Drug Abuse Patterns/Trends: Now and Future Directions

Minnesota TZD - Mankato
October 23, 2018

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Why?

To feel good
To feel better
Past month substance use
United States
(age 12 and older)

millions

<table>
<thead>
<tr>
<th>Substance</th>
<th>Millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Alcohol</td>
<td>136.7</td>
</tr>
<tr>
<td>Binge</td>
<td>65.3</td>
</tr>
<tr>
<td>Heavy</td>
<td>16.3</td>
</tr>
<tr>
<td>ILLICIT DRUGS</td>
<td>28.6</td>
</tr>
</tbody>
</table>

SOURCE: 2016 NSDUH, SAMHSA.

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Marijuana

111 million Americans have used it
24 million current users (2016)
8.1 million daily users (2013)
7,000 new initiates/day (2016)

SOURCE: National Survey on Drug Use and Health, SAMHSA.
First drug associated with initiation of illicit drug use among past year illicit drug initiates (age 12 and older)

2.8 Million Initiates of Illicit Drugs


12th graders reporting lifetime use:

61.2% alcohol (46.3% drunk)

44.5% marijuana

18% any Rx drug

Adverse Health Effects of Marijuana Use

Nora D. Volkow, M.D., Ruben D. Baler, Ph.D., Wilson M. Compton, M.D., and Susan R.B. Weiss, Ph.D.

DOI: 10.1056/NEJMra1402309

Effects of short-term MJ use

- Impaired short-term memory (making it difficult to learn and retain information)
- Impaired motor coordination (heightening risk of injury and accidents)
- Altered judgment
- In high doses, paranoia and psychosis
Effects of long-term or heavy MJ use

- Addiction*
- Altered brain development*
- Poor educational outcome* (increased drop-out risk)
- Cognitive impairment* (lower IQ function among frequent adolescent users)
- Diminished life satisfaction and achievement*
- Symptoms of chronic bronchitis
- Increased risk of chronic psychotic disorders (including schizophrenia) in predisposed individuals

* the effect is strongly associated with initial MJ use in early adolescence

Marijuana and alcohol availability

% saying it is “fairly easy” or “very easy” to get

<table>
<thead>
<tr>
<th>Grade</th>
<th>% of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>8th graders</td>
<td>36.9</td>
</tr>
<tr>
<td>10th graders</td>
<td>66.9</td>
</tr>
<tr>
<td>12th graders</td>
<td>81.3</td>
</tr>
</tbody>
</table>

Synthetic THC products
a.k.a. synthetic cannabinoids

Man-made mood altering chemicals similar to those found in plant MJ. They are smoked as joints or oils using electronic cigarettes or vaping devices.

Often portrayed as a “safe” alternatives to plant-based MJ

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Synthetic THC products

Anxiety attacks
Agitation
Elevated heart rates
Elevated blood pressure
Vomiting, paranoia
Hallucinations
Kidney failure
Hearts attacks
Breathing problems
Seizures
At least 60 overdosed on synthetic marijuana last week in Minneapolis

It's the biggest toll since 2015, said one official, and left users with hallucinations, violent behavior, or nearly comatose.

By Libor Jany, Star Tribune
October 9, 2017

Synthetic Cannabinoid Calls to U.S. Poison Centers (1/1 - 9/30/2018)

Please note: These data are only a representation of calls received by the poison centers and may not reflect the actual severity of the problem in the U.S. or any specific geographic location.

As face-to-face and emergency room visits, there may be emergency room presentations and hospital admissions of which poison centers are unaware.
Marijuana Wax and Dab

Medical Marijuana
31 states and Washington D.C.
Clinical conditions with symptoms that may be relieved by MJ/cannabinoids:

- Epilepsy
- Glaucoma
- Nausea
- Multiple Sclerosis
- AIDS associated wasting syndrome
- Chronic pain
- Inflammation

MINNESOTA Med Cannabis

Qualifying conditions:

- Cancer associated with severe/chronic pain, nausea or severe vomiting
- Glaucoma.
- HIV/AIDS
- Tourette Syndrome
- Amyotrophic Lateral Sclerosis (ALS)
- Seizures, including those characteristic of Epilepsy
- Severe and persistent muscle spasms, Multiple Sclerosis
- Inflammatory bowel disease, CUC, Crohn’s disease
- Terminal illness, life expectancy of less than one year*
- Intractable Pain
- Post-Traumatic Stress Disorder
- Autism
- Obstructive Sleep Apnea
MINNESOTA Med Marijuana

