Epidemiology of Drug Addiction

Jane C. Maxwell, Ph. D.
Center for Excellence in Drug Epidemiology
Gulf Coast Addiction Technology Transfer Center
www.gcattc.net

There is no conflict of interest

Data Sources
- Community Epidemiology Work Group (NIDA)
- Treatment admission records (TEDS-DSHS)
- Emergency room data (DAWN)
- Price, purity, supply, trafficking data (DEA)
- Surveys (National & DSHS)
- Forensic laboratory tests by DEA and DPS
Drugs Identified by NFLIS Laboratories by Region: 2005

Substances Identified by California Labs: 2005

Heroin

Source: SAMHSA

1998 Miami DMP Samples
- Southwest Asian: 2.1% Pure
- Southeast Asian: 2.3% Pure
- South American: 19.2% Pure

Jane Maxwell, UT CSWR, 512 232-0610
Opiates

- Black tar heroin, few mentions of stronger "white" heroin west of the Mississippi.
- "Cheese" is Tylenol PM and 1% heroin. Kids mix it up themselves. Concentrated in a few Dallas schools.
- Fentanyl is patches in the West, not the rogue powder seen in the Northeast (where heroin is also a white powder).

Heroin Sources and Supply Routes

Sources of Heroin Seized in US Based on Net Weight: 1989-2004
Average Purity of Heroin Samples in the US: 1992-2004


Heroin Purity: 2004

West Average Purity: 26% Mexican

East Average Purity: 42% So. American

OTHER OPIATES

- Abuse of different opiates varies by region.
- Problem with methadone pain pills (as compared to diskettes and syrup used in narcotic treatment programs).
- Codeine cough syrup and rap music.
- Kids like pills because easy to get from home, not illegal, cheap, claim it's prescribed for them if caught, fewer side effects than street drugs, less stigma, parents won't get as upset as if using illicits, etc. (From Partnership for a Drug Free America's PATS Survey).
Characteristics of Heroin and Other Opiate Treatment Admissions Nationwide, TEDS: 2004

Source: SAMHSA


Source: DEA

ARCOS Methadone Grams Distributed by Type: 2000-2005

Source: DEA
COCAINÉ
Still Around—
with New Users

Cocaine

- Methamphetamine outselling cocaine and crack in some areas in Texas; coke dealers now fronting cocaine to compete—or shifting to selling Ice.
- Purity of cocaine increasing.
- Still around with new users.
- Proportion of crack treatment admissions who are Anglo or Hispanic continues to increase.
- Injecting crack.


Source: SAMHSA
Cocaine Admissions in U.S. and Mexican Border States: 2003

DOWNERS

- Potentiate low-quality heroin (and seen in heroin overdoses)
- Come down from speed or cocaine trips
- Dependence among females
- Kids like alprazolam (Four Bars).

Benzodiazepines Identified by Toxicology Labs in the US: 2000-2005
MARIJUANA

- Fairly stable.
- Influence of Blunts and Wraps
- Use with Fry, PCP, DANK, crack, cough syrup, honey, etc., continues.
- Continuing references to pot and PCP and embalming fluid (ether).
- CJ v. Non-CJ treatment admissions

- Primos--marijuana joint and crack.
- Fry, Amp--joint and embalming fluid (PCP?)
- Fry Sticks & Fry Squares--$10 each.
- Fry Sweets--blunts in embalming fluid.
- Sweet Houses--sell ready-mades.
- Candy Blunts--cigarillos in codeine cough syrup.
- Sherms--menthol cigarettes in embalming fluid.

% Texas Secondary Students Who Had Used Any Illicit Drug in the Past Month, by Ethnicity: 1988-2004

Source: DSHS
Addiction Severity Index Problems of Texans Treated with Primary Marijuana Problem: 2005

<table>
<thead>
<tr>
<th>Category</th>
<th>Non-CJ Referral</th>
<th>CJ Referral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sickness</td>
<td>0%</td>
<td>40%</td>
</tr>
<tr>
<td>Employment</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Family</td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td>Social</td>
<td>60%</td>
<td>60%</td>
</tr>
<tr>
<td>Sub. Abuse</td>
<td>80%</td>
<td>80%</td>
</tr>
<tr>
<td>Emotional</td>
<td>0%</td>
<td>20%</td>
</tr>
</tbody>
</table>

Source: DSHS

Cannabis Treatment Outcomes Among Texas Clients

- Criminal justice admissions to treatment were less impaired, more likely to complete treatment (42% v. 34%), and abstinent from cannabis at follow-up (76% v. 66%).
- 55% of all clients met criteria for cannabis dependence.
- CJ clients received less intensive services.
- Although DSM-IV underreported, voluntary more likely to have mood depressive disorder and be prescribed medications for mental health problems.

