Emerging Illicit Drugs Trends & Appropriate EMS Management

11-15-15

Christopher Holstege, MD
Chief, Division of Medical Toxicology
Director, Blue Ridge Poison Center
Professor, Emergency Medicine & Pediatrics
University of Virginia School of Medicine

ch2xf@virginia.edu

Christopher P. Holstege, MD

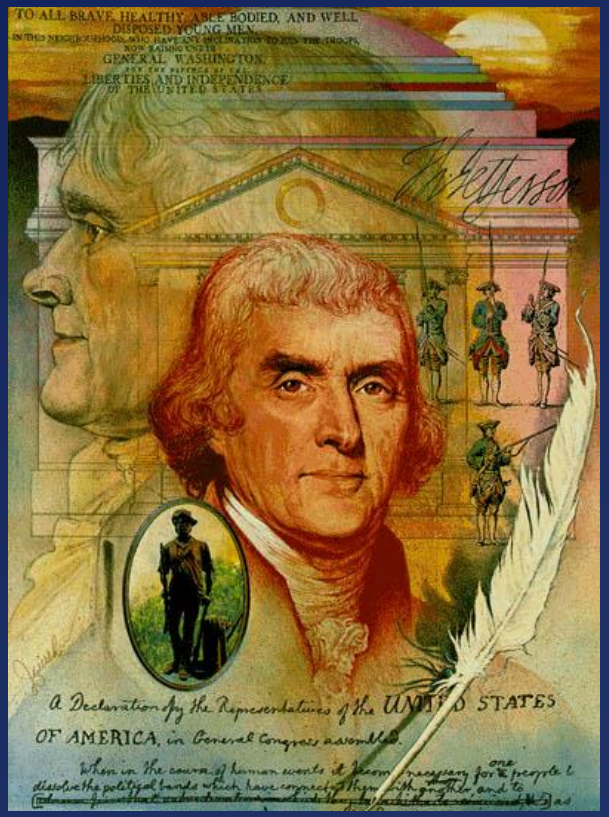
Disclosure

No relevant financial relationships

Overview

- History
- Databases
- Case Examples
  - Rebranding of old substances of abuse: “Molly”
  - Development of new substances of abuse : “bath salts”
  - Introduction of plants as substances of abuse: “salvia”
  - Continuing issue of prescription drugs of abuse: “sleep aids”
- Sources of Drug Purchasing
  - Street Corner Dealer
  - Internet
- Urine Drug Screens
- Importance of Clinical Documentation
- Excited Delirium
- Treatment

History


TO ALL BRAVE, HEALTHY, ABLE BODIED, AND WELL
DISPOSED YOUNG MEN,
GENERAL WASHINGTON,
LIBERTIES AND INDEPENDENCE
A Declaration by the Representatives of the
OF AMERICA, in General Congress assembled.

Event

- On 26 May 1981, an EA-6B Prowler crashed on the flight deck of the U.S.S. Nimitz, killing 14 crewmen and injuring 45 others.

Event

- On 26 May 1981, an EA-6B Prowler crashed on the flight deck of the U.S.S. Nimitz, killing 14 crewmen and injuring 45 others.
- Forensic testing conducted found that several members of the deceased flight deck crew tested positive for marijuana.

The Investigation & Results

- The results revealed a large illicit substance-using cohort within the ranks of enlisted persons and officers.
- As a result, the Secretary of the Navy instituted an intensive drug testing and regulation program. These interventions were then adopted by other branches of the service over a three-year period.
- From these actions was derived the concept of a "drug-free workplace".
- In consultation with his drug-czar, Dr. Carlton Turner, President Ronald Reagan issued...

Legislation

- Executive Order 12564 (1986)
  - Established requirement for drug testing for all Federal employees

Federal Register

Home > Federal Register > Codification > Executive Orders

Executive Order 12564--Drug-free Federal workplace

Source: The provisions of Executive Order 12564 of Sept. 15, 1986, appear at 51 FR 32889, 3 CFR, 1986 Comp., p. 224, unless otherwise noted.

I, RONALD REAGAN, President of the United States of America, find that:

Drug use is having serious adverse effects upon a significant proportion of the national work force and results in billions of dollars of lost productivity each year;

The Federal government, as an employer, is concerned with the well-being of its employees, the successful accomplishment of agency missions, and the need to maintain employee productivity;

The Federal government, as the largest employer in the Nation, can and should show the way towards achieving drug-free workplaces through a program designed to offer drug users a helping hand and, at the same time, demonstrating to drug users and potential drug users that drugs will not be tolerated in the Federal workplace;

The profits from illegal drugs provide the single greatest source of income for organized crime, fuel violent street crime, and otherwise contribute to the breakdown of our society;

The use of illegal drugs, on or off duty, by Federal employees is inconsistent not only with the law-abiding behavior expected of all citizens, but also with the special trust placed in such employees as servants of the public;

Federal employees who use illegal drugs, on or off duty, tend to be less productive, less reliable, and prone to greater absenteeism than their fellow employees who do not use illegal drugs;

The use of illegal drugs, on or off duty, by Federal employees impairs the efficiency of Federal departments and agencies, undermines public confidence in them, and makes it more difficult for other

What “drugs”?

- Drug testing guidelines and processes are established and regulated by the Substance Abuse and Mental Health Services Administration (SAMHSA), formerly under the direction of the National Institute on Drug Abuse (NIDA).

- Urinalysis tests used to detect (*NIDA 5*):
  - Marijuana metabolites
  - Cocaine metabolites
  - Amphetamines
  - Opiate metabolites
  - Phencyclidine (PCP)

Back to the Future

Back to the Future

Navy to Kick Out 64 Sailors for Drug Use From Fleet That Buried Bin Laden

Published October 20, 2011 | Associated Press

Print Email Share Comments Recommend 107 Tweet 38

March 15, 2005: The nuclear powered aircraft carrier USS Carl Vinson (CVN 70) plows through the Indian Ocean as aircraft on its flight deck are prepared for flight operations.

SAN DIEGO – Sixty-four sailors from the San Diego-based U.S. Third Fleet will be kicked out of the Navy for drug use, mostly involving a synthetic drug that mimics marijuana, military officials said Thursday.

Capt. Greg Hicks of the Third Fleet said the sailors worked aboard the USS San Francisco, the floating dry dock Arco, and the USS Carl Vinson, the aircraft carrier that buried Usama bin Laden at sea. He said the Navy is still investigating and does not know if the accused members of the Vinson crew were aboard or using drugs when it was on its mission in the Middle East at the time.

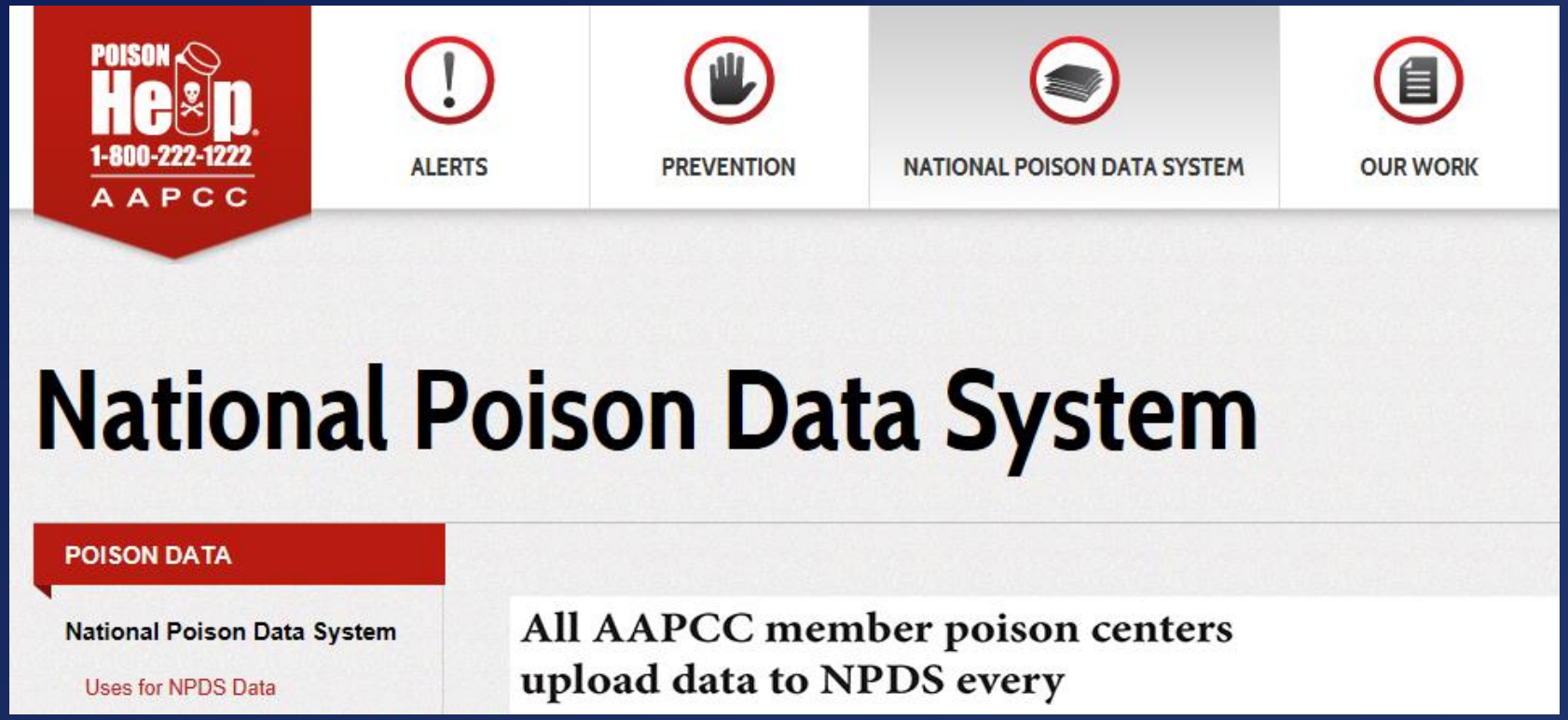
Hicks said all 64 will be separated from the Navy but he did not know when that would happen.

Most of the sailors were caught using the designer drug known as Spice, and 49 were found to be selling it, the Navy said. Six sailors admitted to also using cocaine and one was found to be using methamphetamines, the Navy said.

Databases

AAPCC - NPDS

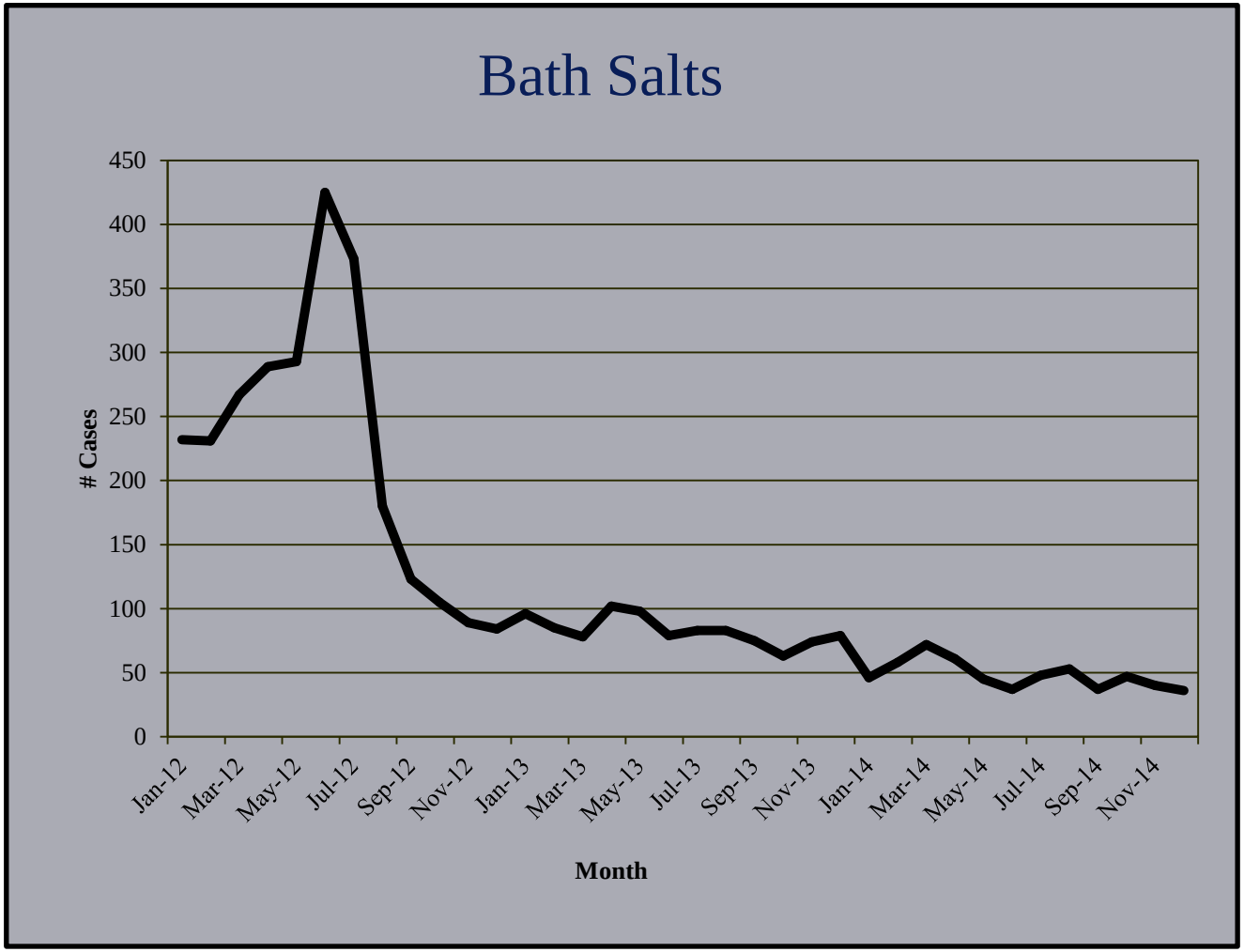
http://www.aapcc.org/data-system/



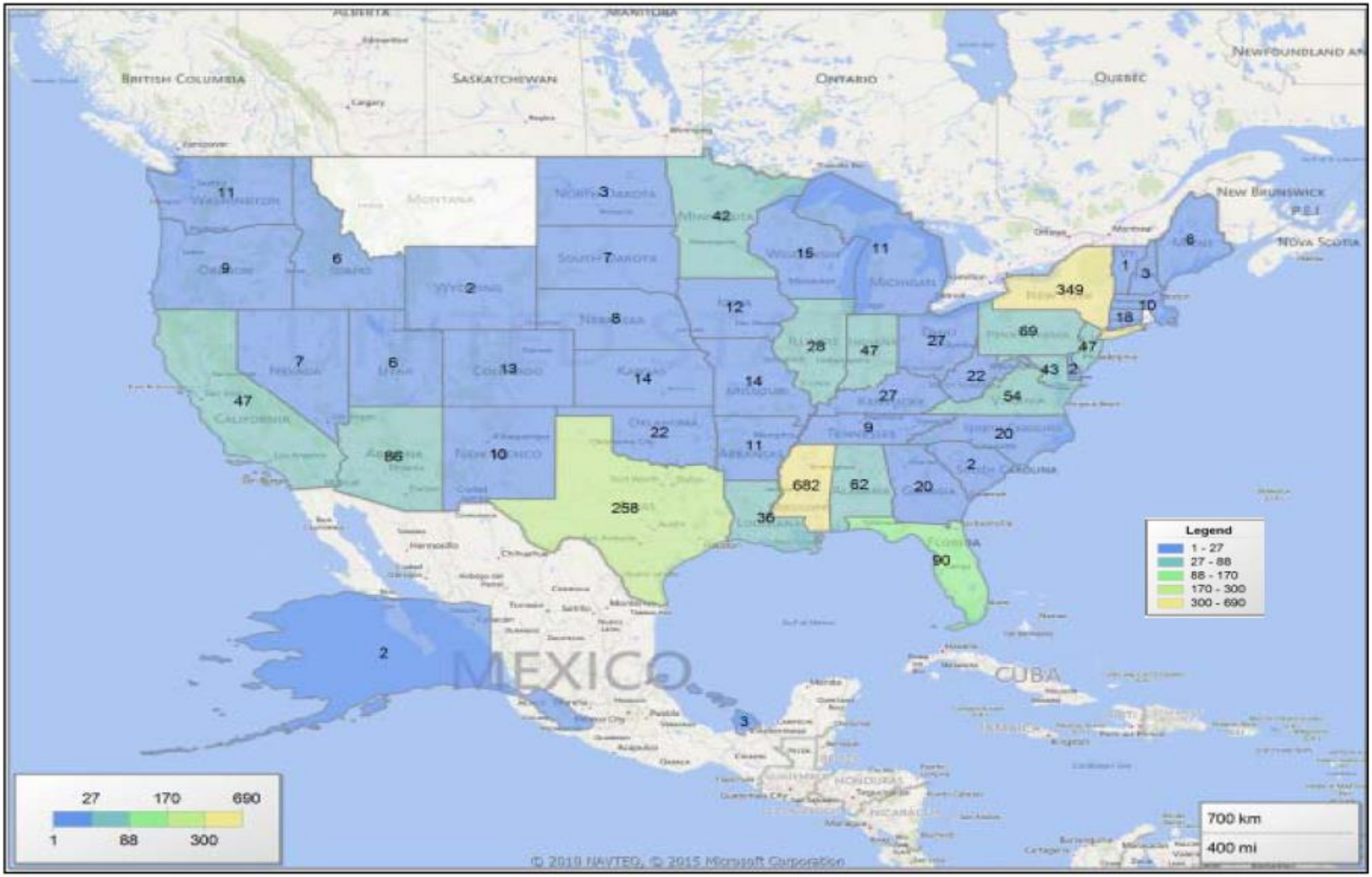
United States Poison Centers

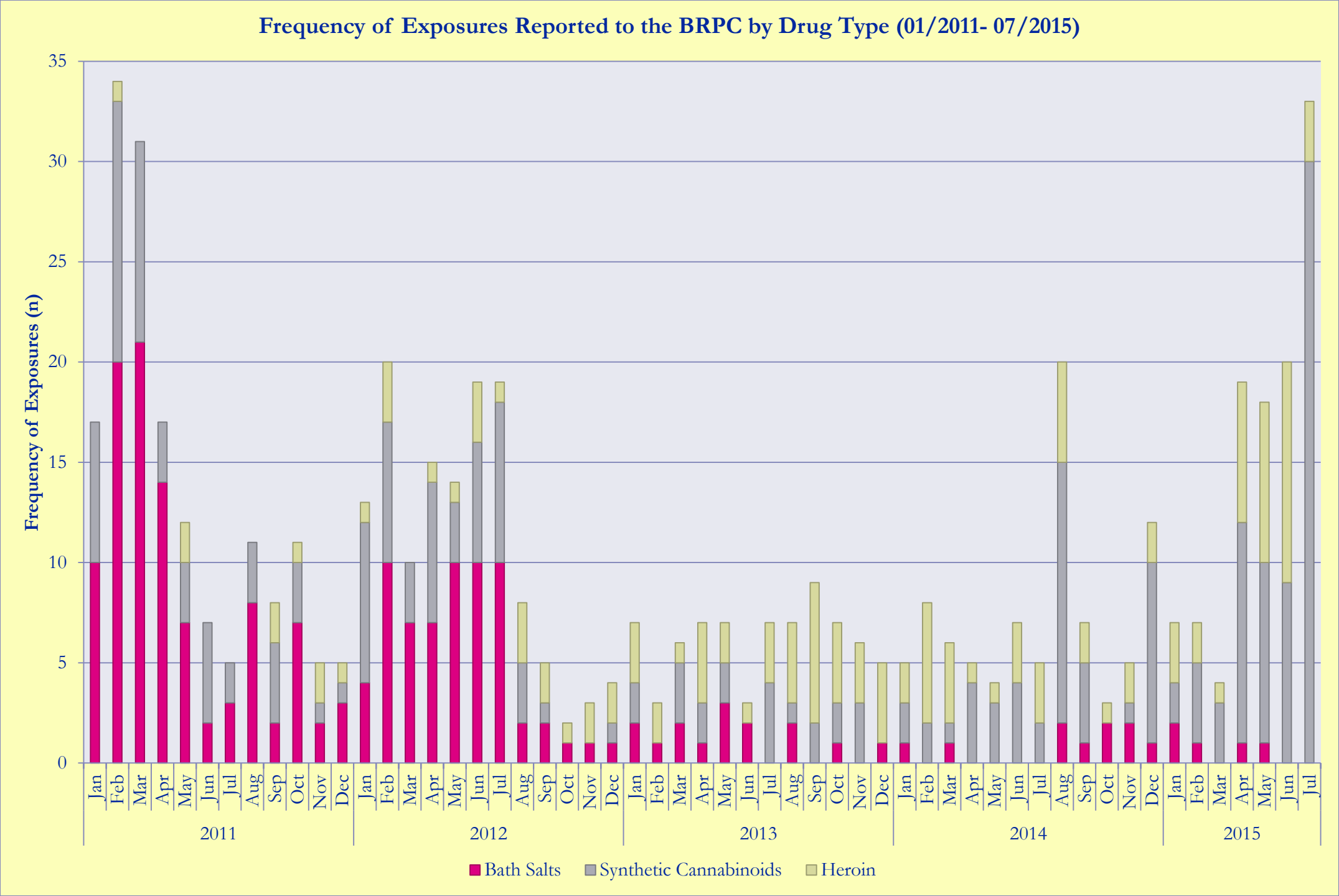
American Association of Poison Control Centers

