. (See the chart on the lower right.) The death toll from overdoses of prescription painkillers has more than tripled in the past decade, according to an analysis in the CDC Vital Signs report released from the Centers for Disease Control and Prevention. In 2010, 1 in every twenty people in the US age 12 and older –a total of 12 million people–reported using prescription painkillers non medically according to the National Survey on Drug Use and Health.”¹

USA Today followed this news with an article about the increase in babies being born addicted to pain killers. Inferring that it, too, was of epidemic proportion. While debatable, the inciteful use of the terms “epidemic” and “addicted” got everyone talking about an important issue.

Neonatal Abstinence Syndrome (NAS), a group of symptoms that occur in a newborn who was exposed to addictive illegal or prescription drugs while in the mother’s womb, is not a new problem, but it does appear to be a growing problem that effects everyone.

National statistics on the number of babies who go through withdrawal are not available, and states with the worst problems have only begun to collect data. Scattered reports show the number of addicted newborns has doubled, tripled or more over the past decade.²



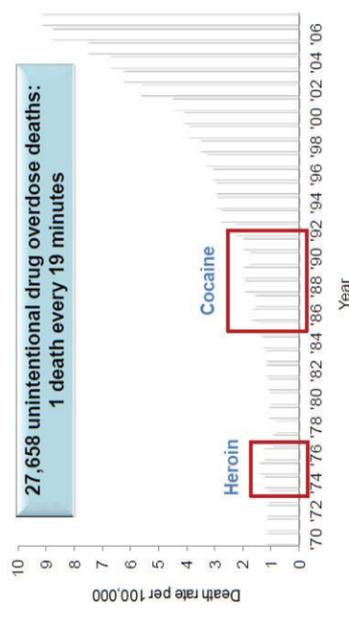
Substance use at any time during pregnancy has both medical and developmental consequences for the newborn, in addition to the legal, health, and economic consequences for the mother, and-when the mother can’t pay-for society.

The combination of an increased misuse of prescription drugs and the reported increase in continued drug use during pregnancy³ means an increase in newborns with NAS. The babies experience withdrawal symptoms that can mean up to six weeks in the NICU and perhaps continued developmental problems their entire life.

Early testing can mean early help for innocent newborns. USDTL offers umbilical cord testing, blood and meconium testing for substances of abuse and can provide objective answers for early intervention. Epidemic or not, babies born dependent on addictive drugs can be identified through objective testing and treated before NAS symptoms grow too difficult.

1. http://www.cdc.gov/media/releases/2011/p1101_flu_pain_killer_overdose.html
2. <http://yourlife.usatoday.com/parenting-family/babies/story/2011-11-13/Doctors-see-surge-in-newborns-hooked-on-mothers-pain-pills/51186076/1>
3. Substance Abuse and Mental Health Services Administration Office of Applied Studies. 2003 National Survey on Drug Use & Health: Results. US Department of Health and Human Services. Available at <http://www.drugabusestatistics.samhsa.gov/NHSDA/2k3NSDUH/2k3results.htm>. Accessed December, 2007.

Unintentional Drug Overdose Deaths United States, 1970–2007



Hair Testing can Identify Children Living in High Risk Environments- The ChildGuardSM Story

By Joseph Jones

A child protection advocate approached USDTL back in 1995 for assistance with a recurring problem in their department. The county wanted to use drug testing to identify substance-abusing parents and use that information to assist with child custody decisions. CPS found that substance-abusing parents were very clever in regard to avoiding detection. Avoidance, dilution, and substitution stymied timely and accurate urine screens. Cosmetic treatments and shaved heads/bodies interfered with hair testing the parents.

Smith and Kidwell reported in *Forensic Science International* that the children of cocaine users had detectable amounts of cocaine in their hair at levels that were similar to their drug abusing parents.¹ Douglas Lewis, USDTL's President, offered a solution that made lemonade out of a lemon.

The biggest challenge for hair testing, then as well as today, is discerning between environmental exposure and



ingestion. Doug suggested that instead of chasing down the parents; simply test the kid's hair to intentionally determine if they are being exposed to illicit drugs in their environment and therefore bypassing the clever and crafty substance-abusing parents. In 1996, ChildGuardSM was born.

Our ChildGuardSM assay was specifically designed to be most sensitive to chronic environmental exposure to illicit drugs in the donor's environment. Larger profiles are available but the 5-panel, which tests for the five most prevalent street drugs, is by far the most useful test.



USDTL has identified well over five thousand children living in high-risk environments.

The procedure calls for identifying the root end of the specimen and cutting it at 1.5 inches, assuming that the hair is longer than 1.5 inches. This 1.5-inch section represents approximately 3 months of hair growth. The specimen is powdered and analyzed by immunoassay. Presumptive positives are confirmed using LC-MS/MS.

A positive result for the native drug itself is evidence that the donor has been exposed to that drug during the previous 3 months prior to the collection. Although reported and interesting to look at, the actual concentration is not important. There are many variables that influence the outcome of the final reported concentration. The proper interpretation of a ChildGuardSM result is a simple positive/negative.

An unfortunate issue with marijuana exists because of the lack of commercially available immunoassay kits that are sensitive to native-THC, our target compound for marijuana exposure.

Currently, the immunoassay kits that are commercially available are only sensitive to the liver produced metabolite carboxy-THC, which is counterproductive to our objective. As an alternative, albeit expensive, when marijuana detection is critical, you may order ChildGuard+Native THCSM.

This profile bypasses the immunoassay for marijuana and orders an expensive GCMS analysis.

I. Smith, F. and Kidwell, D. (1996) Cocaine in hair, saliva, skin swabs, and urine of cocaine users' children. *Forensic Science International*, 83, 179-189.

USDTL ChildGuardSM Test Panels

ChildGuard-5 SM	ChildGuard-7 SM	ChildGuard-9 SM
Amphetamines	Amphetamines	Amphetamines
Cannabinoids	Cannabinoids	Cannabinoids
Cocaine	Cocaine	Cocaine
Opiates	Opiates	Opiates
Phencyclidine (PCP)	Phencyclidine (PCP)	Phencyclidine (PCP)
	Benzodiazepines	Benzodiazepines
	Barbiturates	Barbiturates
		Methadone
		Propoxyphene

Ask The President:

Q: Can you test for the umbilical cord blood instead of the umbilical cord tissue? Does umbilical cord blood testing have the same value as the umbilical cord tissue testing?

A: Umbilical cord blood can be tested for drugs, but unlike umbilical cord tissue, blood has a short window of exposure, with drugs detectable for hours, not weeks to months like tissue. Since both specimens are readily available at the time of birth, umbilical cord tissue is the preferred specimen for drug analysis.

For Phosphatidylethanol, a biomarker for alcohol exposure, anticoagulated cord blood is an acceptable specimen, since its window of exposure is essentially the same as umbilical cord tissue.

Do you have a question for USDTL?

You can ask *President and Scientific Director, Douglas Lewis* by e-mailing your questions to nancy.parra@usdtl.com. Your question may be featured in our newsletter or on our blog at www.usdtlblog.blogspot.com.



President Douglas Lewis