Qualifying conditions:

- Intractable pain

<table>
<thead>
<tr>
<th>Type</th>
<th>Number in favor</th>
<th>Number opposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential patients</td>
<td>205</td>
<td>0</td>
</tr>
<tr>
<td>All other commenters'</td>
<td>112</td>
<td>9</td>
</tr>
<tr>
<td>Caregivers, family and friends</td>
<td>58</td>
<td>0</td>
</tr>
<tr>
<td>Health care providers</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Certified patient</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>388</strong></td>
<td><strong>15</strong></td>
</tr>
<tr>
<td><strong>Percent</strong></td>
<td><strong>93.0</strong></td>
<td><strong>3.6</strong></td>
</tr>
</tbody>
</table>

MINNESOTA Med Cannabis

Qualifying conditions:

- Obstructive Sleep Apnea

The American Academy of Sleep Medicine in April 2018 position statement:

“... medical cannabis and/or its synthetic extracts should not be used for the treatment of OSA due to unreliable delivery methods and insufficient evidence of effectiveness, tolerability, and safety.”
MINNESOTA Med Cannabis
Qualifying conditions for discussion in October 2018

- Hepatitis C
- Juvenile rheumatoid arthritis
- Psoriasis
- Traumatic brain injury
- Alzheimer's disease
- Panic disorder
- Opioid use disorder

Marijuana
Legal recreational use:

Colorado                California
Washington             Massachusetts
Oregon                   Nevada
Alaska                        Maine
Vermont                        Washington D.C.

Marijuana
Legal recreational use: CANADA

Justin Trudeau  @JustinTrudeau
It’s been too easy for our kids to get marijuana - and for criminals to reap the profits. Today, we change that. Our plan to legalize & regulate marijuana just passed the Senate. #PromiseKept
7:11 PM - Jun 19, 2018
50.8K replies
16.2K people are talking about this
64% of Americans think MJ should be legalized

METHAMPHETAMINES

- Changes in brain function and structure
- Memory loss
- Mood swings
- Psychosis and paranoia
- Serious dental problems
- Extreme weight loss
Southwest border seizures of methamphetamine: 2011 - 2016

Methamphetamine seizures by southwest border corridor in 2016 with percent change from 2015


Addiction Treatment Admissions by Primary Substance:
Minnesota 1995 - 2017

Source: Minnesota Department of Human Services, ADAD, DAANES (6/26/2018)
Minnesota:

Overdoses due to ‘psychostimulants with abuse potential’

The number of overdoses due to psychostimulants with abuse potential, a class of drugs that includes methamphetamine, decreased after it became more difficult to obtain ingredients used to make meth. In recent years, they’ve increased dramatically.

Source: Minnesota Department of Health
Children whose parents abuse alcohol and drugs are:

- 3 times more likely to be physically, verbally or sexually abused
- 4 times more likely than other children to be neglected.

SOURCES: Center for Addiction and Substance Abuse, CASA, Columbia University, 2005, and A Guide for Caring Adults Working with Young People Experiencing Addiction in the Family, Center for Substance Abuse Treatment, SAMHSA.

9 million children live in home where a parent or other adult uses illegal drugs
Children who experience child abuse and neglect are

- 59% more likely to be arrested as a juvenile
- 28% more likely to be arrested as an adult
- 30% more likely to commit a violent crime

SOURCE: childhelp.org

OPIOIDS:

- High abuse potential
- High addictive potential
- High overdose potential

- Opioids can depress breathing by changing neurochemical activity in the brain stem, where automatic body functions such as breathing and heart rate are controlled.
- Opioids can increase feelings of pleasure by altering activity in the limbic system, which controls emotions.
- Opioids can block pain messages transmitted through the spinal cord from the body.
prescriptions for opioid pain medication were written by healthcare providers in 2013

enough prescriptions were written for every American adult to have a bottle of pills

1 Includes overdose deaths related to methadone but does not include overdose deaths related to other synthetic prescription opioids such as fentanyl.
2 National Survey on Drug Use and Health (NSDUH), 2014

Some states have more painkiller prescriptions per person than others.