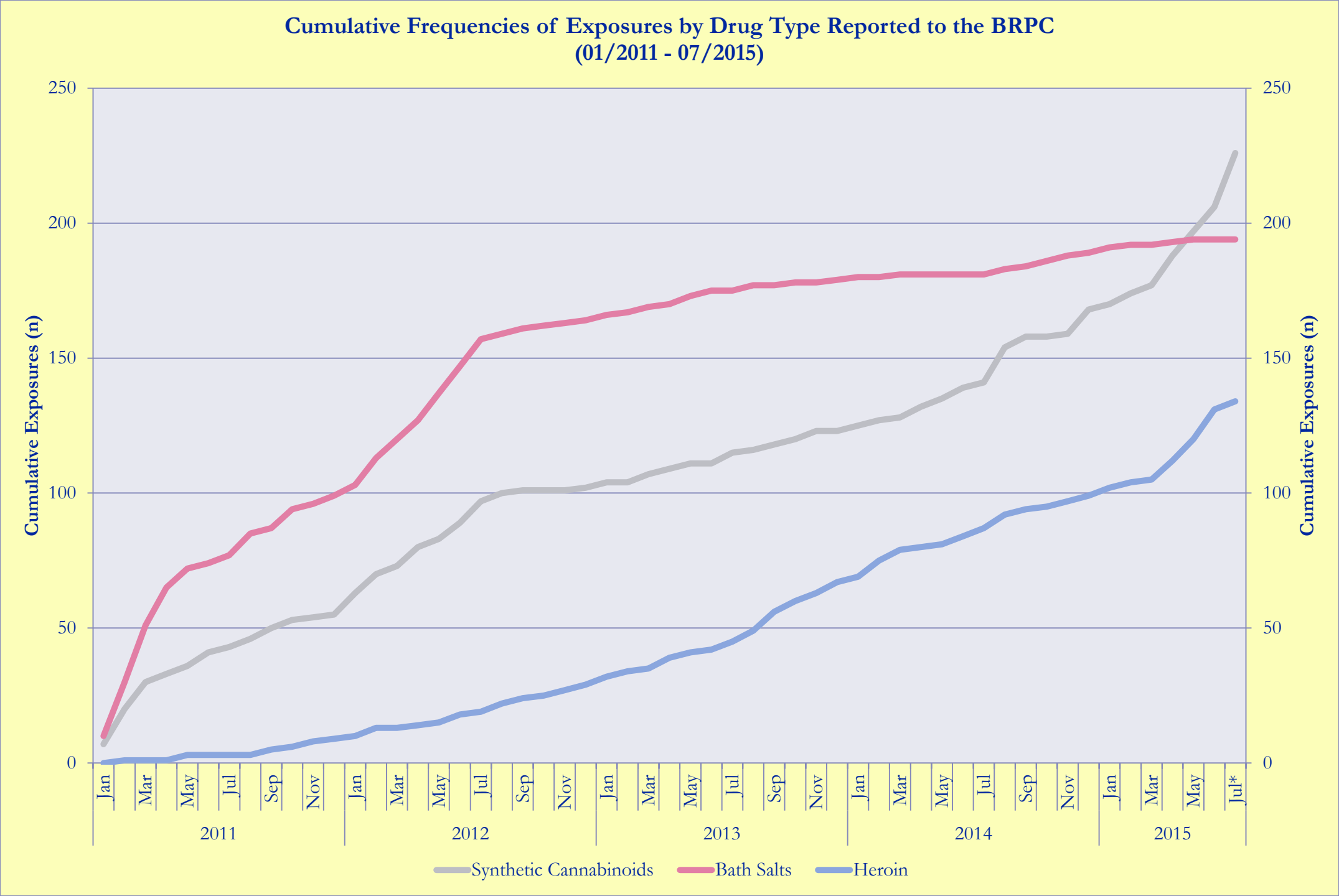
National Poison Data System



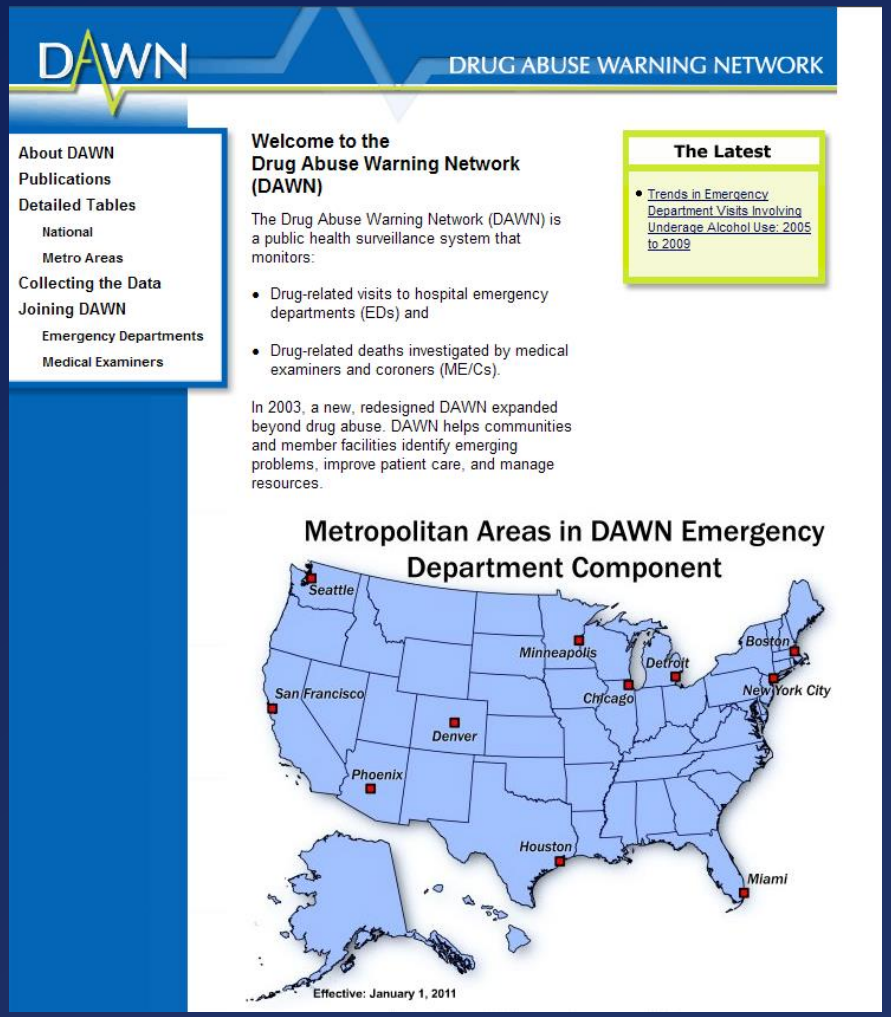
Synthetic Cannabinoid Calls to U.S. Poison Centers (1/1/15-4/28-15)




Frequency of Exposures Reported to the BRPC by Drug Type (01/2011- 07/2015)
Frequency of Exposures (n)
35
30
25
20
15
10
5
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2011
2012
2013
2014
2015
Bath Salts
Synthetic Cannabinoids
Heroin


Cumulative Frequencies of Exposures by Drug Type Reported to the BRPC
(01/2011 - 07/2015)
Cumulative Exposures (n)
250
200
150
100
50
0
Jan
Mar
May
Jul
Sep
Nov
Jul*
2011
2012
2013
2014
2015
Synthetic Cannabinoids
Bath Salts
Heroin

Drug Abuse Warning Network
http://dawninfo.samhsa.gov/

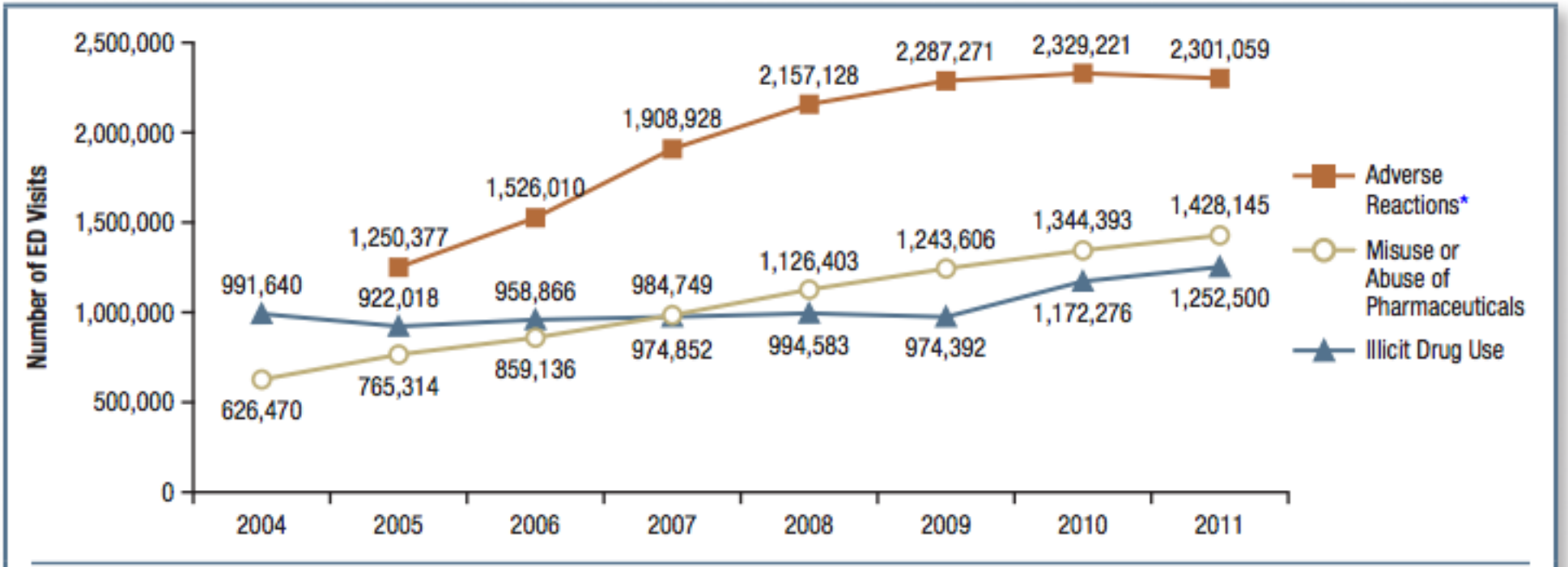


DAWN

- The Drug Abuse Warning Network (DAWN) is a public health surveillance system that monitors drug-related hospital emergency department (ED) visits and drug-related deaths to track the impact of drug use, misuse, and abuse in the U.S.
- DAWN is operated by SAMHSA
- DAWN relies on a sample of general, non-Federal hospitals operating 24-hour EDs.
  - The sample is national in scope, with oversampling of hospitals in selected metropolitan areas.
  - In each participating hospital, ED medical records are reviewed retrospectively to find the ED visits that involved recent drug use.
  - All types of drugs—illegal drugs, prescription and over-the-counter pharmaceuticals (e.g., dietary supplements, cough medicine), and substances inhaled for their psychoactive effects—are included.
  - Alcohol is considered a reportable drug when consumed by patients younger than 21. For patients aged 21 or older, though, alcohol is reported only when it is used in conjunction with other drugs.
- In 2009, there were **2.1 million** ED visits attributed to drug misuse or abuse.
  - Of the 2.1 million ED visits involving drug misuse or abuse, 1.2 million visits involved the misuse or abuse of pharmaceuticals, almost 1.0 million were related to illicit drugs, and about 200,000 visits were associated with underage drinking.
  - Alcohol was involved in more than 650,000 visits, or slightly less than one third (31.8 percent) of visits resulting from drug misuse or abuse

Drug Abuse Warning Network
http://dawninfo.samhsa.gov/

Figure 1. Reasons for Drug-Related Emergency Department (ED) Visits, by Year: 2004 to 2011

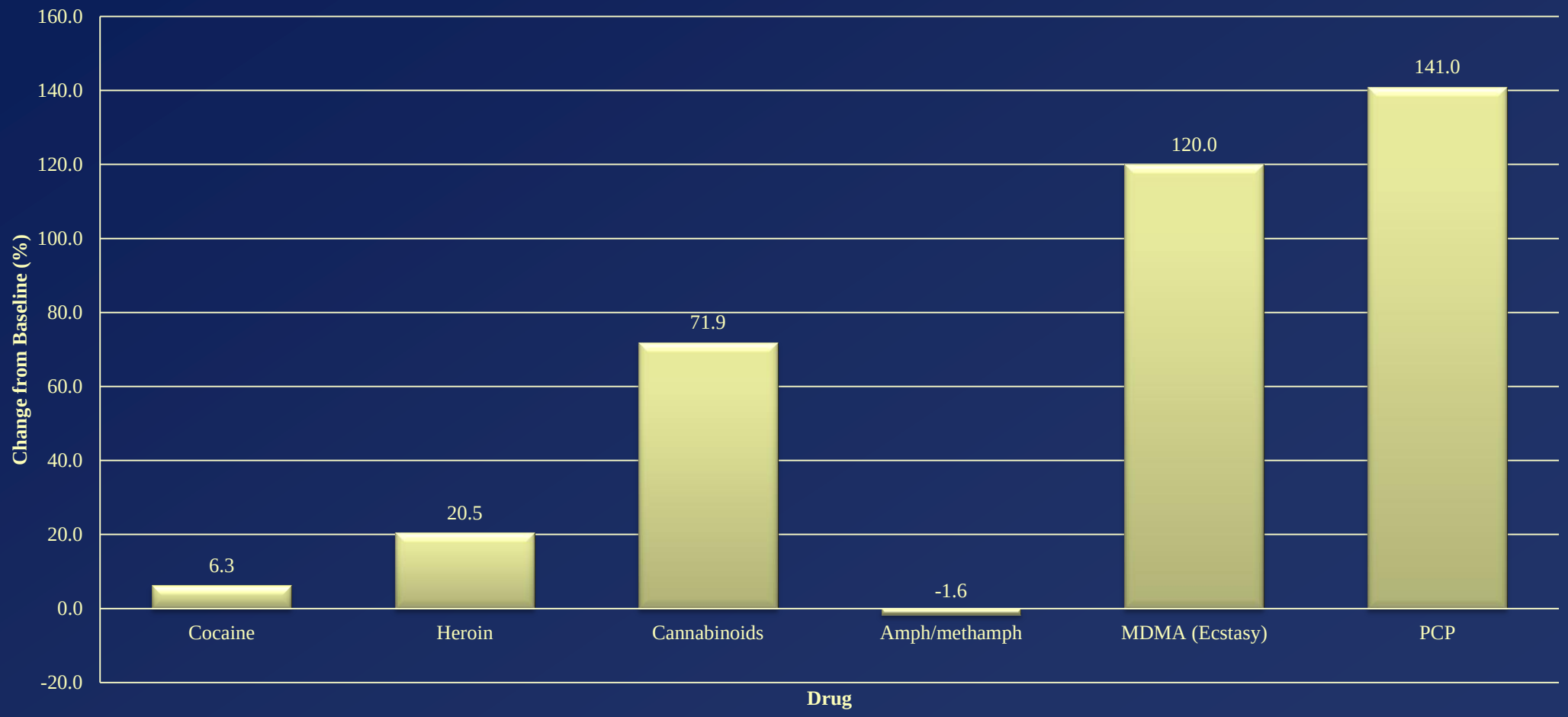


* The estimate for ED visits involving adverse reactions in 2004 was suppressed due to low statistical precision.

Source: 2011 SAMHSA Drug Abuse Warning Network (DAWN).

DAWN – Results

Percent Change in ED Visits, DAWN 2004 and 2011



DAWN - Strengths/Limitations

Strengths

- Only source for estimates of ED admissions in U.S.
- Extensive applications and analysis of trends for drug abuse and misuse
- Provides estimates for metropolitan areas with sufficient participation
- Drug-related mortality counts and rates available

Limitations

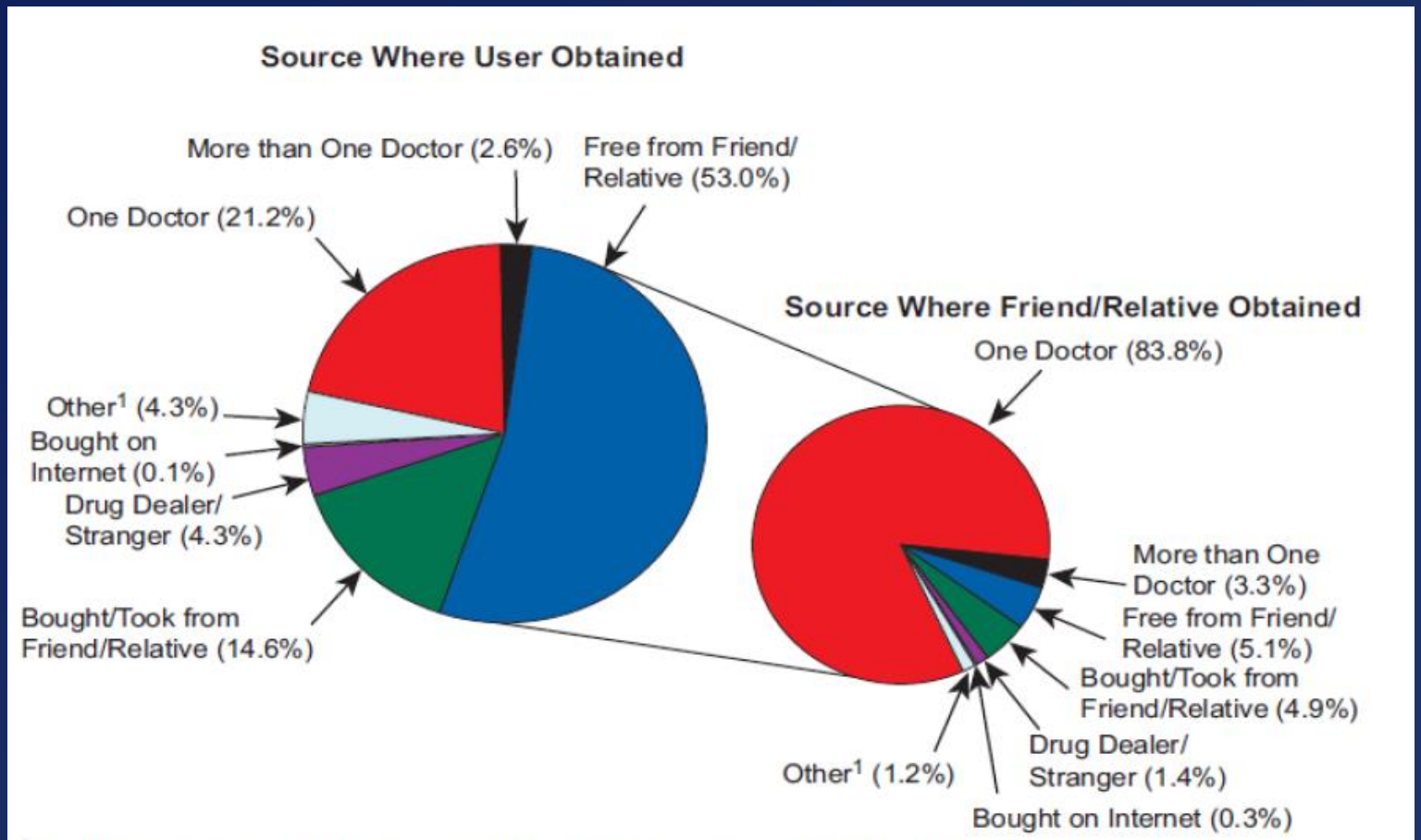
- Data are based on a sample and are subject to sampling variability
- Changing methodology over time
- ED data is a marker, not the true measure of the problem

CDC

Figure 1. Opioid Prescriptions Dispensed by Retail Pharmacies, United States, 1991-2011.

Sources of Pain Relievers for Nonmedical Use Among Past Aged 12 or Older in U.S. 2012.

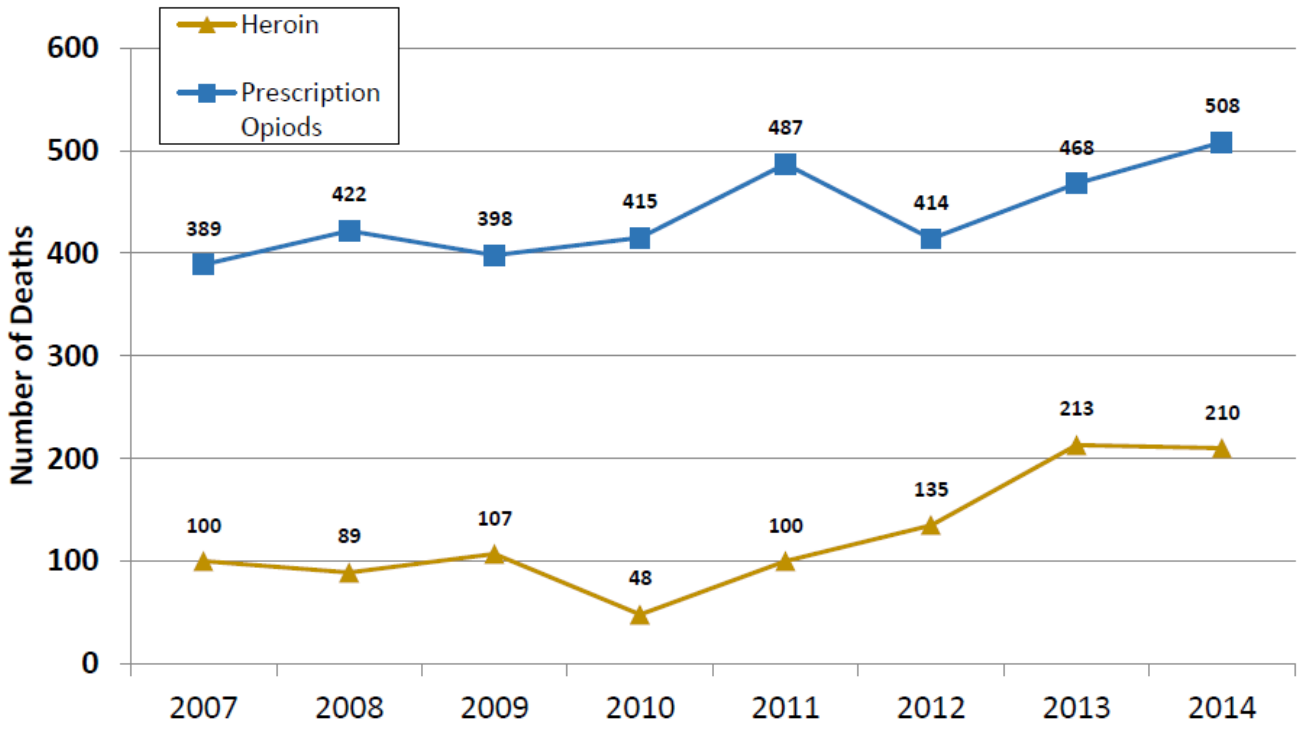
National Survey on Drug Use and Health



[1] The Other category includes the sources "Wrote Fake Prescription," "Stole from Doctor's Office/Clinic/Hospital/Pharmacy," and "Some Other Way."