Current Trends in Drug Abuse--2006

Percentage of Texas Secondary Students Who Reported They Normally Consumed Five or More Drinks at One Time, by Gender: 2000–2004

Liu, L. Texas School Survey of Substance Use Among Students in Grades 7–12, DSHS.

Primary Problem Substance of Texas DUI Admissions to Treatment

Maxwell, Impaired Drivers at Admission to Substance Abuse Treatment, RSA Poster, 2006.
Methamphetamine

Sources of Amphetamine-Type Substances

Sources of ephedrine

Major producers of methamphetamine

Crack/Meth Pipe

Some pipes are designed with a water bowl which cools the vapor before it is drawn into the lungs. The base to add, usually with a cigarette lighter, causing the crack or meth to subside so it can be drawn into the lungs.

Jane Maxwell, UT CSWR, 512 232-0610
Methamphetamine Use in Past Month Among Persons Ages 12 or Older, by Dependence and Abuse: NSDUH 2002-2005

4 Most Frequently Identified Drugs by NFLIS Toxicology Laboratories

Normal Course of a Drug Epidemic (Texas Cocaine Admissions: 1983-2004)
The Methamphetamine Epidemic:
TEDS Admissions/100,000: 1992-2004

Source: SAMHSA

Stages of Meth Epidemic?

- Early Stages—Ice in gay and party scene; powder meth via overnight express from California; crack in urban areas.
- Middle Stages—Mom & Pop cookers and large problem in rural areas; crack still strong in urban areas; Mexican meth starts being trucked in to urban areas.
- Late Stages—primary problem for treatment admissions; spreads across racial/ethnic groups; Ice is dominant form and powder supply decreases; increasing types of traffickers (criminal groups, ethnic gangs, outlaw bikers).

Race-Ethnicity of US Methamphetamine Admissions:
1992 v. 2004

Source: SAMHSA
U.S. Methamphetamine/Amphetamine Admissions by Race/Ethnicity & Urbanization: 2004

<table>
<thead>
<tr>
<th>Urbanization</th>
<th>White (%)</th>
<th>Other (%)</th>
<th>Black (%)</th>
<th>Hispanic (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Metro</td>
<td>76</td>
<td>77</td>
<td>75</td>
<td>9</td>
</tr>
<tr>
<td>Large Fringe Metro</td>
<td>84</td>
<td>87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Metro w/o City</td>
<td>58</td>
<td>58</td>
<td>58</td>
<td>58</td>
</tr>
<tr>
<td>Small Metro w/o City</td>
<td>58</td>
<td>58</td>
<td>58</td>
<td>58</td>
</tr>
<tr>
<td>Non-Metro w/ City</td>
<td>58</td>
<td>58</td>
<td>58</td>
<td>58</td>
</tr>
<tr>
<td>Non-Metro w/o City</td>
<td>58</td>
<td>58</td>
<td>58</td>
<td>58</td>
</tr>
</tbody>
</table>

Percent

SAMHSA DAIDS Report, 27, 2006, Large is 1 million or more population; Small is MSA with less than 2 million; Non-Metro is city of 10,000 or more.

Primary Amphetamine/Methamphetamine TEDS Admission Rates: 1997 (per 100,000 aged 12 and over)

Source: SAMHSA

Primary Amphetamine/Methamphetamine TEDS Admission Rates: 2003 (per 100,000 aged 12 and over)

Source: SAMHSA
Primary Amphetamine/Methamphetamine TEDS Admission Rates: 2004

Source: SAMHSA

Methamphetamine Admissions in U.S. and Mexican Border States: 2003

Areas to Watch

• Use of meth on the job (Work Force needs)
  • Truckers, day laborers, people working long hours and boring jobs.
• Risky sexual behaviors
  • Heterosexuals & homosexuals.
  • Party people
  • Immigrants/migrants away from home and families.
• Increasing criminal distribution
  • Traffickers following the migrant trail.
  • More organized and criminal gangs.
Club Drugs

- Research studies underway but are incomplete and can be problematic.
- Use of Internet to obtain information from pro & anti-drug sites (BUT information can be erroneous, untested, outdated, or extreme). And trends move around the world through the Internet.
- Problems testing & identifying various drugs.
- Lack of detox & treatment protocols.
- Misperception that all club drugs are alike.