Number of painkiller prescriptions per 100 people
- 52-71
- 72-82.1
- 82.2-95
- 96-143

SOURCE: IMS, National Prescription Audit (NPA), 2012.
Prescription painkillers sold in Minnesota


Hallmarks of addiction include: a pronounced craving for the drug, obsessive thinking about the drug, erosion of inhibitory control over efforts to refrain from drug use, and compulsive drug taking (DSM-5).
Most people who need specialized treatment for a drug or alcohol problem do not receive it.

Comparison of relapse rates: Addiction vs. other chronic illnesses

Effective medications for opioid use disorders:
- Suboxone
- Methadone
- Extended release naltrexone (Vivitrol)

World Health Organization: “essential medicines”
Reduce craving, withdrawal. Restore balance to brain circuits affected by addiction.

They decrease opioid use, opioid overdose deaths, criminal activity, and infectious disease transmission, and increase social functioning, and Tx retention.


MAT is NOT widely used

2008
35% of opioid Tx programs used medications

2012
28% of opioid Tx programs used medications

Rx Opioid Abuse

How’d we get here?

- Awash in pills
- Expanded use of opioids for long-term treatment of chronic pain
- DTC advertising of Rx drugs
- Inadequate medical education about addiction, pain management, and opioids
- Pain added as 5\textsuperscript{th} vital sign
- Consumer satisfaction surveys tied to doctor payment
- Deceptive marketing practices of pharmaceutical companies


Vol. 302 No. 2

ADDICTION RARE IN PATIENTS TREATED WITH NARCOTICS

To the Editor: Recently, we examined our current files to determine the incidence of narcotic addiction in 39,946 hospitalized medical patients\textsuperscript{1} who were monitored consecutively. Although there were 11,882 patients who received at least one narcotic preparation, there were only four cases of reasonably well documented addiction in patients who had no history of addiction. The addiction was considered major in only one instance. The drugs implicated were meperidine in two patients,\textsuperscript{2} Percodan in one, and hydromorphone in one. We conclude that despite widespread use of narcotic drugs in hospitals, the development of addiction is rare in medical patients with no history of addiction.

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Hershel Jick, M.D.
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Waltham, MA 02154

Boston University Medical Center

1. Jick H, Micciento OS, Shapiro S, Lewis GP, Siskind Y, Slone D.
HEROIN THREAT IN DEA REGIONS, 2017

Drug crisis is pushing up death rates for almost all groups of Americans

Washington Post
June 9, 2017

Total US Drug Deaths
1999 - 2016

Number of injury deaths in United States:
1999 - 2015

Heroin overdose age-adjusted death rate: 2015

Rising opioid-related deaths in Minnesota

Deaths related to opioids:

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>0</td>
</tr>
<tr>
<td>2005</td>
<td>100</td>
</tr>
<tr>
<td>2010</td>
<td>200</td>
</tr>
<tr>
<td>2015</td>
<td>300</td>
</tr>
</tbody>
</table>

Note: 2017 figure is preliminary.

Chart: Eddie Thomas, Star Tribune • Source: Minnesota Department of Health • Get the data • Created with Datawrapper

Opioid-involved drug overdose deaths by non-exclusive drug category, MN residents, 2000-2017

<table>
<thead>
<tr>
<th>Year</th>
<th>All opioid-involved deaths</th>
<th>Other Opioids and Methadone</th>
<th>Synthetic Opioids</th>
<th>Heroin</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2005</td>
<td>100</td>
<td>100</td>
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<td>2010</td>
<td>200</td>
<td>200</td>
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<tr>
<td>2015</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
</tr>
</tbody>
</table>

Note: Data are preliminary and likely to change when finalized. Also the category other opioids and Methadone includes prescription opioids.
Hospital Drug Overdoses Follow Same Trend as Drug Overdose Deaths


**Fentanyl** = It is 50 to 100 times more potent than morphine. It is used medically and prescribed in the form of transdermal patches or lozenges and can be diverted for misuse and abuse.

**Synthetic fentanyl and counterfeit pills**

Counterfeit pharmaceuticals are fake products manufactured illegally in clandestine labs that resemble legitimate pharmaceutical drugs.

These synthetic opioids in tablets and powders dramatically increase the risk of overdose among people using them because their actual ingredients and dosage amounts are unknown.
On the left, a lethal dose of heroin; on the right, a lethal dose of fentanyl.