Number of Deaths by Drug Type (Virginia)

Virginia Department of Health, Office of Chief Medical Examiner



[1] Heroin and prescription drug deaths are tallied separately. Where heroin and prescription opioids caused or contributed to death, decedents will be counted twice.

[2] Prescription opioid deaths are drug/poison deaths where one or more prescription opioids caused or contributed to death.

Monitoring the Future
http://monitoringthefuture.org/

monitoring the future

a continuing study of American youth

CELEBRATING 36 YEARS

Monitoring the Future is an ongoing study of the behaviors, attitudes, and values of American secondary school students, college students, and young adults. Each year, a total of approximately 50,000 8th, 10th and 12th grade students are surveyed (12th graders since 1975, and 8th and 10th graders since 1991). In addition, annual follow-up questionnaires are mailed to a sample of each graduating class for a number of years after their initial participation. The Monitoring the Future Study has been funded under a series of investigator-initiated competing research grants from the National Institute on Drug Abuse, a part of the National Institutes of Health. MTF is conducted at the Survey Research Center in the Institute for Social Research at the University of Michigan.

For additional information regarding the Monitoring the Future study, please e-mail us at MTFinfo@isr.umich.edu.

Comments by the Director of the National Institute on Drug Abuse

In this video, NIDA Director Dr. Nora Volkow discusses the most recent findings from the Monitoring the Future survey.

New Information

Press Releases

Publications

Tables and Figures

Purpose and Design

Principal Investigators

Related Sites

Recent Publications

National Survey Results on Drug Use, 1975-2010, Volumes I & II are now available. Volume I provides data and trends on 8th, 10th, and 12th graders, and Volume II addresses data on college students and adults ages 19-50.

Overview of Key Findings, 2010 (PDF, 1,692K) is now available. This volume presents an overview of the key findings from the 2010 survey of 8th, 10th, and 12th grade students.

New 2010 Press Release "Marijuana use is rising; ecstasy use is beginning to rise; and alcohol use is declining among U.S. teens." Text and associated tables and figures are available.

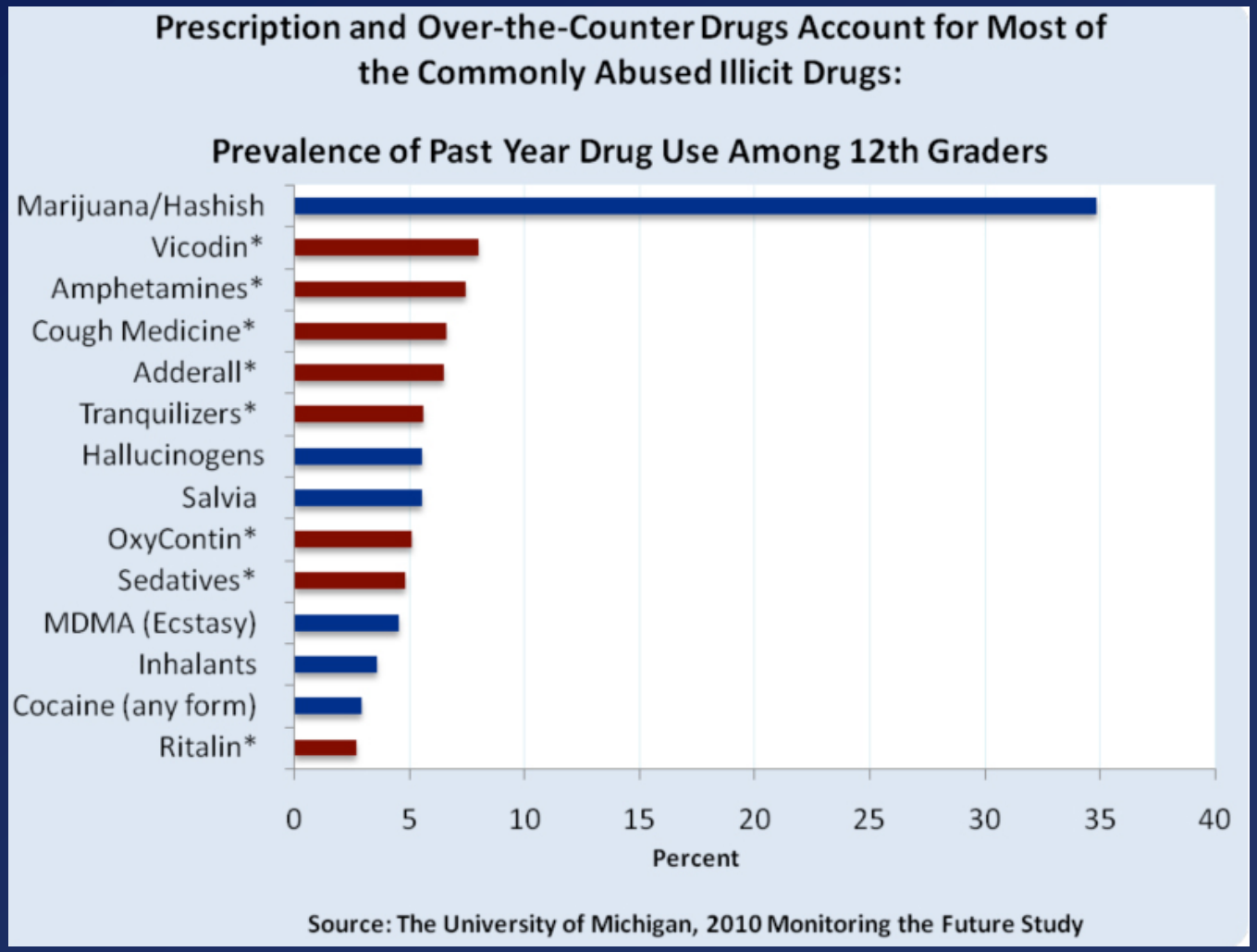
New 2010 Press Release "Smoking stops declining and shows signs of increasing among younger teens." Text and associated tables and figures are available.

HIV/AIDS: Risk & Protective Behaviors among American Young Adults, 2004-2008 is now available. This volume focuses on the behaviors of young adult high school graduates in the general population ages 21-30 related to the spread of HIV/AIDS.

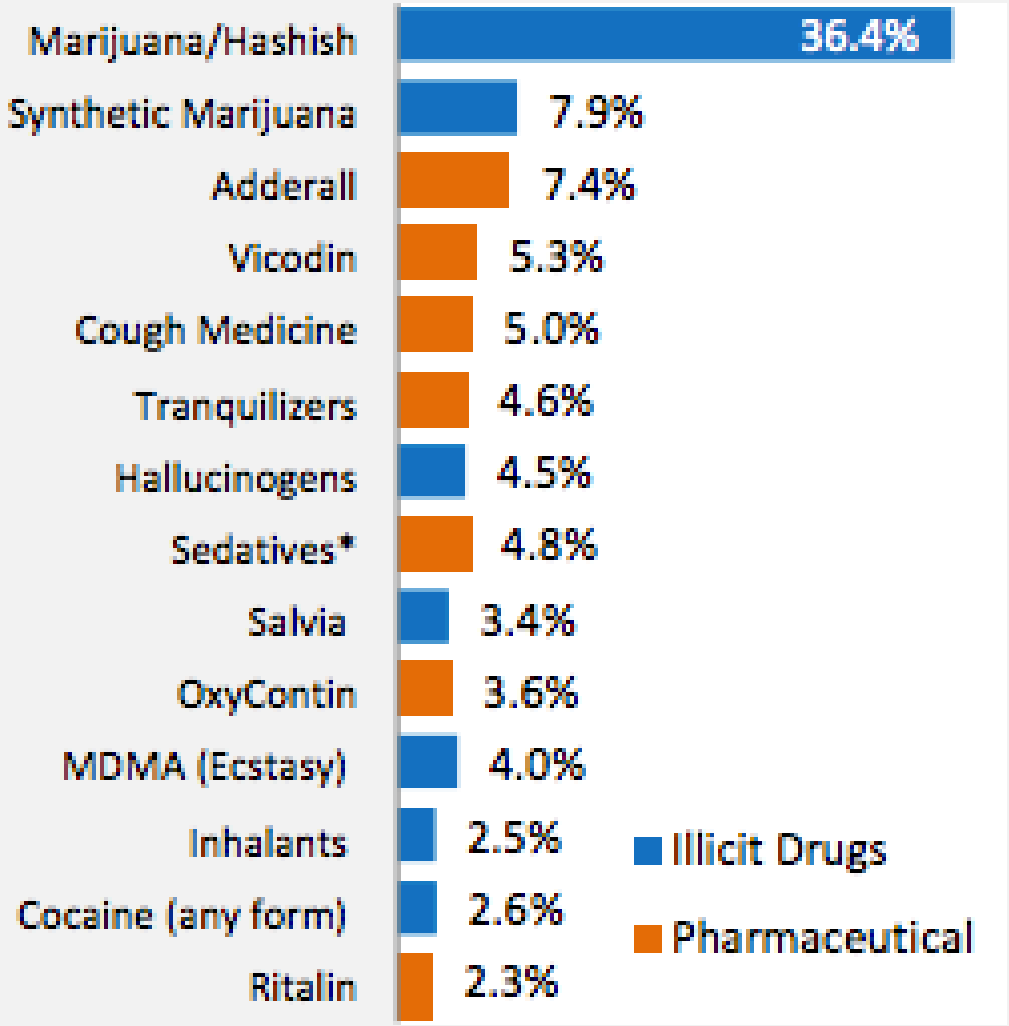
Monitoring the Future

- The survey began with senior classes in 1975
- Beginning in 1991, similar surveys of nationally representative samples of 8th and 10th graders have been conducted annually.
- In all, approximately 50,000 students in about 420 public and private secondary schools are surveyed annually.

Largest Problem



Past-Year Use of Various Drugs by 12th Graders (Percent)



SOURCE: University of Michigan, 2013 Monitoring the Future Study

Mushrooming legal highs leave drug control system floundering, UN warns

Annual world drug report says number of new legal highs available on world market now outstrips number of illicit drugs under international control

Alan Travis, home affairs editor
guardian.co.uk, Wednesday 26 June 2013 04.46 EDT

- The 2013 report published on Wednesday says the newly developed legal high industry has gone global in the past year, with 70 out of the 80 countries surveyed reporting the emergence of new psychoactive substances with significant market share.
- The UN's office on drugs and crime (UNODC) says the speed and creativity in the emergence of these new designer drugs has left the international drug control system floundering for the first time since its establishment in 1961.

http://www.guardian.co.uk/world/2013/jun/26/legal-highs-drug-control/print

VIRGINIA FUSION CENTER
VIRGINIA STATE POLICE
Phone (804) 674-2196
Fax (804) 674-2983
Terrorism Hotline (877) 4VA-TIPS
VFC@vsp.virginia.gov

VFC Intelligence Bulletin 15-09:
Heroin with COCK DEISEL Packaging

On May 26, 2015, Roanoke City Police Department responded to two separate overdose incidents. Found in the presence of both overdose victims were identically packaged and stamped bags of heroin. The stamped bags contained an image of a rooster with the words "COCK DEISEL" below the image, all in red ink.[1]

The following photograph is of one of the bags retrieved from the scene of one of the incidents.

The contents of the bags are being submitted for chemical analysis by Roanoke City Police Department. Both subjects have survived the incident.

M
O
L
L
Y

http://www.youtube.com/watch?v=3Cj7coc0CA0

March 28, 2012 | Music | 4 Comments

Madonna thinks we are idiots, claims Molly reference was about a song

There comes a point when you need to step back and realize that you are 53 years old and completely irrelevant to an EDM music festival. Especially at Ultra Music Festival, where it is safe to say that almost all of the people in attendance weren't even born yet when her "Like a Virgin" first topped the charts in 1984.

But not for the attention whore that is Madonna. On Saturday night, the second of the three day festival, Madge was introducing Avicii and at one point during her mindless rhetoric, where she claimed she had been there for years in "spirit", posed this question to the crowd.

"How many people in this crowd have seen Molly?!"

“We Can't Stop”

Lead single for ***Miley Cyrus***' 2013 album

It’s our party we can do what we want
It’s our party we can say what we want
It’s our party we can love who we want
We can kiss who we want
We can screw who we want

Red cups and sweaty bodies everywhere
Hands in the air like we don’t care
Cause we came to have so much fun now
Bet somebody here might get some now
If you’re not ready to go home
Can I get a "hell no"?
Cause we gonna go all night
Till we see the sunlight, alright

“We Can't Stop”

Lead single for ***Miley Cyrus***' 2013 album

So la-da-di-da-di we like to party
Dancing with Molly
Doing whatever we want
This is our house
This is our rules
And we can’t stop
And we won’t stop
Can’t you see it’s we who own the night?
Can’t you see it we who bout’ that life

And we can’t stop
And we won’t stop
We run things, things don’t run we
Don’t take nothing from nobody

THE FACES OF MDMA

Jeffrey Russ

Olivia Rotondo

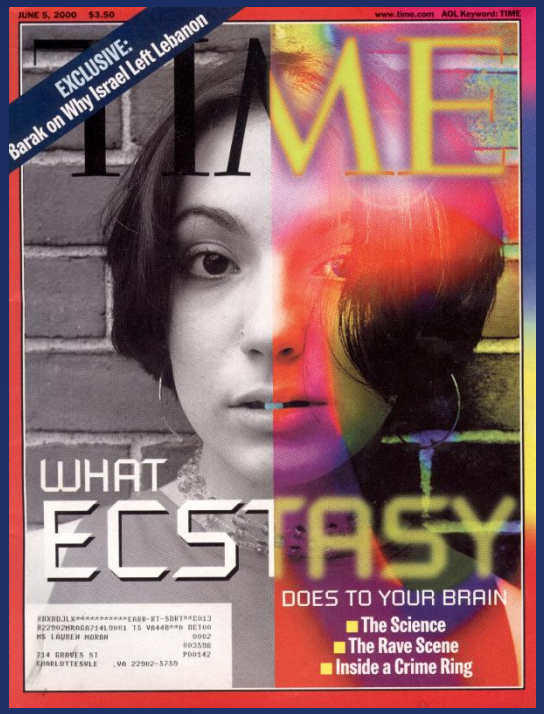
Mary (Shelley) Goldsmith

Brittany Flannigan

2011: Hospitals reported more than 22,000 MDMA-related emergency room visits (120 percent increase from 2004)
Drug Abuse Warning Network.

“Molly”

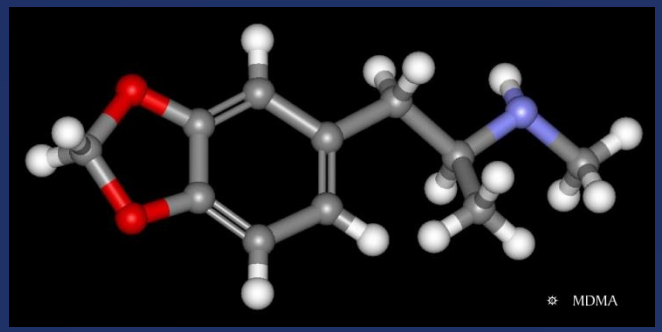
- MDMA
  - 3,4-Methylenedioxymethamphetamine
- “psychedelic amphetamine”
- usually tablet form
  - capsule and powder
- taken orally, rarely snorted
- rave party
- notoriously unreliable in content
  - caffeine, ephedrine, dxm, other amphetamines



MDMA

HISTORY

- Synthesized by Merck pharmaceuticals in 1912
- 1970’s - psychedelic properties published
- 70-80’s - psychotherapeutic tool
- Schedule I on July 1 1985



MDMA

- Dose
  - 80-150 mg
  - “sweet spot”
- Price
  - approximately $20-$30

MDMA

SLANG

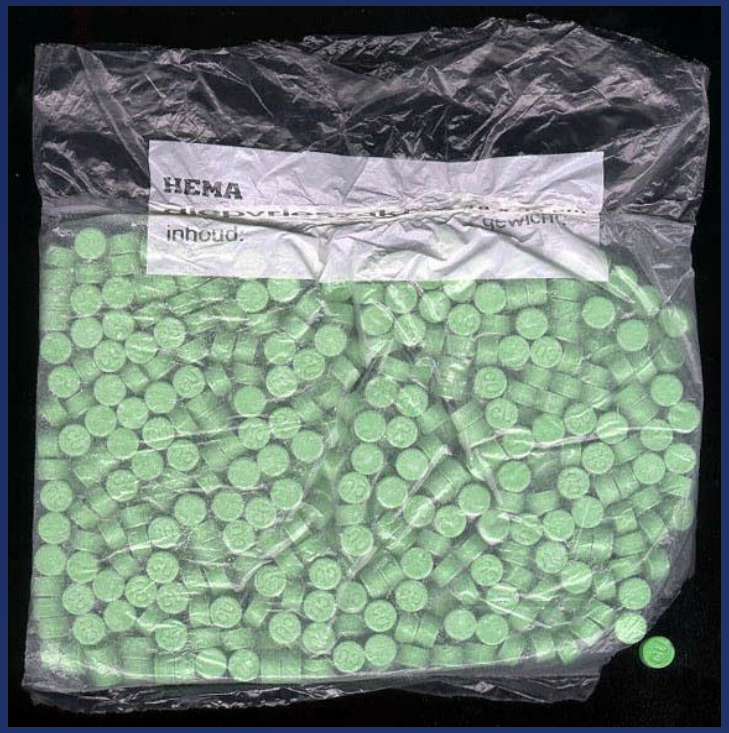
- MDMA
- Ecstasy
- X
- XTC
- E
- M
- Adam
- Bean
- Roll
- Molly

VIP
PAX
PT
LOVE
cK
SEX
I LOVE YOU
cK

MDMA

PROBLEMS

- hallucinogen
- stimulant
- neurotoxic
  - serotonergic nerve terminals
- contaminants?



Ecstasy

- para-methoxy amphetamine (PMA)
- para-methoxy metamphetamine (PMMA)
  - hyperthermia, delerium, rhabdo, hyperkalemia
  - descriptions of 1 hour postmortum temps being 104
  - uncoupling
  - hypoglycemia
  - QRS prolongation

Ecstasy

- Liver Failure

  - De Carlis L, De Gasperi A, Slim AO, Giacomoni A, Corti A, Mazza E, Di Benedetto F, Lauterio A, Arcieri K, Maione G, Rondinara GF, Forti D. Liver transplantation for ecstasy-induced fulminant hepatic failure. Transplant Proc 2001 Aug;33(5):2743-4
  - Garbino J, Henry JA, Mentha G, Romand JA. Ecstasy ingestion and fulminant hepatic failure: liver transplantation to be considered as a last therapeutic option. Vet Hum Toxicol 2001 Apr;43(2):99-102
  - Beitia G, Cobreros A, Sainz L, Cenarruzabeitia E. Ecstasy-induced toxicity in rat liver. Liver 2000 Feb;20(1):8-15
  - Carvalho M, Carvalho F, Bastos ML. Is hyperthermia the triggering factor for hepatotoxicity induced by 3,4-methylenedioxymethamphetamine (ecstasy)? An in vitro study using freshly isolated mouse hepatocytes. Arch Toxicol 2001 Feb;74(12):789-93

QJM

Hyponatraemic states following 3,4-methylenedioxymethamphetamine (MDMA, 'ecstasy') ingestion

T.K. HARTUNG[1], E. SCHOFIELD[2], A.I. SHORT[3], M.J.A. PARR[4] and J.A. HENRY[5]

From the [1]Respiratory Unit, Ninewells Hospital, Dundee, [2]Medical Toxicology Unit, Guy's Hospital, London, [3]Broomfield Hospital, Chelmsford, UK, [4]The Cloisters, Cherrybrook, Sydney NSW 2126, Australia, and [5]Academic Department of Accident & Emergency Medicine, Imperial College, St Mary's Hospital, London, UK

Received 2 November 2002 and in revised form 21 February 2002

Clinical pattern was uniform

- Initial vomiting
- Disturbed behavior
- Drowsiness
- Agitation
- Seizure in 10 patients

Clinical findings did not reflect the magnitude of hyponatremia

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Drug and Alcohol Dependence 83 (2006) 247–254

DRUG and ALCOHOL DEPENDENCE

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Pharmacological content of tablets sold as "ecstasy": Results from an online testing service

Emily E. Tanner-Smith*

Department of Sociology, VU Station B Box 351811, 2301 Vanderbilt Place, Vanderbilt University, Nashville, TN 37235-1811, USA

Received 27 July 2005; received in revised form 20 November 2005; accepted 21 November 2005

Abstract

Purpose: This study examined the pharmacological content of tablets sold as ecstasy, the variation of tablet content by geographic region, and change in tablet content between 1999 and 2005.