Substances Identified by Labs Participating in the National Forensic Laboratory Identification System: 1997-2005

- **1997**: 0%
- **1999**: 20%
- **2001**: 40%
- **2003**: 60%
- **2005**: 80%

<table>
<thead>
<tr>
<th>Year</th>
<th>MDMA</th>
<th>Heroin</th>
<th>Methamphetamine</th>
<th>Cocaine</th>
<th>Cannabis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: NFLIS

Party Drugs Identified by U.S. Toxicology Labs: 2003-2005

- **2003**: 2000
- **2004**: 4000
- **2005**: 6000

<table>
<thead>
<tr>
<th>Drug</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>LSD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MDMA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heroin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methamphetamine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cocaine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cannabis</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: NFLIS
**LSD and Mushrooms**

- LSD low dose and more prevalent than we think?
- Mushrooms are more popular than LSD? Need to start watching for them.

**GHB, GBL, 1-4BD**

"Fantasy"

---

**DISSOCIATIVE DRUGS:**

PCP, Ketamine, DXM

Distort perceptions of sight and sound and produce feelings of detachment, but not hallucinations (Zombie effect)
Phencyclidine

- PCP, Angel Dust, Killer Weed
- Dissolved in embalming fluid or ether ("Fry," "Amp," "Water, Water").
- Swallowed, sniffed, smoked on joints dipped in "Fry".
- Menthol cigarettes are dipped into liquid PCP or blunts are laced with powdered PCP.

NDARC Study of Ketamine Users*

- N=100; well-educated; older group of party drug users.
- Some had access because in medical field.
- Used with MDMA, MDA & amphetamines.
- Many had regular negative side effects such as inability to speak, blurred vision, lack of coordination.
- Issue for warnings: Usually unpleasant side effects seen by some as "positive" and encouraged experimentation.


Dextromethorphan

Dextromethorphan is a psychoactive drug found in common over the counter cough medicines.

Source: www.third-plateau.lycaeum.org/beginner/index.html
"Robotrip" - high dosages can produce hallucinogenic effects
Part of family of psychoactive compounds called "dissociative anesthetics.
Some effects have been described as similar to those of ketamine (Special K) and PCP.
The DXM experience is described as occurring on levels, or plateaus depending on the amount of the dose taken.
Each plateau is different from another. There are 4 major plateaus - a fifth one that is generally unpleasant and involves a possible trip to the hospital.


**DXM Calculator**

You must drink between 83mL and 25mL of cough syrup to achieve your desired haze!
Carisoprodol

- "Ds", "Dance," Las Vegas Cocktail (with hydrocodone), "Soma Ccoma" (with codeine).
- Reported as problem by CEWG members in Washington, South Florida, and Texas.
- Texas PCC abuse calls from 1998 to 2003—39% involved only carisoprodol. More likely males, adolescents, happened at other residences, schools, public areas; serious medical outcomes.
- 2004 Texas deaths with mention of carisoprodol: 60% male; 93% white; av. age 41. Only 3 of 87 were just carisoprodol; the rest also involved other substances, especially hydrocodone and alprazolam.

Inhalants

% Texas Secondary Students Who Had Used Inhalants Ever or in the Past Month, by Grade: 2004
Percentage of Texas Students Who Had Ever Used Inhalants, by Grade and Number of Different Types Used: 2004


Age Groups of Inhalant Abusers As Seen in National Data Sets
**SPECIAL K (Ketamine)**

- Anesthesia doses 2-10 mg/kg; recreational doses 50-100 mg.
- Unsafe sexual behavior associated with frequent use of Ketamine. Use at gay circuit parties of concern.
- Taken in cyclical binges similar to cocaine or methamphetamine.
- Available as powder to snort or as liquid to inject; used with "puffers" to get exact dosing.
- Users can become psychologically dependent but no evidence of physiologic withdrawal syndrome.

---

**Conclusions from NSDUH: Nonmedical Use of Rx Pain Relievers**

- Increases in lifetime users, but current users relatively stable
- Ages 18-25 had highest rates for all pain relievers reviewed
- Little variation in rates across States, regions, metro/non-metro areas
- Most OxyContin users (lifetime) also used other opiates

Source: SAMHSA
Conclusions from DAWN:
Nonmedical Use of Opioid Pain Relievers

- ED visits in 2004 > 150,000 (131k-185k)
  - Oxycodone, hydrocodone, methadone + fentanyl, morphine, propoxyphene
  - Polya drug use is typical
  - About half of oxycodone products are SR type
- Patients aged 21-54 had highest visit rates
- Rates vary across metro areas examined
- Majority of patients treated and released

Source: SAMHSA