SOURCE: NEW HAMPSHIRE STATE POLICE FORENSIC LAB

Number of synthetic opioid deaths and fentanyl exhibits:
2004 - 2015

Nationwide the opioid epidemic is killing nearly 200 people/day.

In 2017 almost half of the deaths involved fentanyl.


Number of fentanyl exhibits by state: 2016

CONFIRMED and SUSPECTED CASES of CARFENTANIL, 2016

Law enforcement drug reports for heroin and fentanyl per 100,000 population, by census region* — United States, 2006–2015

Hennepin County and Ramsey County combined drug abuse-related deaths: 2006 - 2016

SOURCE: Hennepin County Medical Examiner and Ramsey County Medical Examiner, 2017.
Appendix D: Heroin and other opiate treatment admissions per 10,000 people and methadone maintenance providers, by county, 2016

Responses to the Opioid Crisis:

- Task Forces – Federal guidelines (2011)
- Public health emergencies
- Tamper resistance formulations
- Rescheduling
- Increased criminal penalties
- State Prescription Monitoring Programs
- Naloxone/Good Samaritan laws
- CDC Guideline for Rxing Opioids for Pain
- Litigation
County attorneys in Minnesota file lawsuits against opioid manufacturers

November 30, 2017

CDC Guideline for Prescribing Opioids for Chronic Pain — United States, 2016

March 18, 2016

Recommendations for the prescribing of opioid pain medication for patients 18 and older in primary care setting that focus on the use of opioids in treating chronic pain (pain lasting longer than 3 months or past the time of normal tissue healing) outside of active cancer treatment, palliative care, and end-of-life care.

https://www.cdc.gov/mmwr/volumes/65/rr/rr6501e1.htm
Clinical practices addressed:

- Determining when to initiate or continue opioids for chronic pain outside of active cancer treatment, palliative care, and end-of-life care
- Opioid selection, dosage, duration, follow-up, and discontinuation
- Assessing risk and addressing harms of opioid use

**Myth:**
Opioids are effective in the treatment of chronic pain

**Reality:**
While evidence supports the short-term effectiveness of opioids, there is insufficient evidence that opioids control chronic pain effectively over the long term, and there is evidence that other treatments can be effective with less harm.
Myth: There is no unsafe dose of opioids as long as opioids are titrated slowly.

Reality: Daily opioid dosages close to or greater than 90MME/day are associated with significant risks and lower dosages are safer.

Myth: The risk of addiction is minimal.

Reality: Up to one quarter of patients receiving prescription opioids long terms in a primary care setting struggles with addiction. Certain risk factors increase susceptibility to opioid-associated harms: history of overdose, history of substance use disorder, higher opioid dosages, or concurrent benzodiazepine use.
Even at low doses, taking an opioid for more than 3 months increases the risk of addiction by **15 times**.

*Average days supply per prescription: 2006 to 2015.*

<table>
<thead>
<tr>
<th>Year</th>
<th>Days Supply</th>
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</thead>
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<tr>
<td>2006</td>
<td>13.3</td>
</tr>
<tr>
<td>2007</td>
<td>13.9</td>
</tr>
<tr>
<td>2008</td>
<td>14.5</td>
</tr>
<tr>
<td>2009</td>
<td>15.0</td>
</tr>
<tr>
<td>2010</td>
<td>15.5</td>
</tr>
<tr>
<td>2011</td>
<td>16.0</td>
</tr>
<tr>
<td>2012</td>
<td>16.4</td>
</tr>
<tr>
<td>2013</td>
<td>16.9</td>
</tr>
<tr>
<td>2014</td>
<td>17.2</td>
</tr>
<tr>
<td>2015</td>
<td>17.7</td>
</tr>
</tbody>
</table>

SOURCE: CDC Vital Signs, July 2017

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**Addressing a drug epidemic:**

- Law enforcement/curtail supply
- Prevention
- Access to evidence-based addiction treatment services
Addressing the **OPIOID** epidemic:

**Changes medical practice:**

- CDC Guideline/Rethink opioid use for chronic pain
- Expand medical education about addiction/pain
- Screening for SUDs
- New pain management tools
- Use of Rx monitoring programs
- Expand access to science-based treatment for opioid addicted patients

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www.drugabusedialogues.com