Methods: The sample was comprised of tablets anonymously submitted for laboratory testing between 1999 and 2005 ($n = 1214$). Tablet height, width, geographic region, and year of submission were all used to predict the pharmacological content of the tablets.

Results: Overall, 39% of the tablets were comprised of MDMA only, 46% only contained substances other than MDMA and 15% were mixtures of MDMA and other substances. Tablet height and width were inversely related to tablet purity. Ecstasy tablets from California and Florida had decreased likelihoods of containing non-MDMA substances. The purity of tablets decreased over time, which was largely a result of an increasing number of tablets comprised of MDMA along with other substances.

Conclusions: Ecstasy users may be putting themselves at increased risk of substance-induced anxiety, mood, and psychotic disorders by unknowingly ingesting substances other than MDMA. To decrease detrimental health effects, prevention programs should emphasize the impurity of ecstasy tablets and focus on the health impacts of these substances, particularly for populations at high-risk of substance-induced disorders.

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Drug and Alcohol Dependence 2006;83:247–254

- *Methods*
  - The sample was comprised of tablets anonymously submitted for laboratory testing between 1999 and 2005 (n = 1214).
- *Results*
  - 39% of the tablets were comprised of MDMA only
  - 46% only contained substances other than MDMA
  - 15% were mixtures of MDMA and other substances.

ecstasyData.org

Providing access to lab testing results for street ecstasy tablets

SEARCH LAB RESULTS BY All GO

Advanced Search

Send in a tablet for testing

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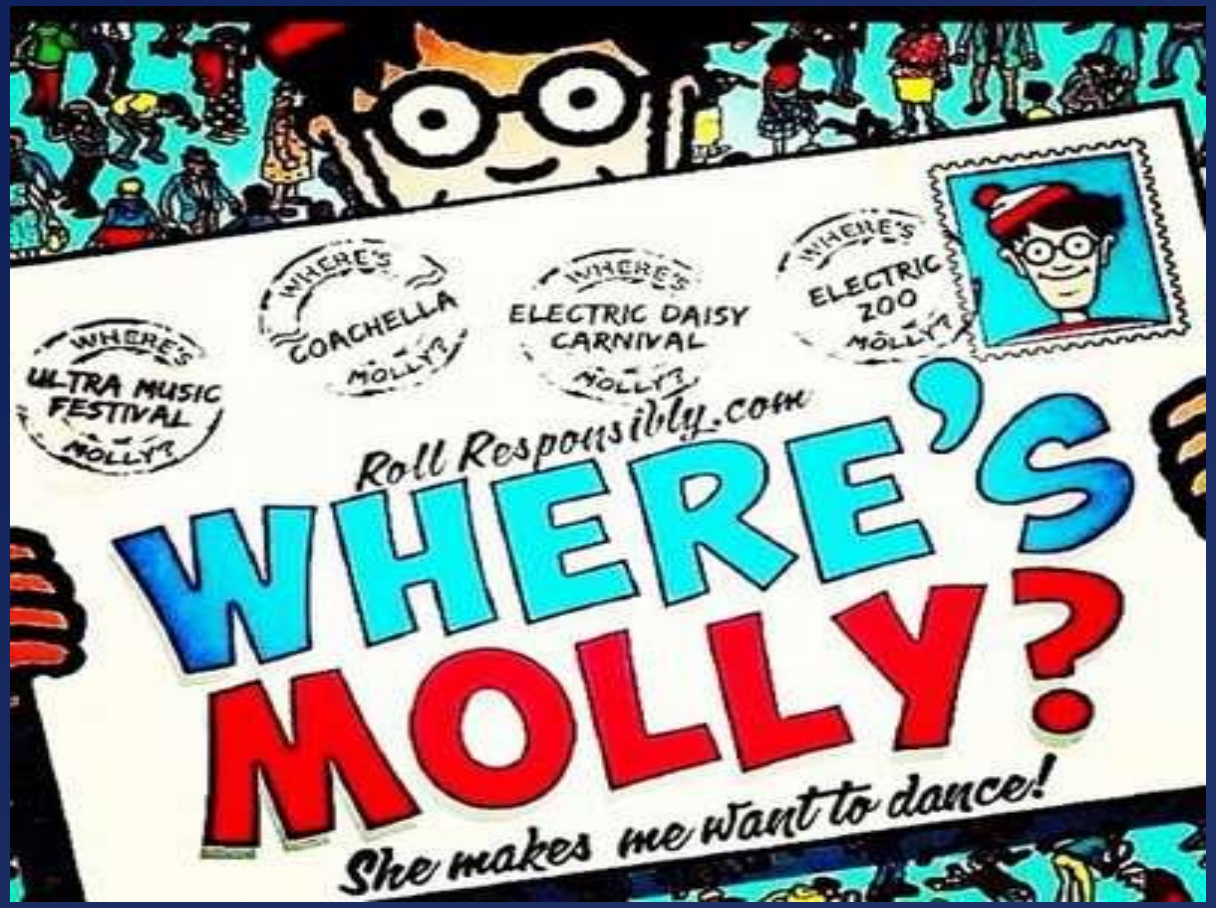
2742 ENTRIES TOTAL | ENTRIES PER PAGE: 100 | PAGE: 1 / 28 > | LIVE

Sample Photo	Tablet Name	Active Contents: Substance	Active Contents: Ratio / Amounts	Date Published	Date Tested	Location	Tablet Size	Data Source
	Yellow Mario Star BLJNT	MDMA	1	Aug 20, 2013	Aug 20, 2013	Seattle, WA	243 mg, 10.2 x 4.6	EcstasyData.org
	Ice Lego Blocks BLB20 (Not Sold As Ecstasy)	2C-B	1	Aug 20, 2013	Aug 20, 2013	New York, NY	451 mg, 11.1 x 6.4	EcstasyData.org
	Unknown Powder B (Not Sold As Ecstasy)	Unidentified	1	Aug 20, 2013	Aug 20, 2013	Seattle, WA	300 mg, - x -	EcstasyData.org
	LSZ Blotter (Not Sold As Ecstasy)	Unidentified	1	Aug 20, 2013	Aug 20, 2013	Unknown	28 mg, 9.0 x 9.1	EcstasyData.org
	Molly 04170	Methylone	1	Aug 20, 2013	Aug 20, 2013	Portsmouth, NH	241 mg, - x -	EcstasyData.org
	Louis Vuitton L5000	Methylone Caffeine	1 ---	Aug 20, 2013	Aug 20, 2013	Los Angeles, CA	282 mg, 8.1 x 5.1	EcstasyData.org
	Yellow-Green Capsule	None Detected	0	Aug 20, 2013	Aug 20, 2013	Nelson, BC, Canada	-	EcstasyData.org

Only 23% of substances tested are MDMA


WHERE'S
ULTRA MUSIC FESTIVAL
MOLLY?
WHERE'S
COACHELLA
MOLLY?
WHERE'S
ELECTRIC DAISY CARNIVAL
MOLLY?
WHERE'S
ELECTRIC ZOO
MOLLY?
Roll Responsibly.com
WHERE'S MOLLY?
She makes me want to dance!

Ann Emerg Med. 2012;60:103-105

TOXICOLOGY/CASE REPORT

Hyperthermia and Multiorgan Failure After Abuse of "Bath Salts" Containing 3,4-Methylenedioxypyrovalerone

Heather A. Borek, MD, Christopher P. Holstege, MD

From the Division of Medical Toxicology, Department of Emergency Medicine, University of Virginia School of Medicine, Charlottesville, VA.

"Bath salts" are being increasingly used as drugs of abuse. These products have been found to contain a variety of compounds, including 3,4-methylenedioxypyrovalerone (MDPV). We present a case of a 25-year-old man who injected bath salts and acutely developed severe agitation, hyperthermia, and tachycardia. Despite aggressive early medical management, including dialysis, he progressed to multiorgan system failure, although he ultimately recovered after a prolonged hospital course. The only chemical substance detected on comprehensive toxicologic testing was MDPV, a synthetic cathinone analogue. According to our case, MDPV abuse may result in adverse multisystem organ effects, including rhabdomyolysis, cardiac injury, hepatic injury, and renal failure. It is unknown whether these end-organ effects were due to direct cellular toxicity induced by MDPV or a result of the patient's marked agitation and hyperthermia. Acute management should focus on the rapid identification of organ injury and appropriate supportive care. [Ann Emerg Med. 2012;60:103-105.]

0196-0644/$-see front matter
Copyright © 2012 by the American College of Emergency Physicians.
doi:10.1016/j.annemergmed.2012.01.005

INTRODUCTION

"Bath salts" and other Internet-acquirable synthetic substances are emerging drugs of abuse. These products are sold under a variety of unassuming brand names, such as Ivory Wave, Ocean Burst, TranQuility, Vanilla Sky, and White Lightning. Various products often have written warnings stating "not for human consumption" on the packages. Typical bath salt products contain a white powder that is abused by inhalation, ingestion, or injection. Bath salts can be purchased through a number of venues, such as on the Internet, in head shops, in convenience stores, or in certain

41.3°C (106.3°F) rectally, and transcutaneous oxygen saturations 100%. The examination was significant for the following: mydriasis, rightward deviation of the eyes, calor, and combativeness requiring restraint by multiple staff members. He received tracheal intubation after receiving midazolam 2 mg, etomidate 20 mg, and succinylcholine 120 mg. Cooling measures were initiated with the application of ice packs to the axilla and cooling blankets covering his body. After tracheal intubation and mechanical ventilation, sedation was maintained with a propofol infusion initially, followed by fentanyl and

Case

- 25 y/o M brought in by EMS, police
- Injected “bath salts” and was running around neighborhood combative and foaming at the mouth
- Takes 9 police/security to hold him down

Physical Exam

- BP 148/66 HR 175 RR 18 Sats 100% T 41.3ºC
- Pupils dilated
- Eyes rightward deviation
- Combative
- Skin hot

- Intubated
- Emergent CT Head with no acute process

Laboratory Values

WBC	17
hemoglobin	15
hematocrit	46
platelets	320
sodium	146
potassium	5.1
chloride	98
bicarbonate	14
BUN	20
creatinine	2.88

glucose	45
AST	201
ALT	334
CPK	2334
troponin	3.24
INR	1.1
lactic acid	7
acetaminophen	<10
salicylate	<4
ethanol	0.008

Hospital Course

- Admitted to ICU
- Dialyzed
- Over 2 days
  - Renal failure
  - Fulminant hepatic failure
  - DIC
  - Cardiac ischemia
  - Rhabdomyolysis
- Transferred to UVA

Initial Labs on Transfer

WBC	11.5
hemoglobin	12.2
hematocrit	35.6
platelets	28
sodium	137
potassium	3.6
chloride	95
bicarbonate	25
BUN	17
creatinine	4.2

glucose	72
AST	16,688
ALT	9,085
CPK	235,377
troponin	29
INR	>9.3
PTT	51
lactate	3.3

UVA Course

- Hemodialysis
- Echo – EF 30%, global LV dysfunction
- Extubated day 9
- Mental status improved day 13
- Discharged day 18

Urine Drug Screen

DRUG SCREENING	
Amphetamine Scr...	NEGATIVE
Barbiturate Scr...	NEGATIVE
Benzodiazepine ...	NEGATIVE
Cannabinoid Scr...	NEGATIVE
Cocaine, Urine	NEGATIVE
Ethanol, Ur	NEGATIVE
Opiate Scrn, Ur	NEGATIVE
PCP Quant, Ur	NEGATIVE
Oxycodone Scree...	NEGATIVE
Propoxyphene, S...	NEGATIVE
Methadone	NEGATIVE
Methadone Metab...	NEGATIVE
pH	5.7 *
Specific Gravit...	1.020

Epic HYPERSPACE®

UVA Course

- Urine from his initial admission day tested positive for MDPV at a concentration of 140 ng/mL using High Performance Liquid Chromatography/Tandem Mass Spectrometry.
- A urine hallucinogen screen was negative for mephedrone, 4-bromo-2,5-dimethoxyphenethylamine, 8-bromo-2,3,6,7-benzo-dihydro-difuran-ethylamine, 8-bromo-benzodifuranyl-isopropylamine, 2,5-dimethoxy-4-iodophenethylamine, 2,5-dimethoxy-4-n-propylthiophenethylamine, 5-methoxy-N,N-diisopropyltryptamine, atropine, 1-(1,3-benzodioxol-5-yl)butan-2-amine, N-benzylpiperazine, Benzylpiperazine, Bufotenine, Dextro/Levo methorphan, Ketamine, Lysergic acid diethylamide, 1-(1,3-benzodioxol-5-yl)-N-methylbutan-2-amine, 4-methylmethcathinone, mescaline, Methylenedioxyamphetamine, Methylenedioxymethamphetamine, Methyltryptamine, Dimethyltryptamine, Norketamine, Phencyclidine, Psilocin, Salvinorin B, Scopolamine, and 3-Trifuoromethylphenylpiperazine.

“Bath Salts”
Synthetic Cathinones

J Addict Med 2013;7: 153–162

REVIEW

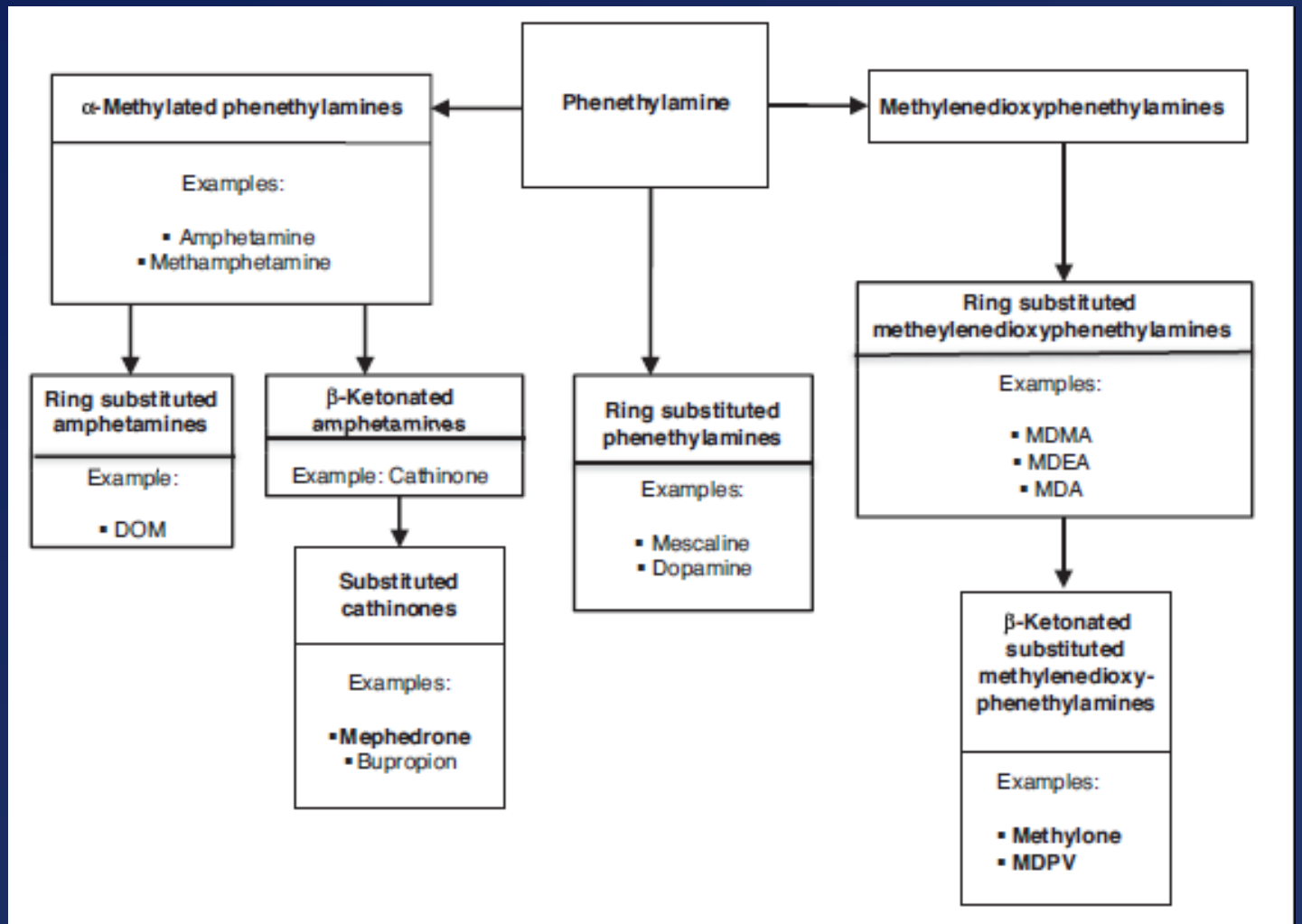
Substituted Cathinone Products: A New Trend in "Bath Salts" and Other Designer Stimulant Drug Use

Erik W. Gunderson, MD, Matthew G. Kirkpatrick, PhD, Laura M. Willing, BS, and Christopher P. Holstege, MD

There is a growing concern about the availability of a new generation of "designer drug" stimulants that are marketed as "bath salts" and other household products. The products are not true bath salts and contain substituted cathinone stimulant substances, such as methylenedioxypyrovalerone (MDPV) and mephedrone. Calls to the American Association of Poison Control Centers regarding "bath salts" consumption began in 2010 and have been steady since that time. Few reports of systematic epidemiologic surveillance or definitive clinical effects of toxicity specifically associated with "bath salts" consumption have been reported in the medical literature. The current narrative review describes the growing trend of designer substituted cathinone use, pharmacology, clinical effects, and recent regulatory changes. It

geoning novel stimulant trend in which synthetic analogues of controlled stimulants are being manufactured and distributed to circumvent drug laws and evade interdiction. Many of the compounds, sometimes referred to as "designer drugs" or "legal highs" (King and Kicman, 2011), were originally developed for research purposes. Nonchemists can easily synthesize the compounds with readily available raw materials (Kelly, 2011; US Department of Justice [US DOJ], 2011). Most designer stimulants are derivatives of cathinone, the primary active alkaloid in the natural herbal stimulant khat (*Catha edulis*). Khat has been chewed for centuries and is native to the Horn of Africa and Arabian Peninsula (Cox and Rampes, 2003). The designer substituted cathinones are part of the

Bath Salts


Phenethylamine
α-Methylated phenethylamines
Examples:
▪ Amphetamine
▪ Methamphetamine
Methylenedioxyphenethylamines
Ring substituted amphetamines
Example:
▪ DOM
β-Ketonated amphetamines
Example: Cathinone
Ring substituted phenethylamines
Examples:
▪ Mescaline
▪ Dopamine
Ring substituted metheylenedioxyphenethylamines
Examples:
▪ MDMA
▪ MDEA
▪ MDA
Substituted cathinones
Examples:
▪ Mephedrone
▪ Bupropion
β-Ketonated substituted methylenedioxy-phenethylamines
Examples:
▪ Methylone
▪ MDPV

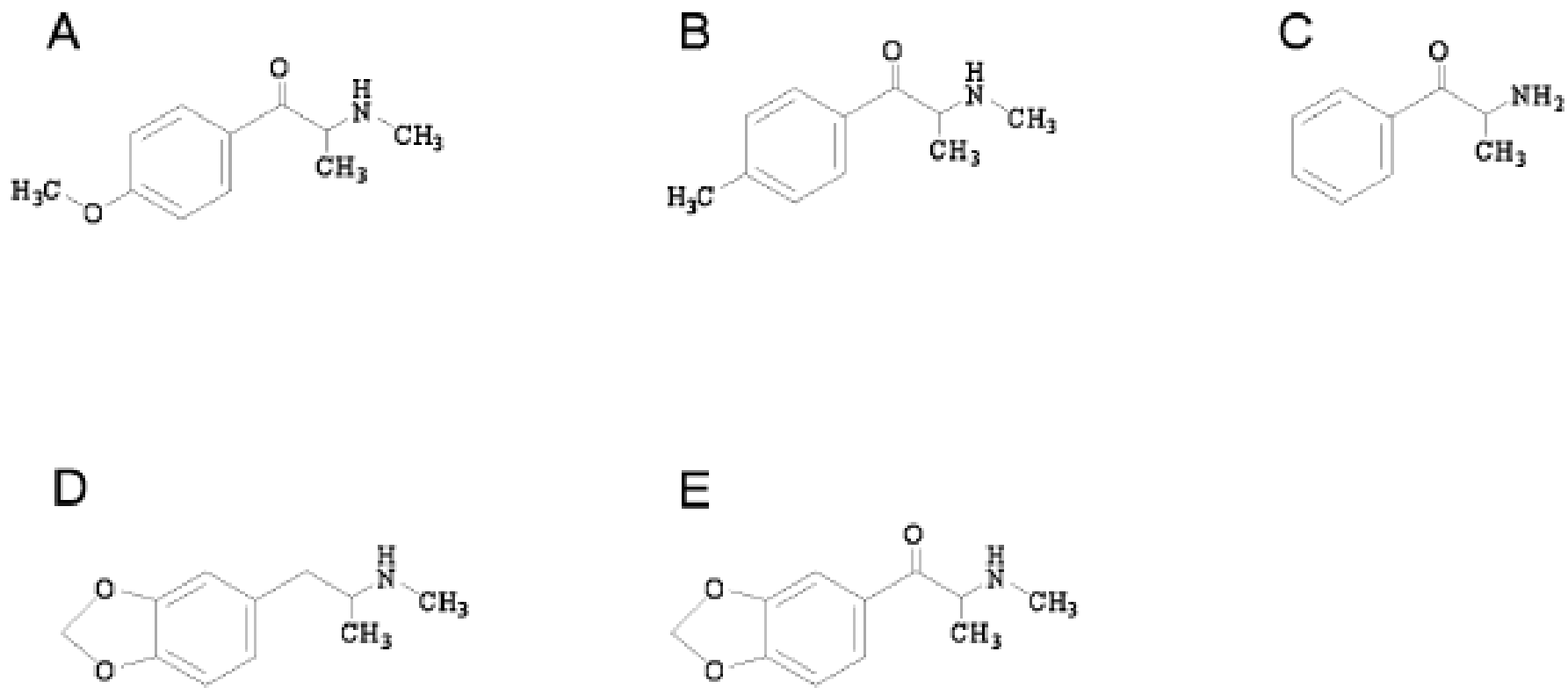


Figure 2. Structures of methedrone and related substances: methedrone (A), mephedrone (B), cathinone (C), MDMA (D), and methylone (E).

Forensic Science International 210 (2011) 195–200

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journal homepage: www.elsevier.com/locate/forsciint

New designer drug of abuse: 3,4-Methylenedioxypyrovalerone (MDPV). Findings from apprehended drivers in Finland

Pirkko Kriikku [a,*], Lars Wilhelm [b], Olaf Schwarz [b], Janne Rintatalo [c]

[a] Vita Health Care Services Ltd., Vita Laboratory, Laivakatu 5 F, 00150 Helsinki, Finland
[b] LADR GmbH Medizinisches Versorgungszentrum Dr. Kramer und Kollegen, Lauenburger Straße 67, 21502 Geesthacht, Germany
[c] National Bureau of Investigation Forensic Laboratory, Jokiniemenkuja 4, 01370 Vantaa, Finland

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ABSTRACT

Starting in 2008 a new designer drug, 3,4-methylenedioxypyrovalerone (MDPV) appeared among users of illegal drugs in Finland. Since then there have been several seizures of MDPV by police and customs and it has been connected to many crimes of different types. In this study the incidence and impact of the use of MDPV in drivers suspected of being under the influence of drugs (DUID) in Finland was assessed.

Since autumn 2009, blood samples from drivers suspected of DUID in Finland have been analysed for the presence of MDPV. A new LC–MS/MS method for the determination of MDPV in serum was established. In order to assess the impact of MDPV on driving performance, drug and alcohol findings of positive MDPV cases were compared with data from the clinical examination carried out while the

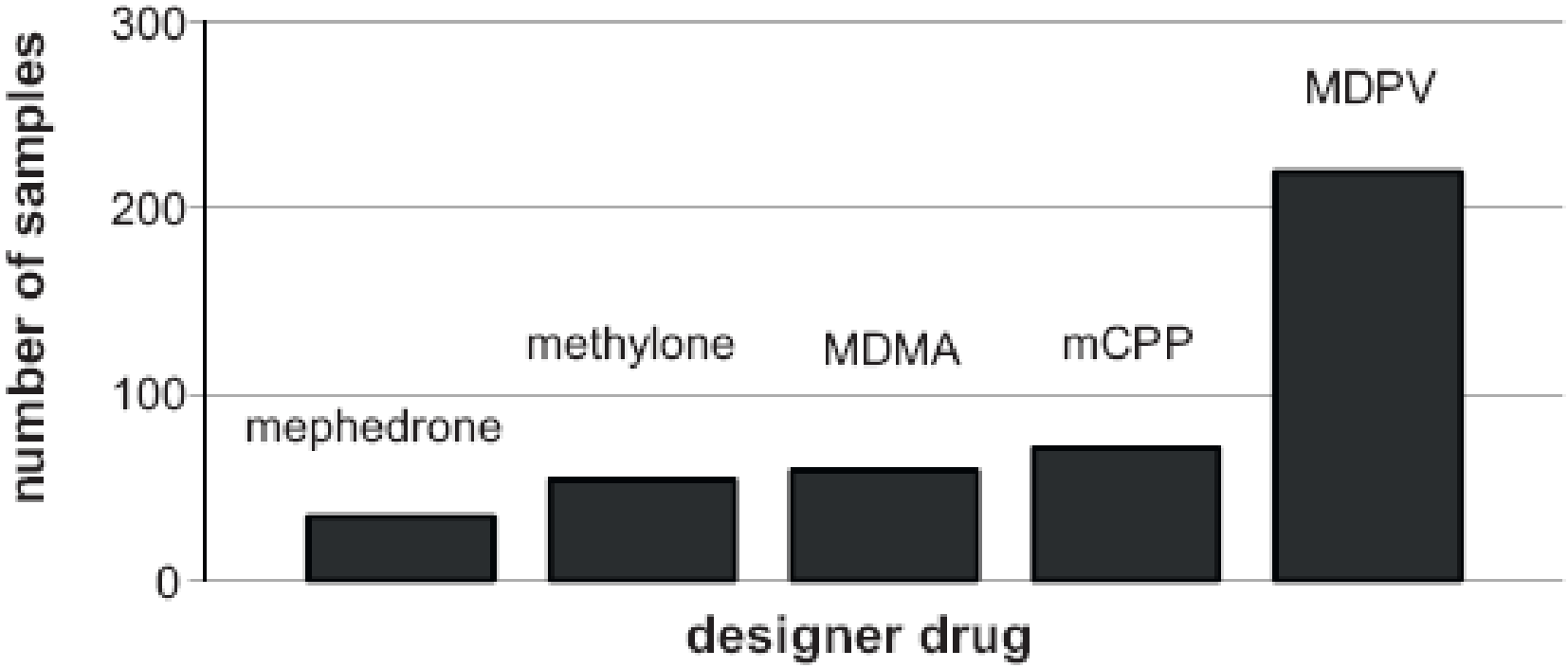


Fig. 7. Most abundant designer drugs seized in Finland between 1 January and 31 August 2010 and analysed by the Finnish National Bureau of Investigation Forensic Laboratory, Vantaa, Finland.

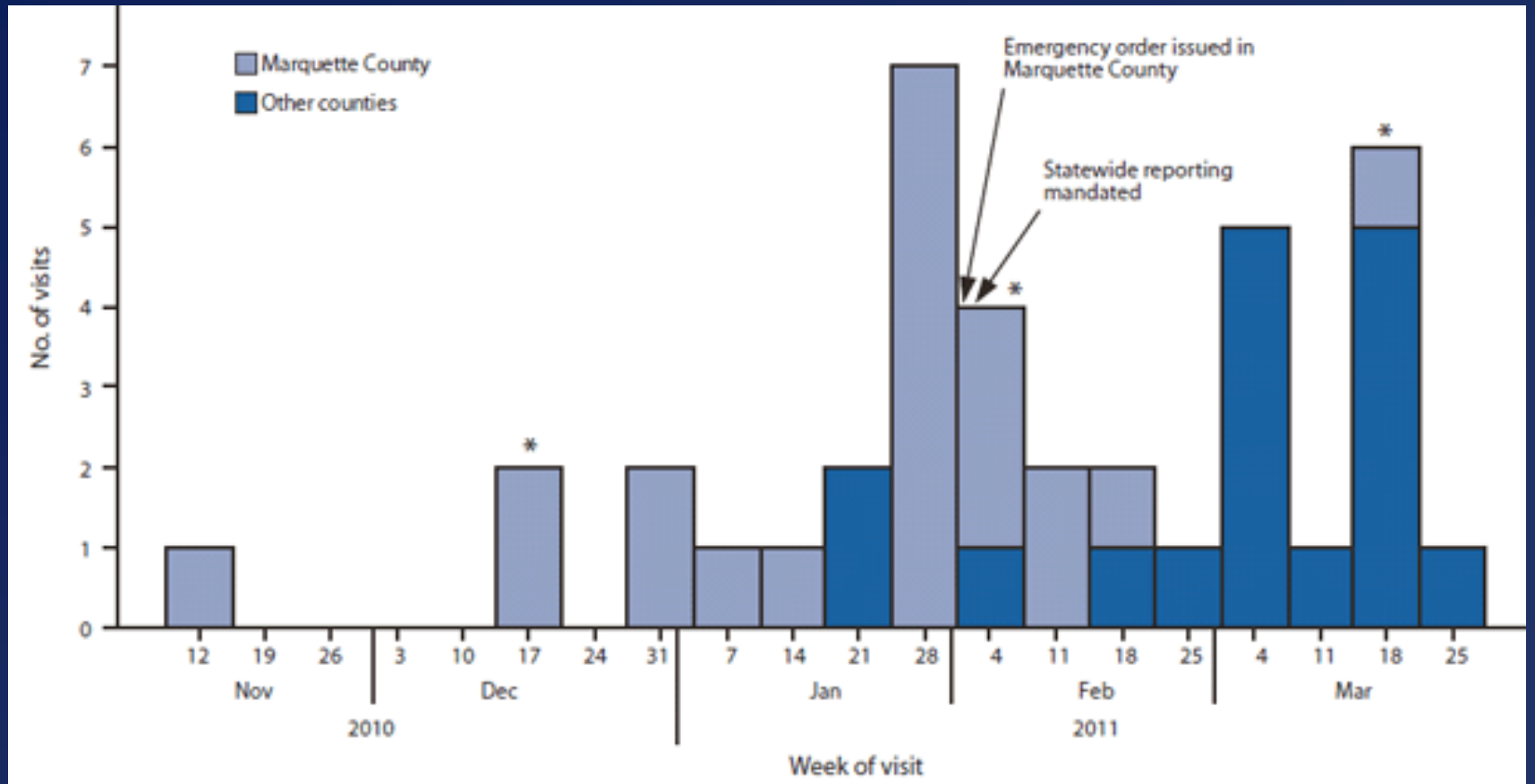
Finland Drivers

- Blood samples from drivers suspected of driving under the influence of drugs (2009-2010)
  - LC-MS/MS
  - 3000 samples from suspected DUI
  - 259 positive for MDPV (nearly all not legally ethanol intoxicated)
- 87% male; 76% between 25-44 years of age
- Psycho-physical achievement test
  - Performed on 208 of 259
  - 84% had functional impairment

Emergency Department Visits After Use of a Drug Sold as "Bath Salts" - Michigan, November 13, 2010-March 31, 2011 MMWR 2011;60(19);624-627

- On February 5, 2011 MDCH used its chemical poisoning regulations to mandate statewide reporting by hospitals of cases of possible "bath salts" intoxication so that cases could be identified and characterized.
- Health-care providers were notified via the Michigan Health Alert Network about new cases and the potential for severe physical and psychological effects of "bath salts" abuse, and were provided a standardized reporting form.
- The PCC was designated as an agent of the state so it could receive case reports directly, allowing for mandatory reporting 24 hours a day, 7 days a week. As part of the investigation, patient information for Marquette County cases occurring before mandatory reporting was abstracted from medical charts by a MDCH staff member.
- A case was defined in a person who visited a Michigan ED during November 13, 2010 - March 31, 2011, after self-reported or suspected use of "bath salts" (traditional cosmetic bath salts were excluded), with cardiovascular, neurologic, or psychological signs or symptoms consistent with acute intoxication.
- Overall, the investigation identified 35 patients in Michigan, including three who visited the ED twice for "bath salt" abuse.

MMWR 2011;60(19);624-627



* Second emergency department visit by patient.

MMWR 2011;60(19);624-627

- Sex
  - Women: 46%
  - Men: 54%
- Age
  - 20-29: 63%
  - 30-39: 14%
  - 40-49: 17%
  - >50: 6%
- Exposure route
  - Injected: 63%
  - Snorted: 26%
  - Ingested: 11%
  - Unknown: 14%
- Additional Drug Use
  - Marijuana: 29%
  - Opiates: 23%
  - Benzodiazepines: 14%
  - Cocaine: 11%
  - Amphetamines: 6%
- Signs & Symptoms
  - Agitation: 66%
  - Tachycardia: 63%
  - Delusions/Hallucinations: 40%
  - Seizures/tremor: 29%
  - Hypertension: 23%
  - Drowsiness: 23%
  - Paranoia: 20%
  - Mydriasis: 20%
- Disposition
  - Treated in the ED & released – 43%
  - Admitted – 49%
  - Dead on arrival – 3%
  - Left AMA – 6%

MDPV

- Resembles cathinone, found in khat
- Analogue of pyrovalerone
  - Class of synthetic compounds studied in search for medication for cocaine abuse

Meltzer PC, Butler D, Deschamps JR, Madras BK. 1-(4-Methylphenyl)-2-pyrrolidin-1-yl-pentan-1-one (Pyrovalerone) analogues: a promising class of monoamine uptake inhibitors. *J. Med. Chem*. 2006;49(4):1420-1432.

Pyrovalerones

- Dopamine uptake inhibition
  - 9x more potent than cocaine
- Norepinephrine uptake inhibition
  - 13x more potent than cocaine
- Relatively poor inhibitors of serotonin transporter

Meltzer PC, Butler D, Deschamps JR, Madras BK. 1-(4-Methylphenyl)-2-pyrrolidin-1-yl-pentan-1-one (Pyrovalerone) analogues: a promising class of monoamine uptake inhibitors. *J. Med. Chem*. 2006;49(4):1420-1432.

Local/State

2 life terms plus 157 years for New Castle County officer's killer

Friday, January 17, 2014

EMBED

TAGS: delaware news, police, police officer killed, stabbing, new castle county news, local/state

Comment Now Email Print Report a typo

Action News

WILMINGTON, Del. - January 17, 2014 (WPVI) -- A Wilmington man who pleaded guilty but mentally ill in the fatal stabbing of a New Castle County police lieutenant has been sentenced to two life terms plus 157 years in prison.

Thirty-five-year-old David Salasky was sentenced Friday in New Castle County Superior Court.

Synthetic Drug Abuse Prevention Act of 2012

- Introduced by Sen. Rob Portman of Ohio on May 16, 2012 as bill S.3190.
- Through congressional work, becomes 4-pg amendment to the 140-pg Food and Drug Administration Safety and Innovation Act of 2012 (Subtitle D of Provision XI ("Other Provisions")).
- President Obama signs into law on July 10, 2012

SDAPA

Has 2 main sections: Secs. 1152 and 1153.

Sec. 1152: Works to ban synthetic drugs by:

- Adding cannabimimetics category to Schedule I of the Controlled Substances Act. (aims at spice/K2).
- Adding more drugs to pre-existing hallucinogenics category of Schedule 1. (aims at bath salts).

Before SDAPA 1152

3 Schedule I categories:

- opiates (42 drugs)
- opium derivatives (22 drugs)
- hallucinogenics (17 drugs)

After SDAPA 1152

4 Schedule I categories:

- Opiates (42 drugs)
- Opium derivatives (22 drugs)
- Hallucinogenics ~~(17 drugs)~~ (28 drugs)
- Cannabimimetics

SDAPA 1153

- Amends Section 201(h)(2) of the Controlled Substances Act (21 U.S.C. 811(h)(2)), which has been giving the Attorney General the ability to temporarily place a drug on Schedule I, "to avoid an imminent hazard to the public safety."
- Before Amendment: can be temporarily scheduled for 1 year, with a possible 6-month extension
- After Amendment: can be temporarily scheduled for 2 years, with a possible 1 year extension

Research Article

Drug Testing and Analysis

Received: 29 June 2010 Revised: 6 July 2010 Accepted: 7 July 2010 Published online in Wiley Interscience: 5 August 2010

(www.drugtestinganalysis.com) DOI 10.1002/dta.155

Analyses of second-generation 'legal highs' in the UK: Initial findings

Simon D. Brandt,[a*] Harry R. Sumnall,[b] Fiona Measham[c] and Jon Cole[d]

In the UK, mephedrone and other so-called 'legal high' derivatives have recently been classified as Class B, Schedule I under the Misuse of Drugs Act 1971. Since then, alternative products have been advertised on a number of websites. In order to obtain an immediate snapshot of the situation, 24 products were purchased online from 18 UK-based websites over a period of 6 weeks following the ban in April 2010. Qualitative analyses were carried out by gas chromatography ion trap mass spectrometry using electron- and chemical ionization modes, nuclear magnetic resonance spectroscopy, and comparison with reference standards. Overall, the purchased products consisted of single cathinones or cathinone mixtures including mephedrone, butylone, 4-methyl-*N*-ethylcathinone, flephedrone (4-fluoromethcathinone) and MDPV (3,4-methylenedioxypyrovalerone), respectively. Benzocaine, caffeine, lidocaine, and procaine were also detected. The emphasis was placed on 'Energy 1' (NRG-1), a product advertised as a legal replacement for mephedrone-type derivatives usually claiming to contain naphyrone (naphthylpyrovalerone, O-2482). It was found that 70% of NRG-1 and NRG-2 products appeared to contain a mixture of cathinones banned in April 2010 and rebranded as 'new' legal highs, rather than legal chemicals such as naphyrone as claimed by the retailers. Only one out of 13 NRG-1 samples appeared to show analytical data consistent with naphyrone. These findings also suggest that both consumers and online sellers (unlike manufacturers and wholesalers) are, most likely unknowingly, confronted with the risk of criminalization and potential harm. **Copyright © 2010 John Wiley & Sons, Ltd.**

Analysis of NRG ‘legal highs’ in the UK: identification and formation of novel cathinones

- A total of 24 “legal high” products were purchased from 18 UK-based websites over a period of 6 weeks following a ban of methedrone in April of 2010.
- Most products were delivered in transparent plastic or silver foil bags
- The majority of products appeared as white colored crystals
- The majority of envelopes delivered by postal mail did not show any indication of the correlating website.

Table 1. 'Legal highs' purchased online on UK-based websites over a period of 6 weeks following the ban of mephedrone on 16th April 2010. Focus was placed on NRG-1 and NRG-2 products.[a] Website number,[b] Product number

WS[a]	Prod. no.[b]	Label	Compounds detected
1	1	NRG-1	Butylone + MDPV
2	2	NRG-1	Flephedrone (4-fluoromethcathinone)
3	3	NRG-1	Flephedrone + MDPV
4	4	NRG-2	4-Methyl-*N*-ethylcathinone
5	5	NRG-1	Flephedrone + MDPV
6	6	NRG-1	Caffeine (+ mephedrone traces)
7	7	NRG-1	Naphyrone
8	8	NRG-1	Butylone + MDPV
9	9	MDAI	Inorganic material
10	10	NRG-1	Mephedrone
11	11	NRG-1	Inorganic material
11	12	NRG-2	Mephedrone + benzocaine
12	13	NRG-1	Mephedrone
12	14	NRG-2	Mephedrone
12	15	DMC	Caffeine + lidocaine
12	16	MDAI	Mephedrone
13	17	NRG-2	4-Methyl-*N*-ethylcathinone
14	18	NRG-1	Caffeine
14	19	NRG-2	Benzocaine + caffeine
15	20	NRG-2	4-Methyl-*N*-ethylcathinone
16	21	NRG-2	4-Methyl-*N*-ethylcathinone
16	22	Granules	Mephedrone
17	23	NRG-1	Procaine (+ mephedrone traces)
18	24	NRG-1	Caffeine

Synthetic Cannabinoids

NIH Public Access
Author Manuscript
Subst Abus. Author manuscript; available in PMC 2015 January 01.

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A Survey of Synthetic Cannabinoid Consumption by Current Cannabis Users

Erik W. Gunderson, MD, FASAM[1,2,3], **Heather M. Haughey, PhD**[1], **Nassima Ait-Daoud, MD**[1], **Amruta S. Joshi, MS**[1], and **Carl L. Hart, PhD**[2,4]

[1]University of Virginia, Charlottesville, VA

[2]Columbia University, New York, NY

[3]Center for Wellness and Change, Charlottesville, VA

[4]New York State Psychiatric Institute, NY, NY

Abstract

Background—Despite growing concern about the increased rates of synthetic cannabinoid (SC) use and their effects, only limited data are available that addresses these issues. This study assessed the extent of SC product use and reported effects among a cohort of adult marijuana and

Survey

- Mean age - 29
- Males – 81%
- Education – 29% no degree, 42% high school degree, 29% college
- Employment – 55% unemployed, 26% part-time, 19% full time
- Current cannabis use – 98%
  - Daily – 60%
  - 5-6 days – 26%
  - 3-4 days – 10%
  - 1-2 days – 2%
- Current (past month) synthetic cannabinoid use – 10%

Survey

Reasons for use, n (%):	
Try new high	14 (67)
Avoid positive drug test	12 (57)
Friend using it	11 (52)
Couldn't get MJ	10 (48)
Easy to obtain	10 (48)
Cheaper than MJ	8 (38)
Similar MJ high	7 (33)
Decrease irritability if no cannabis	4 (19)
Other: "accidental"	1 (4)

Emerging Trends

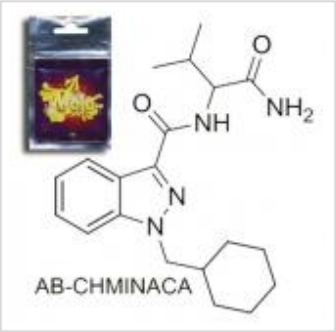
Increasing Overdoses From Synthetic Cannabinoids ("Spice," "K2," etc.) in Several States

Updated May 8, 2015

Recent surges in hospitalizations and calls to poison control centers linked to consumption of synthetic cannabinoid products--sold under brand names like "Spice," "K2," "No More Mr. Nice Guy," and others--are being reported in several southern and northeastern U.S. states and have prompted officials to issue health warnings. After a surge in synthetic cannabinoid exposures and poison center calls in

Synthetic compound added to federal schedule of controlled substances

Submitted by Sharon Brooks on February 20, 2015 - 2:57pm



A synthetic cannabinoid (SC) purported to induce a marijuana-like high in users was added to the federal schedule of controlled substances Jan. 30, along with two others, and law enforcement, forensic scientists and the U.S. Attorney for the Eastern District of Texas John Malcolm Bales say the toxic compound has been causing havoc right here in Southeast Texas.

According to Bales, in spite of the federal ban, the state and cities need to take action against the compound and those like it in order to prosecute cases related to the blend.

AB-CHMINACA, AB-PINACA, and THJ-2201 were officially deemed Schedule 1 controlled substances by the United States Drug Enforcement Administration (DEA) after a request for the temporary order was initiated September 2014, necessary to avoid what the agency called "an imminent hazard to the public safety."

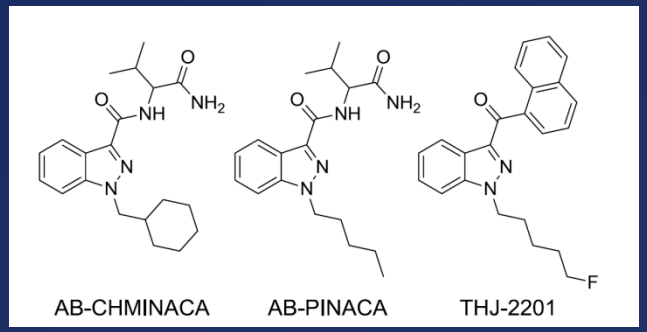
The final order was made effective Jan. 30 of this year.

Sgt. Bryan Baker of the Beaumont Police Department's Narcotics unit says one of the substances, AB-CHMINACA, is widespread around Texas and Louisiana and known to cause severe adverse health effects.

"We're seeing a big increase of AB-CHMINACA, a newer synthetic marijuana," said Sgt. Baker. He said that in Louisiana, a variant of the compound, known as MAB-CHMINACA, has caused numerous overdoses, with more than 125 affected people reporting to Baton Rouge hospitals Oct. 3, 2014, leading Gov. Bobby Jindal and officials with the Louisiana Department of Health and Hospitals (DHH), and Louisiana State Police to announce an emergency ban of the compound Oct. 29, 2014.

AB-FUBINACA, AB-CHMINACA, AB-PINACA, THJ-2201

- N-[(1S)-1-(aminocarbonyl)-2-methylpropyl]-1-(cyclohexylmethyl)-1H-indazole-3-carboxamide
- An indazole-based synthetic cannabinoid
- Potent agonist of the CB_1 receptor (10 x JWH-018)
- First synthesized by Pfizer , Inc. for potential therapeutic use.
- AB-CHMINACA is structurally related to it with a cyclohexyl group substituted for the 4-fluorophenyl group.
- As of January 20, 2015, it is a Schedule 1 controlled substance



Synthetic Cannabinoids

What is *Spice* and *K2*?

- A.K.A. “Smoke”, “Sence”, “Yucatan Fire”, “Skunk”, “Genie”, “Skunk”, “Zohai”
- An incense blend, “not for human consumption”, that when smoked gives users a cannabis-like high
- Sold as early as 2002 in Europe
- Lack of complete contents on package
- Plants: Indian Warrior, Lion’s Tail, Baybean, Blue Lotus, Vanilla, Honey, etc.
- As of Nov. 3, 2010, poison centers reported 1,966 calls about the products, according to the American Association of Poison Control Centers’ National Poison Data System.

Cannabinoids

- Family of Compounds that act on Cannabinoid receptors (e.g. CB1 and CB2)
- Three groups
  - Phytocannabinoids - Found in cannabis plant; most prevalent are Tetrahydrocannabinol (THC), Cannabidiol (CBD), and Cannabinol (CBN)
  - Endocannabinoids - Endogenous compounds that are produced on-demand and serve as intercellular “lipid messengers”
  - Synthetic cannabinoids

The synthetics found in Spice

- **HU-210**
  - Various studies show it is anywhere from 66-800 times more potent than THC
- **JWH-018**
  - Believed to have THC-like effects
- **CP 47,497**
  - 3 to 28 times more potent than THC
- **JWH-073**
  - THC-like effects probable
- **HU-211**
  - Studies tentatively show no THC-like effects

Spice and K2

- Synthetic cannabinoids have been found in products such as Spice and K2
  - not listed as an ingredient on package
  - Each bag of Spice could contain a different mix of the synthetic chemical substances
- Different varieties offering differing highs, due to different synthetic cannabinoids
- Large market for underage kids
- More costly than marijuana
  - ~$30 per gm (marijuana is ~5 per grams)

How is it used?

- Rolled in papers and smoked
- Packed into a blunt
- Hookah pipes
- Bong
- Inhaled after burning as incense

Effects – Chat rooms

- “Deterioration of mood and perception”
- “Imperative voices as well as recurrent paranoid hallucinations” (in pts with h/o psychosis)
- “Uncontrollable twitching, loss of blood flow” to “head and extremities (cold, pale skin)”
- “Feeling...I was about to die”

03-06-2013, 21:55 #59

javmarfer
Newbie

Join Date: 12-11-2012
Male from Spain
Posts: 5

Re: AKB-48 (APINACA) Drug Info

To use this substance I cook a delicious brownie with this recipe:

ingredients:

-125g of chocolate
-125g of butter
-130g of sugar
-2 huevos
-50g of flour
-1 Tablespoon vanilla sugar
-100 mg of AKB48

Preparation:

The first thing we do is melt the chocolate, then add the diced butter until melted with chocolate, mixing it well to create a dough.

Next, beat the eggs with the sugar until white, then mix with the melted chocolate, you add the flour, and vanilla, until we have a mass.

Finally, we have to grease the bowl with butter, and introduce the dough in the oven at 150 ° for about 30 minutes.

If you divide the brownie into 8 pieces, each piece is a great buzz. It takes time to take effect, but after a 45 min 1 hour is very a great trip of 3-4 hours.

javmarfer added 4 days later...

Sorry for not specifying better the recipe. The cannabinoid must be dissolved along with the butter and chocolate, if it is separately mixed only with the butter better. What I do is place the chocolate and butter in the same container, but with chocolate underneath, and the butter on top and put it in the microwave until melted. Then add the cannabinoid sprinkling into liquid butter, I mix without touching the chocolate on the bottom, and then mix it all well.
100mg most be a little too much for people whithout tolerance and experience. I do this recipe for my friends and me, when I make for my self I put only 70mg to 80mg. Like is say it where I live:

"Bon profit" (enjoy your meal)

Post Quality Evaluations:

Thanks for the info/recipe!

AKB-specific recipe! Love it!

Last edited by Phenoxide; 07-06-2013 at 20:36. Reason: doublepost merged

Drug Brownies

- MDMA-CHIMACA (aka MMA-CHIMINACA)
- The unexpected finding: apparently it's not just traditional marijuana which is being used in edibles, as synthetic cannabinoids are used for that purpose too. Other drugs forum users suggested edits to said recipe...

Case - Plants

Miley Cyrus Bong Video Ignites Salvia Opponents, Sales Simultaneously

Published December 13, 2010 | FoxNews.com

Print Email Share Recommend 844 Tweet 78

This is one product a celebrity does not want to be associated with.

But singer Miley Cyrus is now the inadvertent celebrity face of the hallucinogen salvia.

Ever since a video of her smoking a bong packed with salvia was published online Friday, sales of the herbal drug are way up in California, TMZ reports.

According to people TMZ talked to who deal, legally, in salvia divinorum, sales have increased up to three times since Friday.

TMZ spoke with several head shops in the Los Angeles area and they said not only have sales jumped, but many of the customers specifically asked for "the stuff Miley was smoking."

While the "Hannah Montana" star's experimentation is generating curiosity in

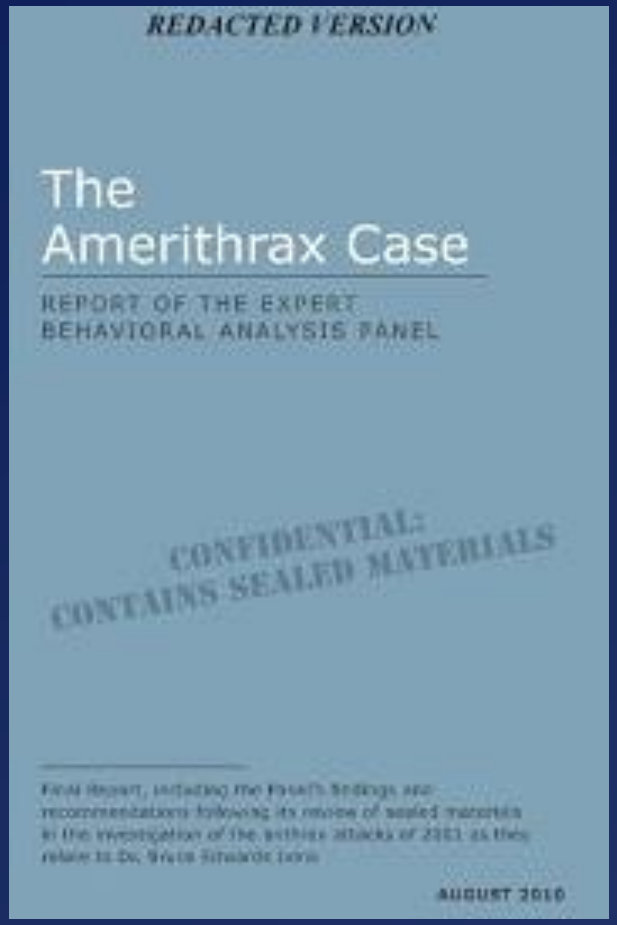
Salvia

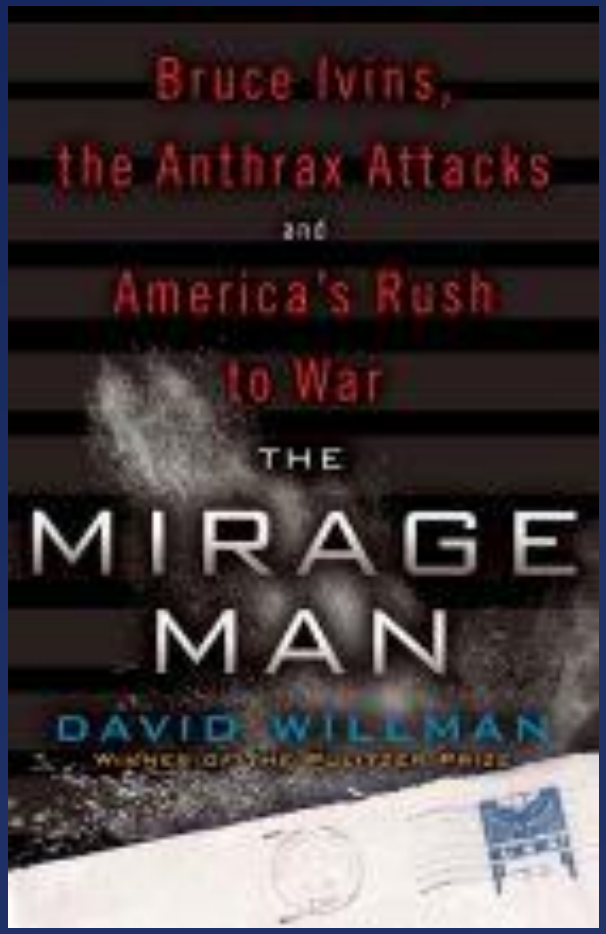
- *Salvia divinorum* is a plant cultivated by the indigenous people for healing rituals.
- Its popularity has grown, especially since the advent of the Internet in the 1990s.
- In 2003, the Drug Enforcement Administration became alerted to the trend and placed *S. divinorum* on its list of drugs of concern.
- On March 2, 2008 the General Assembly of Virginia approved Chapter 59 of the Virginia Acts of Assembly 2008 Session. Chapter 59 is "an act to amend and reenact § 54.1-3446 of the Code of Virginia, relating to inclusion of salvia divinorum and salvinorin A as Schedule I hallucinogenic drugs; penalty." Pursuant to the amended statute and § 18.2-250, the possession of *Salvia divinorum* or salvinorin A is considered a class five felony in the state of Virginia.

Salvia

- Salvinorin A is a selective κ-opioid receptor (KOR) full agonist.
  - Further studies of salvinorin A indicate that this compound has a negligible affinity for receptors that are commonly the targets of psychoactive compounds (μ-, δ and ORL-opioid receptors, σ1 and σ2-sigma receptors, CB-1 and CB-2 cannabinoid receptors, muscarinic and nicotinic cholinergic receptors, serotonin receptors including 5-HT2A receptors and various ionotropic glutamate receptors).
- Salvinorin A has been reported to be the most highly efficacious, naturally-occurring, non-peptide KOR agonist found to date.
- According to the National Survey on Drug Use and Health, sponsored by SAMSHA, an estimated 1.8 million persons aged twelve years or older admitted to using *S. divinorum* in their lifetime. Approximately 750,000 people admitted to having done so per year.
- When ingested, there is limited absorption of salvinorin A and quick degradation in the gastrointestinal tract.
  - To get a more intense high, users of *S. divinorum* typically smoke the leaves.

Rx Drug Abuse





High Times

GUIDE TO BREEDING BETTER BUDS
HIGH TIMES
HIGH TIMES
WILLIE ON WEED
PLUS:
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IN SMALL SPACES
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Internet Highs

http://www.erowid.org

M-Shine scratch remover | Buzz wholesale - Windows Internet Explorer

https://www.buzz-wholesale.com/salts/M-Shine

File Edit View Favorites Tools Help

http://2.bp.blogspot.com/-R... | 3,4-Methylenedioxypyrovale... | M-Shine scratch remover...

Page Tools

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Premium Herbal Highs

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M-Shine

Tags: DEA compliant Party powder

M-Shine new, extremely potent scratch remover 1g with freezing effect.

DEA compliant product, doesn't contain PV or M1.

Mobile phone, digital camera, iPod, PSP or Nintendo displays scratch very easily appearing shabby and unsightly. Only a few manufacturers offer replacement displays, which can be expensive. Buzz-wholesale offers a simple solution for this widespread customer problem. With this new type of special polishing powder, end users have for the first time the possibility of eliminating the scratches in their displays quickly and cost-effectively in a do-it-yourself process. Each 1g bag is enough for around 15 applications. The plastic lens is lightly dissolved and polished with fine abrasive particles. The corners of the scratch traces are rounded off and the fissure bottom filled out with excess lens material.

Add comment

DEA compliant party powder! Contact us for lab analysis report

Does NOT contain: LSD; COCAINE; MDMA; AMPHETAMINE; BZP; 3,4-Methylenedioxymethcathinone (Methylone), 3,4-Methyenedioxypyrovalerone (MDPV), 4-Methylmethcathinone (Mephedrone), 4-methoxymethcathinone (Methedrone), 4-Fluoromethcathinone (4-FMC) and 3-Fluoromethcathinone (3-FMC) and any other banned substances.

Fully legal in: Alabama, Alaska, American Samoa, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Guam, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Marshall Islands, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Northern Marianas Islands, Ohio, Oklahoma, Oregon, Palau, Pennsylvania, Puerto Rico, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virgin Islands, Virginia, Washington, West Virginia, Wisconsin, Wyoming.

» United States

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5 to 9 packs	10 to 24 packs	25 to 49 packs	50 to 99 packs
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Blast	Terms of use
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Kick	Glossary
Rush	

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Urine Drug Screens - UVa

	7/24/2011 1710
DRUG SCREENING	
Amphetamine Scr...	*NEGATIVE*
Barbiturate Scr...	*NEGATIVE*
Benzodiazepine ...	*NEGATIVE*
Cannabinoid Scr...	*NEGATIVE*
Cocaine, Urine	*NEGATIVE*
Ethanol, Ur	*NEGATIVE*
Opiate Scrn, Ur	*NEGATIVE*
PCP Quant, Ur	*NEGATIVE*
Oxycodone Scree...	*NEGATIVE*
Propoxyphene, S...	*NEGATIVE*
Methadone	*NEGATIVE*
Methadone Metab...	*NEGATIVE*
pH	*5.7* *
Specific Gravit...	*1.020*

Epic HYPERSPACE®

Federal Guidelines

decision will set forth the reasons for the decision and describe the basis therefore in the record. Furthermore, the reviewing official may remand the matter to the respondent for such further action as the reviewing official deems appropriate.

(b) *Date of Decision.* The reviewing official will attempt to issue his or her decision within 15 days of the date of the oral presentation, the date on which the transcript is received, or the date of the last submission by either party, whichever is later. If there is no oral presentation, the decision will normally be issued within 15 days of the date of receipt of the last reply brief. Once issued, the reviewing official will immediately communicate the decision to each party.

(c) *Public Notice.* If the suspension and proposed revocation are upheld, the revocation will become effective immediately and the public will be notified by publication of a notice in the **Federal Register**. If the suspension and proposed revocation are denied, the revocation will not take effect and the suspension will be lifted immediately. Public notice will be given by publication in the **Federal Register**.

Section 16.15 Is there a review of the final administrative action?

Before any legal action is filed in court challenging the suspension or proposed revocation, respondent shall exhaust administrative remedies provided under this subpart, unless otherwise provided by Federal Law. The reviewing official's decision, under Section 16.9(e) or 16.14(a) constitutes final agency action and is ripe for judicial review as of the date of the decision.

[FR Doc. 2015–11523 Filed 5–13–15; 4:15 pm]

BILLING CODE 4162–20–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Substance Abuse and Mental Health Services Administration

Mandatory Guidelines for Federal Workplace Drug Testing Programs

AGENCY: Substance Abuse and Mental Health Services Administration (SAMHSA), HHS.

ACTION: Notice of proposed revisions to the mandatory guidelines by the Secretary of Health and Human Services Workplace Drug Testing Programs (Guidelines), 73 FR 71858 (November 25, 2008) for urine testing.

DATES: Submit comments on or before July 14, 2015.

ADDRESSES: In commenting, please refer to file code SAMHSA–2015–0002. Because of staff and resource limitations, SAMHSA cannot accept comments by facsimile (FAX) transmission.

You may submit comments in one of four ways (please choose only one of the ways listed):

- *Electronically.* You may submit electronic comments on this regulation to *http://www.regulations.gov.* Follow "Submit a comment" instructions.
- *By regular mail.* You may mail written comments to the following address ONLY: SAMHSA, Attention Division of Workplace Programs (DWP), 1 Choke Cherry RD., Rm. #7–1045, Rockville, MD 20857. Please allow sufficient time for mailed comments to be received before the close of the comment period.
- *By express or overnight mail.* You may send written comments to the following address ONLY: SAMHSA, Attention DWP, 1 Choke Cherry RD., Rm. #7–1045, Rockville, MD 20850.
- *By hand or courier.* Alternatively, you may deliver (by hand or courier) your written comments ONLY to the following address prior to the close of the comment period: SAMHSA, Attention DWP, 1 Choke Cherry RD., Rm. #7–1045, Rockville, MD 20850. If you intend to deliver your comments to the Rockville address, call telephone number (240) 276–2600 in advance to schedule your arrival with one of our staff members. Because access to the interior of the SAMHSA Building is not readily available to persons without federal government identification, commenters are encouraged to schedule their delivery or to leave comments with the security guard front desk located in the main lobby of the building. Comments erroneously mailed to the address indicated as appropriate for hand or courier delivery may be delayed and received after the comment period.

FOR FURTHER INFORMATION CONTACT: Charles LoDico, M.S., DABFT, Division of Workplace Programs, Center for Substance Abuse Prevention (CSAP), SAMHSA mail to: 1 Choke Cherry Road, Room 7–1045, Rockville, MD 20857.

Executive Summary

This notice of proposed revisions to the Mandatory Guidelines for Federal Workplace Drug Testing Programs (Guidelines) will revise the initial and confirmatory drug test analytes and methods for urine testing, revise the cutoff for reporting a specimen as adulterated based on low pH, revise the requalification requirements for individuals serving as Medical Review Officers (MROs) and, where appropriate, include references to the use of an alternate specimen in federal workplace drug testing programs. References to an alternate specimen are not applicable until final Guidelines are implemented for the use of the alternative specimen matrix. The Department is issuing a separate Notice in the **Federal Register** proposing Mandatory Guidelines for Federal Workplace Drug Testing Programs using Oral Fluid (OFMG) to allow federal agencies to collect and test oral fluid specimens in their workplace drug testing programs.

In particular, these revised Mandatory Guidelines for Federal Workplace Drug Testing Programs using Urine (UrMG) allow federal executive branch agencies to test for additional Schedule II of the Controlled Substances Act prescription medications (*i.e.,* oxycodone, oxymorphone, hydrocodone and hydromorphone) in federal drug-free workplace programs, add methylenedioxyamphetamine (MDA) and methylenedioxyethylamphetamine (MDEA) as initial test analytes, raise the lower pH cutoff from 3 to 4 for identifying specimens as adulterated, require MRO requalification training and re-examination at least every five years after initial MRO certification, and allow federal agencies to authorize collection of an alternate specimen (*e.g.,* oral fluid) when a donor in their program is unable to provide a sufficient amount of urine specimen at the collection site. Many of the proposed wording changes and reorganization of the UrMG were made for clarity, to use current scientific terminology or preferred grammar, and for consistency with the proposed OFMG.

Costs and Benefits

Using data obtained from the Federal Workplace Drug Testing Programs and HHS certified laboratories, the Department estimates the number of specimens tested annually for federal agencies to be 150,000. HHS projects

Quest

http://www.questdiagnostics.com/home/physicians/health-trends/drug-testing

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Illicit Drug Positivity Rate Increases Sharply in Workplace Testing

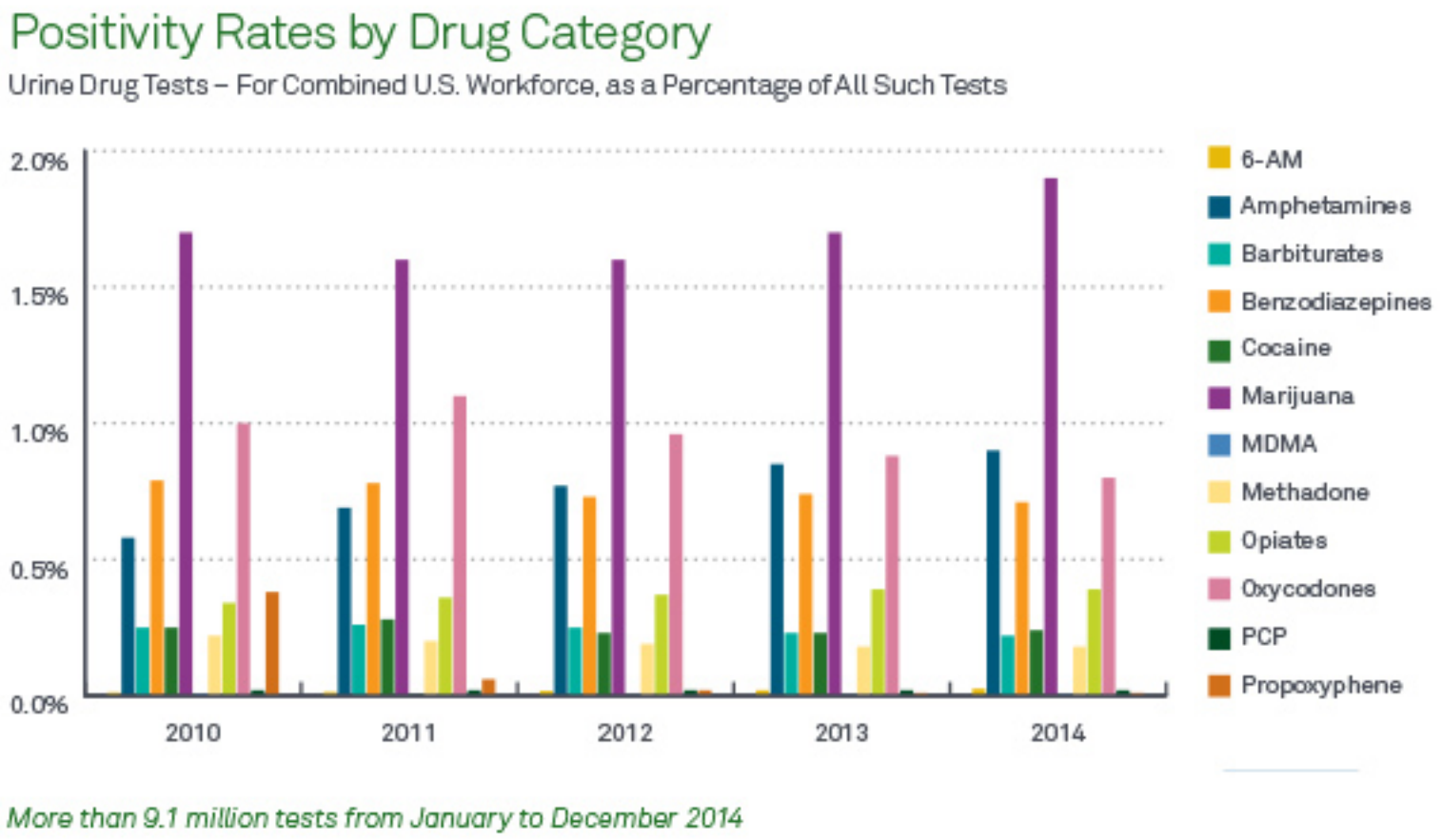
Upsurge in marijuana, cocaine and methamphetamine drive second consecutive year of increases in the positivity rate for drug tests, suggesting a potential reversal in a decades' long decline in workforce drug use

Madison, N.J., June 9, 2015 - The percentage of American workers testing positive for illicit drugs such as marijuana, cocaine and methamphetamine has increased for the second consecutive year in the general U.S. workforce, according to insights from more than 10 million workplace drug test results released today by Quest Diagnostics, the world's leading provider of diagnostic information services. The analysis suggests a potential reversal in the decades' long decline in the abuse of illicit drugs in the United States workforce.

Quest Data – Workplace

- Positivity rate for approximately 6.6 million urine drug tests in the general U.S. workforce increased overall by 9.3 percent, to 4.7 percent in 2014 compared to 4.3 percent in 2013
- 2013 was the first year since 2003 in which the overall positivity rate for urine drug tests increased in the general U.S. workforce

Quest Data – Workplace



Quest Data – Workplace

- Marijuana positivity in the general U.S. workforce increased 14.3 percent (2.4% in 2014 vs. 2.1% in 2013). By comparison, marijuana positivity in the same workforce category increased 5 percent between 2012 and 2013. In the safety-sensitive workforce, marijuana positivity increased 6 percent (0.71% vs. 0.67%) between 2013 and 2014, compared to 5.6 percent between 2012 and 2013.
- In Colorado and Washington, the marijuana positivity rate increased 14 percent (2.62% vs. 2.30%) and 16 percent (2.75% vs. 2.38%), respectively, in the general U.S. workforce between 2013 and 2014, roughly parallel to the national average of 14.3 percent. By comparison, the marijuana positivity rate increased 20 percent and 23 percent in Colorado and Washington, respectively, in the general U.S. workforce between 2012 and 2013, compared to the national average of 5 percent.

Quest Data – Workplace

- The Quest Diagnostics Drug Testing Index analysis showed steady increases in workplace positivity for cocaine in the general U.S. workforce over the past two years, reversing a prolonged period of decline.
- The positivity rate for cocaine in urine tests increased by 9.1 percent (0.24% vs. 0.22%) between 2013 and 2014.

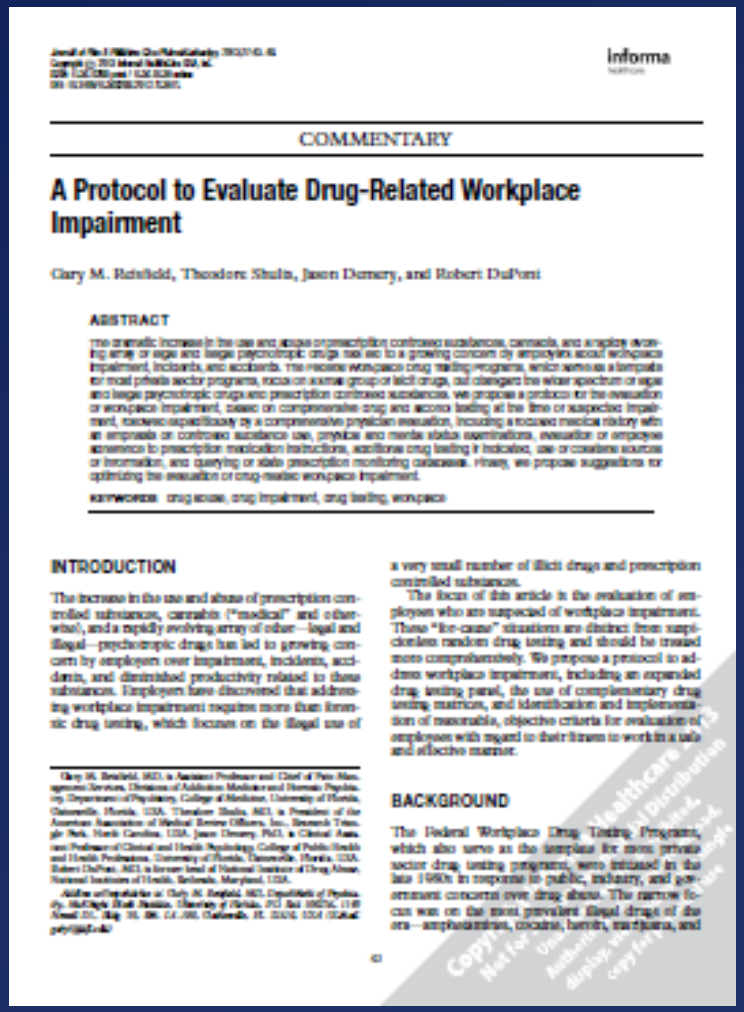
Quest Data – Workplace

- Continuing a multi-year upward trend, amphetamines use – specifically the use of methamphetamine – showed an increase across both urine and oral fluid drug tests.
- General U.S. workforce data in urine drug tests showed a 7.2 percent year-over-year increase in amphetamines positivity in 2014 compared to 2013 (1.04% vs. 0.97%). In the general U.S. workforce, methamphetamine positivity in urine drug tests increased 21.4 percent (0.17% vs. 0.14%); the positivity rate for oral fluid methamphetamine tests increased 37.5 percent (0.33% vs. 0.24%). Across all specimen types, the positivity rate for amphetamines is now at its highest levels on record and the positivity rate for methamphetamine is at its highest level since 2007.
- Amphetamines describe the category, or drug class, that includes both prescription amphetamine drugs like Adderall® and methamphetamine.

Quest Data – Workplace

- The positivity rate for 6-acetylmorphine, or 6-AM, a specific marker for heroin, doubled in the general U.S. workforce between 2011 and 2014 (to 0.031% in 2014 vs. 0.015% in 2011).
-
- “Our DTI data mirrors research from the National Drug Intelligence Center which also shows that heroin use has increased markedly in recent years. While overall prevalence is low, the escalation in the detection of the 6-AM metabolite indicates heroin use may be growing,” said Dr. Barry Sample. “With the high costs associated with prescription opiates, some drug users may be turning to comparatively cheaper alternatives like heroin.”

Journal of Pain & Palliative Care Pharmacotherapy. 2013;27:43–48.



COMMENTARY

A Protocol to Evaluate Drug-Related Workplace Impairment

Gary M. Reisfield, Theodore Shulis, Jason Demery, and Robert DuPont

ABSTRACT

KEYWORDS: drug abuse, drug impairment, drug testing, workplace

INTRODUCTION

BACKGROUND

Clinical Data

- Vital signs
- Nystagmus
- Pupil size
- Speech pattern
- Odor to breath
- Reflexes
- Clonus
- Stability (e.g., ataxia, finger to nose)
- Thought process (e.g., orientation)

Excited Delirium

Excited Delirium

The Journal of Emergency Medicine (2011) 1-9

ELSEVIER

The Journal of Emergency Medicine, Vol. ■, No. ■, pp. 1–9, 2011
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0736-4679/$ - see front matter

doi:10.1016/j.jemermed.2011.02.017

Clinical Reviews

EXCITED DELIRIUM SYNDROME (EXDS): DEFINING BASED ON A REVIEW OF THE LITERATURE

Gary M. Vilke, MD,* Mark L. DeBard, MD,† Theodore C. Chan, MD,* Jeffrey D. Ho, MD,‡ Donald M. Dawes, MD,§| Christine Hall, MD, MSC,¶** Michael D. Curtis, MD,††‡‡ Melissa Wysong Costello, MD,§§ Deborah C. Mash, PHD,|| Stewart R. Coffman, MD,¶¶ Mary Jo McMullen, MD,*** Jeffery C. Metzger, MD,††† James R. Roberts, MD,‡‡‡ Matthew D. Sztajnkrcer, MD, PHD,§§§ Sean O. Henderson, MD,||| Jason Adler, MD,¶¶¶ Fabrice Czarnecki, MD, MA, MPH,**** Joseph Heck, DO,†††† and William P. Bozeman, MD‡‡‡‡

*University of California at San Diego Medical Center, San Diego, California, †Ohio State University College of Medicine, Columbus, Ohio, ‡Hennepin Co. Medical Center/University of Minnesota, Minneapolis, Minnesota, §University of Louisville, Louisville, Kentucky, |Lompoc Valley Medical Center, Lompoc, California, ¶University of British Columbia Victoria, British Columbia Canada, **University of Calgary, Calgary, Alberta Canada, ††St. Michael's Hospital, Stevens Point, Wisconsin, ‡‡St. Clare's Hospital, Weston, Wisconsin, §§University of South Alabama, Mobile, Alabama, ||University of Miami, Miami, Florida, ¶¶University of Texas, SW Dallas, Lewisville, Texas, ***Northeastern Ohio University College of Medicine, Akron, Ohio, †††University of Texas, Southwestern Medical Center, Dallas, Texas, ‡‡‡Drexel University College of Medicine, Mercy Catholic Medical Center, Philadelphia, Pennsylvania, §§§Mayo School of Medicine, Rochester, Minnesota, |||Keck School of Medicine of the University of Southern California, Los Angeles, California, ¶¶¶University of Maryland, Baltimore, Maryland, ****St. Joseph Medical Center, Towson, Maryland, ††††Touro University – Nevada, Henderson, Nevada, and ‡‡‡‡Wake Forest University, Winston Salem, North Carolina

Reprint Address: Gary M. Vilke, MD, Department of Emergency Medicine, UC San Diego Medical Center, 200 West Arbor Drive, Mail code #8676, San Diego, CA 92103

Excited Delirium

Forensic Sci Med Pathol (2014) 10:223–228

Forensic Sci Med Pathol (2014) 10:223–228
DOI 10.1007/s12024-014-9530-2

REVIEW

The syndrome of excited delirium

James R. Gill

Accepted: 6 January 2014/Published online: 14 February 2014
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Abstract The excited delirium syndrome (EDS) is a life-threatening condition caused by a variety of factors including drug intoxication and psychiatric illness. Fatal instances of excited delirium frequently come to the attention of the medical examiner/coroner due to the circumstances and potential causes. Excited delirium may include paranoid, aggressive, and incoherent behavior which may lead to an encounter with law enforcement. In some instances, the person may die while in the presence of law enforcement. This circumstance further broadens the

Keywords Forensic pathology · Agitated delirium · Excited delirium · Cocaine psychosis · Restraint

Introduction

There has been debate in medicine as to how to characterize the syndrome of excited (or agitated) delirium and if it even exists [1–7]. In 2009, the American College of Emergency Physicians issued a white paper on the excited

Excited Delirium

Definition:

- The term ‘‘Excited Delirium’’ has been used to refer to a subcategory of delirium that has primarily been described in the forensic literature. It has also been referred to as ‘‘Agitated Delirium’’ and is closely associated with the ‘‘Sudden Death in Custody Syndrome.’’
- Originally, the concept of excited delirium was described in the forensic literature and has been synonymous with death, but over time the term has made its way into the emergency medicine, psychiatric, law enforcement, prehospital, and medicolegal literature.
- It has generally been used to describe patients displaying altered mental status with severe agitation and combative or assaultive behavior that has eluded a unifying, prospective clinical definition.
- There has been debate in medicine as to how to characterize it and if it even exists.

Excited Delirium

- The difficulty surrounding the clinical identification of ExDS is that the spectrum of behaviors and signs overlap with many other clinical disease processes.
- Treatment interventions targeting these alternate diagnoses (e.g., acute hypoglycemia) may potentially alleviate the clinical presentation of the ExDS.
- Faced with the lack of a clear definition and cause, as well as the infrequency of events such that individual practitioners are unlikely to encounter large numbers of cases, the decision to identify ExDS as a syndrome instead of a unique disease has been delayed, similar to the controversy over Sudden Infant Death Syndrome.

Excited Delirium

- Because ExDS does not currently have a known specific etiology or a consistent single anatomic feature, it can only be described by its epidemiology, commonly described clinical presentation, and usual course. The minimum features for ExDS to be considered include the presence of both delirium and an excited or agitated state.
- Due to varied underlying medical conditions that may generate ExDS, there is also variation in the specific symptom cluster. As in any disorder that affects mental status, there is no assumption that each subject's presentation will have the same clinical presentation; however, all patients with ExDS present delirious with evidence of psychomotor and physiologic excitation.

Table 2. ExDS Features by Literature Review (n = 18)

	No. Articles
Features in history	
Male gender	16
Mean age ~30s	16
Sudden onset	4
History of mental illness	8
History of psychostimulant abuse	11
Features evident at scene	
Call for disturbance/psychomotor agitation/excitation	18
Violent/combative/belligerent/assault call	11
Not responding to authorities/verbal commands	1
Psychosis/delusional/paranoid/fearful	13
Yelling/shouting/guttural sounds	7
Disrobing/inappropriate clothing	5
Violence toward/destruction of inanimate objects	7
Walking/running in traffic	3
Subject obese	5
Features evident on contact	
Significant resistance to physical restraint	11
Superhuman strength	8
Impervious to pain	3
Continued struggle despite restraint	7
Profuse sweating/clammy skin	3
Features with clinical assessment	
Tachypnea	1
Tachycardia	7
Hyperthermia	12
Hypertension	3
Acidosis	3
Rhabdomyolysis	5
Features of death	
Period of tranquility/"giving up"	4
Sudden collapse after restraint	12
Respiratory arrest described	5
Cardiac rhythm brady-asystole or PEA	4
Aggressive resuscitation unsuccessful	5
Features on autopsy	
Drug screen positive for psychostimulants	9
Drug levels lower than anticipated	3
No anatomic correlate for death	6
Dopamine transporter dysregulation	2

Treatment

Clin Pharmacol Therap 1961;2:220-9

Therapeutic trends in the treatment of barbiturate poisoning

The Scandinavian method

The "Scandinavian method" of treating barbiturate poisoning is presented. As a result of close and constant attention to the support of vital function (the cardiovascular system, respiration, renal function, electrolyte homeostasis) and the prevention of infection, the mortality rate from barbiturate poisoning in our clinics has been brought down to 1.5 per cent whereas previously it was over 10 per cent. The details of this method, the history of its development, and the basis of its use are explained.

Carl Clemmesen and Eric Nilsson *Copenhagen, Denmark, and Lund, Sweden*
Psychiatric Department, Bispebjergs Hospital, Copenhagen, and University Hospital, Lund

The present review of the treatment of barbiturate poisoning does not embrace the world-wide literature on this subject. A review of this sort should perhaps have such a background, but the countless articles

tion of this department will be referred to later.

Rising incidence

Barbiturate poisoning and its treatment

Treatment

Treatment

HALOPERIDOL
INJECTION, USP
(For Immediate Release)
5 mg/mL
For Intramuscular Use
10 mL Multiple Dose Vial
HALOPERIDOL

Ketamine HCl
Injection, USP
500 mg per 10 mL*
(50 mg/mL)

Clinical Toxicology (2014), **Early Online:** 1–6
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DOI: 10.3109/15563650.2014.913175

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healthcare

ORIGINAL ARTICLE

Evaluation of dexmedetomidine therapy for sedation in patients with toxicological events at an academic medical center

P. L. MOHORN,[1]* J. P. VAKKALANKA,[2] W. RUSHTON,[2] L. HARDISON,[2] A. WOLOSZYN,[3] C. HOLSTEGE,[2] and S. M. CORBETT[3]

[1]*Department of Clinical Pharmacy and Outcomes Sciences, South Carolina College of Pharmacy, University of South Carolina, Columbia, SC, USA*
[2]*Division of Medical Toxicology, Department of Emergency Medicine, University of Virginia Health System, Charlottesville, VA, USA*
[3]*Department of Pharmacy Services, University of Virginia Health System, Charlottesville, VA, USA*

Introduction. Although clinical use of dexmedetomidine (DEX), an alpha$_2$-adrenergic receptor agonist, has increased, its role in patients admitted to intensive care units secondary to toxicological sequelae has not been well established. *Objectives.* The primary objective of this study was to describe clinical and adverse effects observed in poisoned patients receiving DEX for sedation. *Methods.* This was an

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Diagnostics

Electrocardiographic abnormalities associated with poisoning

Christopher Delk MD[a,*], Christopher P. Holstege MD[a,b], William J. Brady MD[a]

[a]*Department of Emergency Medicine, University of Virginia, Charlottesville, VA 22911, USA*
[b]*Division of Medical Toxicology, Department of Emergency Medicine, University of Virginia, Charlottesville, VA 22911, USA*

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Abstract This article will review the cardiovascular toxicities of various medications, stressing the electrocardiographic presentation—both rhythm and morphological issues—and emphasizing recognition and management issues. Cardiovascular toxins are grouped into categories causing similar electrocardiographic effects, including the potassium efflux blockers, sodium channel blockers, sodium-potassium adenosine triphosphatase blockers (ie, digitalis compounds), calcium channel blockers, and β-adrenergic blockers. This article reviews the various electrocardiographic abnormalities associated with these 5 classes of agents, ranging from morphological abnormalities and conduction blocks to brady- and tachyarrhythmias.
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1. Introduction

The emergency physician frequently evaluates the poisoned patient. Each year, more than 2 million human exposure cases are reported to poison centers in the United States [1]. Of these, one fifth presented to the emergency department (ED) for evaluation. Among these poisoned patients, cardiovascular medications represented the 15 most frequently encountered drug category and the fifth leading cause of poisoning deaths; furthermore, if one adds the noncardiovascular agents such as antidepressants, antipsychotics, and antihistamines—noncardiovascular medications with potential cardiovascular effect—to this list of frequent offending drugs, the frequency of cardiovascular poisoning events only increases.

Numerous authorities have studied electrocardiographic (ECG) changes encountered in patients with specific toxicity. For example, multiple reports have been published describing the ECG changes encountered in either tricyclic antidepressant (TCA) poisoning or digoxin exposure. Little clinical information, however, is found in the literature to address the general use of the ECG in the poisoned patient. A study [2] of the ECG in the poisoned patient revealed that the ECG is, in fact, frequently abnormal in the poisoned patient. In this study, it was noted that approximately 70% of patients demonstrated an abnormal ECG; of the abnormal findings, 62% had a rhythm abnormality, whereas 38% had morphological abnormality. Rhythm disturbances included sinus tachycardia (51%), sinus bradycardia (7%), atrioventricular (AV) block (7%), nonsinus atrial tachycardia (3%), and nodal bradycardia (3%); morphological abnormality included abnormal QRS configuration (35%), QRS complex widening (33%), QT interval prolongation (33%), PR interval prolongation

* Corresponding author.
E-mail address: ch2cd@virginia.edu (C. Delk).

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Sodium Channel Blockers

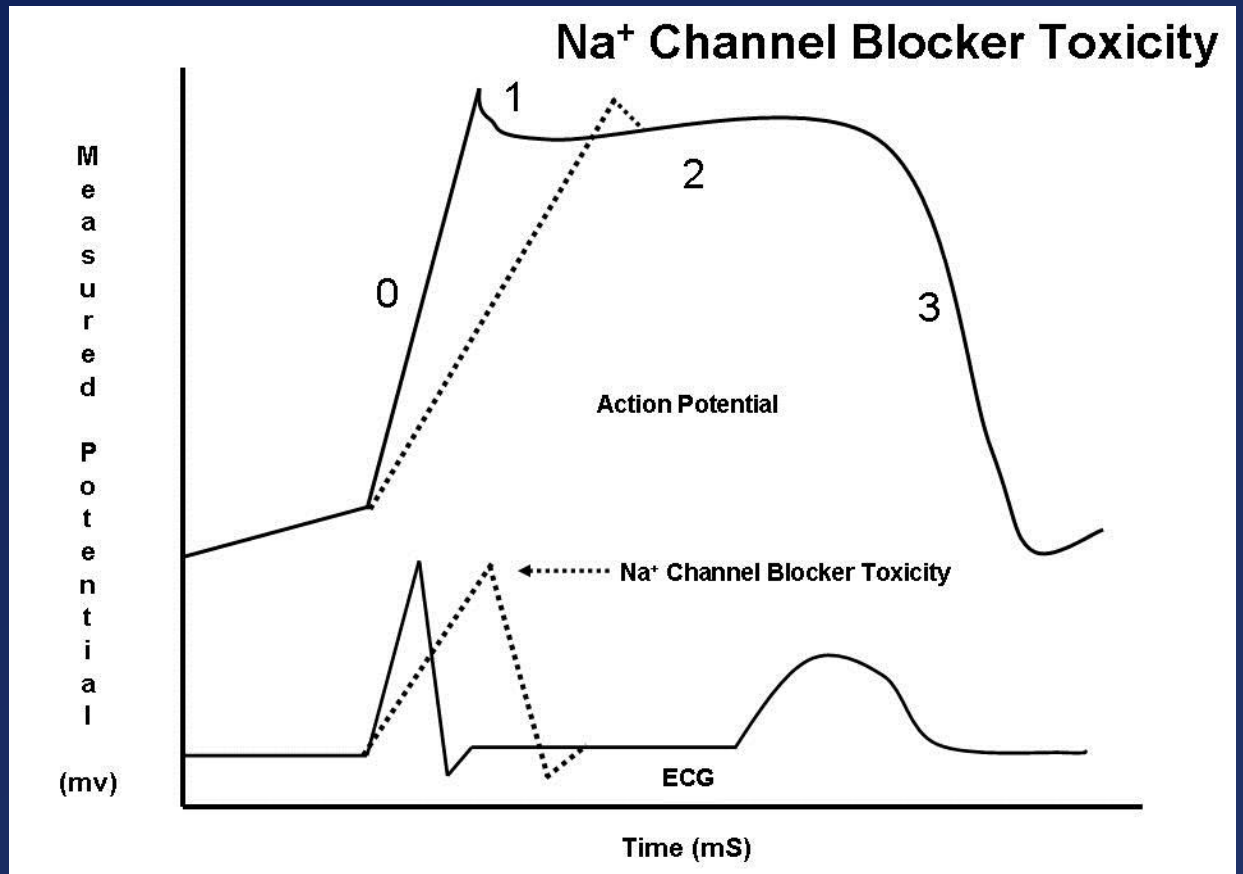


Fig 11

Sodium Channel Blockers

- Amantadine
- Carbamazepine
- Chloroquine
- Class IA antiarrhythmics
  - Disopyramide
  - Quinidine
  - Procainamide
- Class IC antiarrhythmics
  - Encainide
  - Flecainide
  - Propafenone
- Propafenone
- Citalopram
- Cocaine
- Cyclic Antidepressants
  - Amitriptyline
  - Amoxapine
  - Desipramine
  - Doxepin
  - Imipramine
  - Nortriptyline
  - Maprotiline
- Diltiazem
- Diphenhydramine
- Hydroxychloroquine
- Loxapine
- Orphenadrine
- Phenothiazines
  - Medoridazine
  - Thioridazine
- Propranolol
- Propoxyphene
- Quinine
- Verapamil

Potassium Efflux Channel Blockers

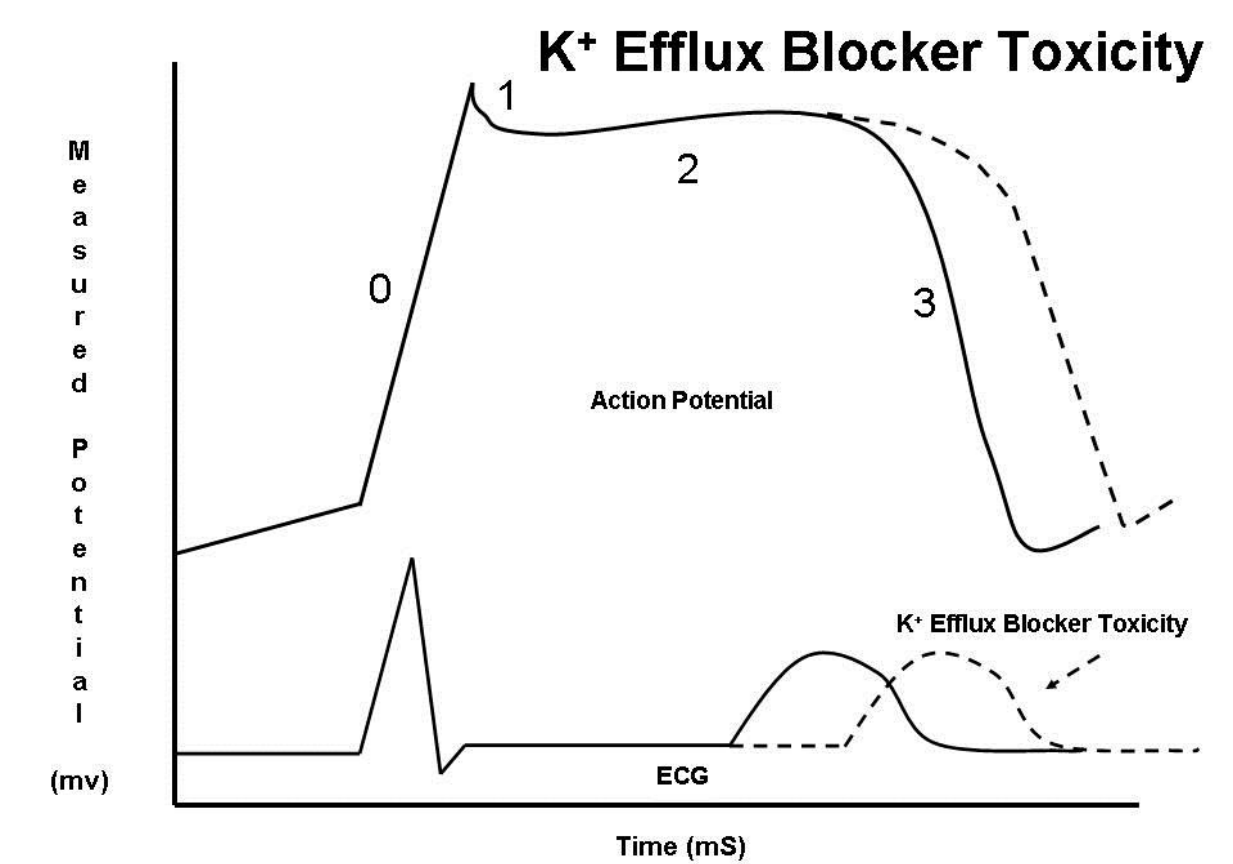


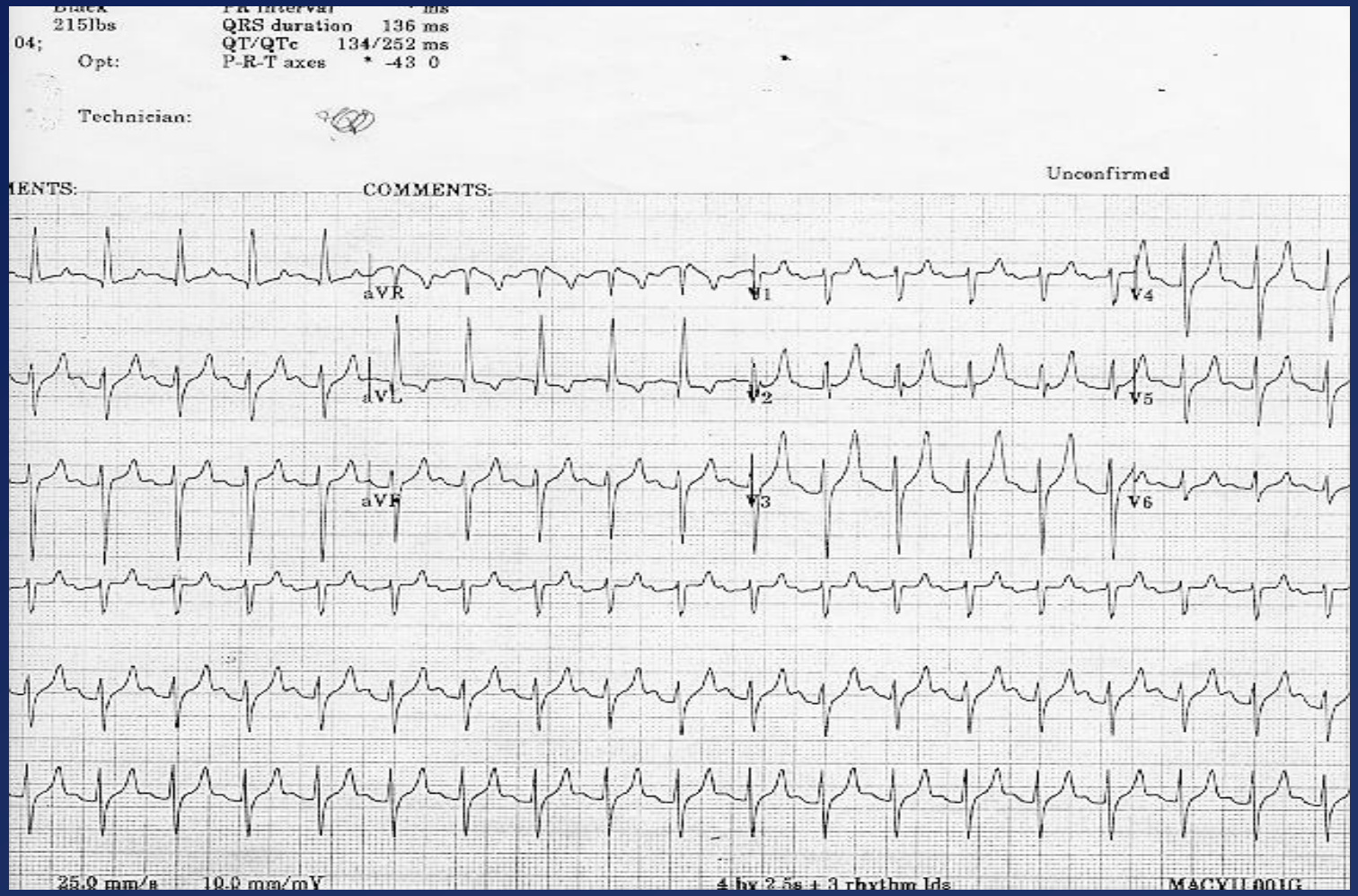
Fig 9

Potassium Efflux Channel Blockers

- Antihistamines
  - Astemizole
  - Clarithromycin
  - Diphenhydramine
  - Loratidine
  - Terfenadine
- Antipsychotics
  - Chlorpromazine
  - Droperidol
  - Mesoridazine
  - Pimozide
  - Quetiapine
  - Risperidone
  - Thioridazine
  - Ziprasidone
- Arsenic trioxide
- Bepridil
- Chloroquine
- Cisapride
- Citalopram
- Clarithromycin
- Class IA antiarrhythmics
  - Disopyramide
  - Quinidine
  - Procainamide
- Class IC antiarrhythmics
  - Encainide
  - Flecainide
  - Moricizine
  - Propafenone
- Class III antiarrhythmics
  - Amiodarone
  - Dofetilide
  - Ibutilide
  - Sotalol
- Cyclic Antidepressants
- Erythomycin
- Fluoroquinolones
- Halofantrine
- Hydroxychloroquine
- Methadone
- Pentamidine
- Quinine
- Venlafaxine

Case

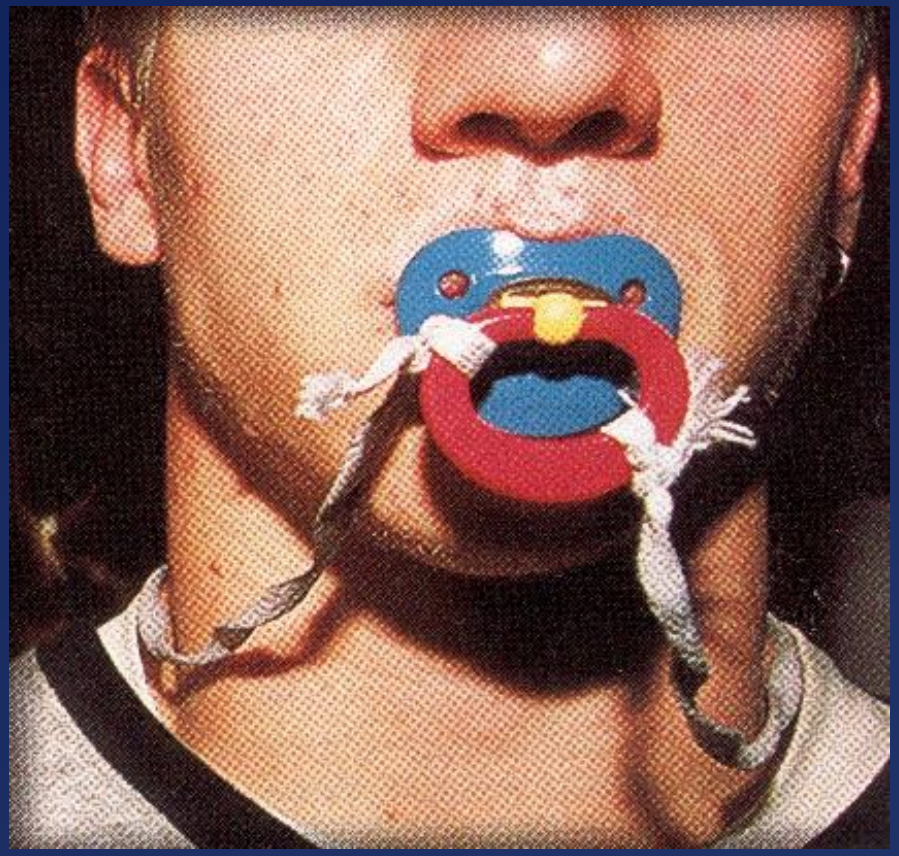
Case


215lbs
QRS duration 136 ms
QT/QTc 134/252 ms
P-R-T axes * -43 0
Opt:
Technician:
COMMENTS:
Unconfirmed
aVR
V1
V4
aVL
V2
V5
aVF
V3
V6
25.0 mm/s
10.0 mm/mV

Case

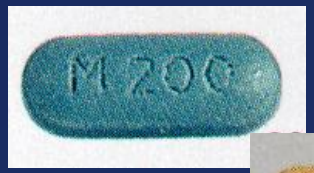
Recent items

Case



CASE

Case



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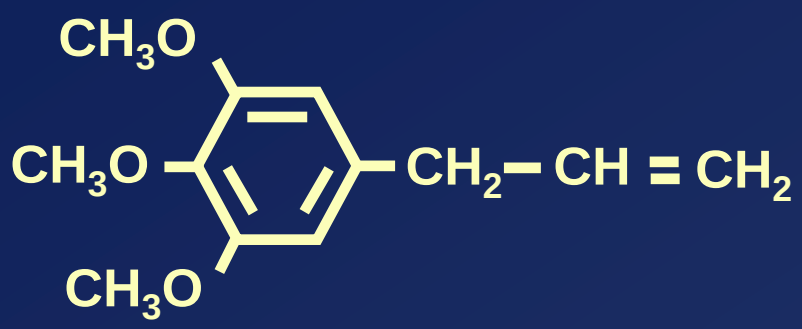
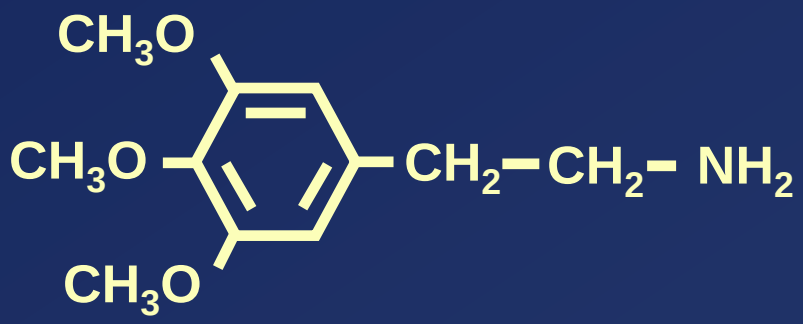


Elemicin

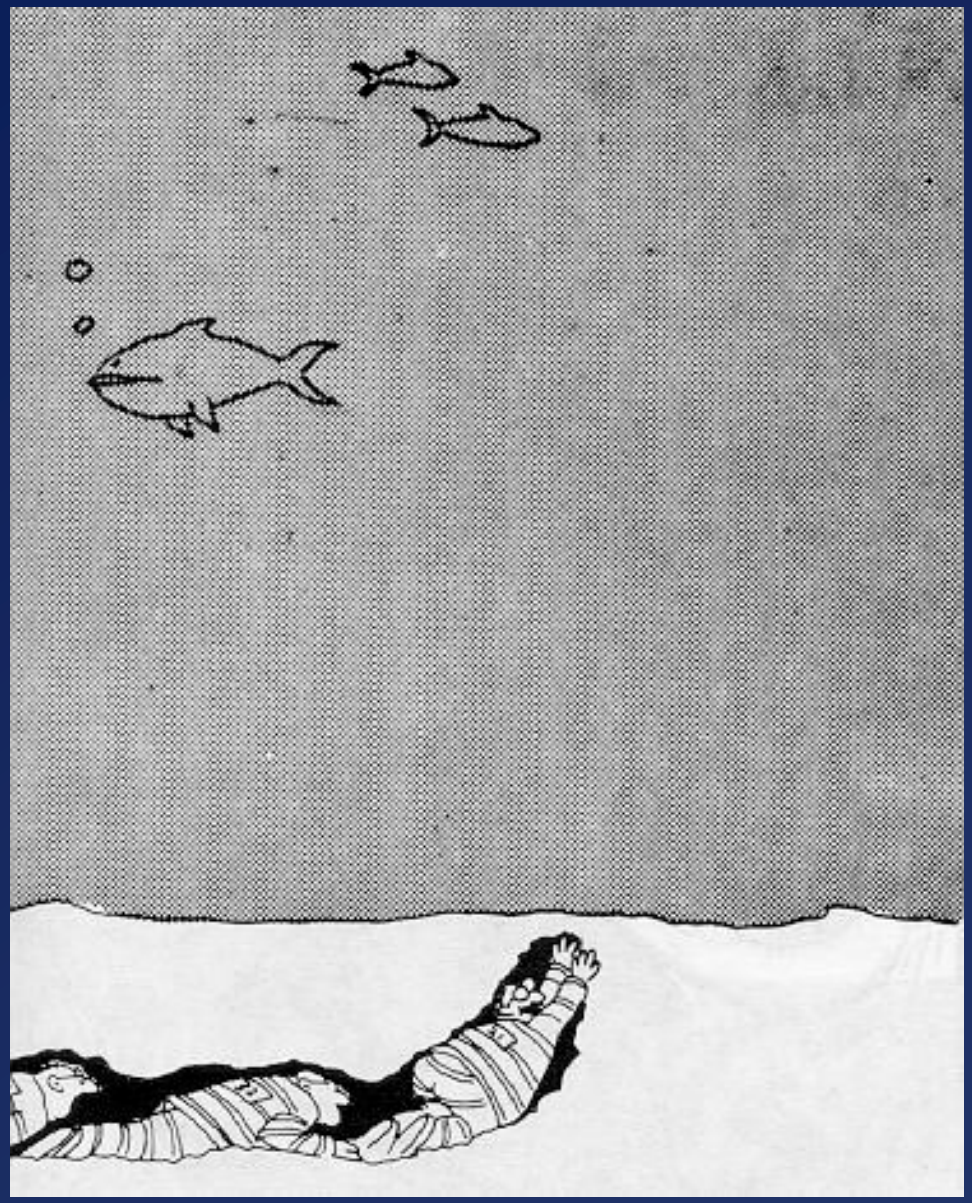


Mescaline

Case

- Paper blotter
- Microdots
- Geltabs

- Ipomea purpora
- Ipomea violacea
- Rivea corymbosa



“We’re almost free, everyone!... I just felt the first drop of rain.”