

The background of the slide features several large, vibrant green leaves with prominent veins, arranged in a flowing, overlapping pattern across the frame. The leaves are set against a solid, medium-grey background.

MARIJUANA & THE EMERGENCY DEPARTMENT

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TODAY'S TALK

- Basic cannabis information
- Concentration
- Products available
- Medical issues related to cannabis.



VERY BASIC
INFORMATION

The 4 Cannabis Varieties



Sativa



Hybrid



Indica



Ruderalis



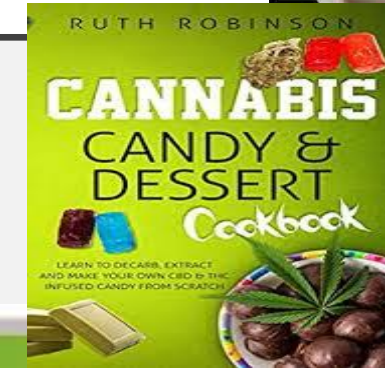
UNDERSTANDING THE CHANGES

- 1) Changes in potency 1990's joint – 1-3 mg THC
- 2) Changes in how the product is used
 - 1) Smoked products
 - 2) Edibles
 - 3) Concentrates
 - 4) Suppositories, injectables, tampons, transdermal, creams, lotions

DAB/WAX/SHATTER



SOME AVAILABLE PRODUCTS



MEDICAL ISSUES

- 1) Local community study
- 2) Cannabinoid induced hyperemesis
- 3) Acute Psychosis
- 4) Vaping and Pulmonary Injuries
- 5) Youth/children issues

COMMUNITY ILLICIT DRUG USE PATTERNS AFTER CANNABIS LEGALIZATION

Background

Amendment 64, which legalized the production, sale, and use of recreational marijuana in Colorado, was implemented statewide on January 1, 2014.

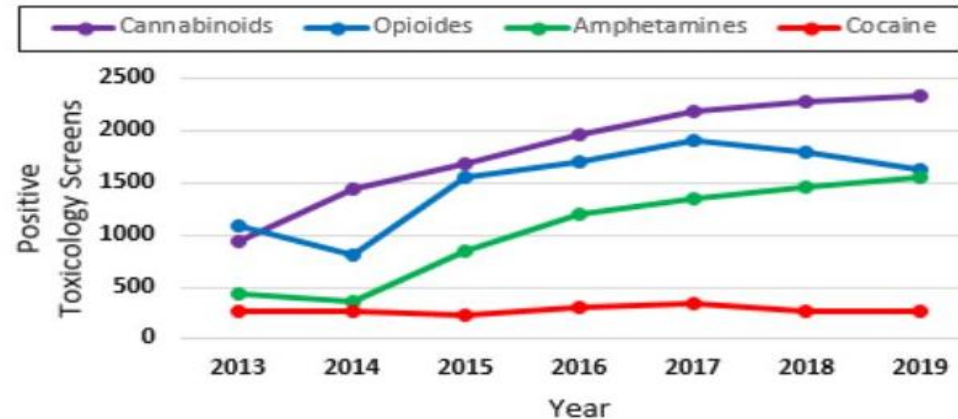
Following cannabis legalization, drug use among patients seeking emergency medical and mental health evaluation in a community has increased for other illicit drug types in addition to cannabinoids.

Objectives

This study aims to examine trends in community illicit drug use before and after legalization of cannabis, such as:

- Types of illicit drugs that are producing positive urine toxicology results
- Emergency department visits for opioid complications
- Emergency department visits for suicidal and homicidal ideation

Positive Toxicology Screens By Drug Type for Patients 21 & Older



Methodology

Urine toxicology reports between 2013, one year before cannabis legalization, and September of 2020 were analyzed for patients 21 and older who presented to a hospital emergency department for:

- Altered mental status
- Psychiatric evaluation
- Trauma

Results

The number of urine toxicology screens that were positive for cannabinoids and/or illicit drugs per toxicology screen performed increased by 14.5% between 2013 and 2020.

A 22% increase in the number of positive urine toxicology tests for opiate metabolites was shown within the first 3 years of cannabis legalization.

Methamphetamine positives nearly quadrupled within the first 5 years and continue to rise through 2020.

The number of patient presentations to the emergency department for suicidal ideation and opioid use complications, such as cellulitis, endocarditis, and overdose has also shown an increase since 2013.

COMMUNITY ILLICIT DRUG USE PATTERNS AFTER CANNABIS LEGALIZATION

Future Directions

- Records from other Colorado emergency departments that predate legalization should be examined to further assess the patterns of drug use leading up to legalization for possible correlations between communal drug use and acceptance as factor to legalization, as data for emergency department toxicology records was limited to 2013 in this study
- Patient charts for emergency department visits should be further examined for trauma patients to assess the relationship between positive urine toxicology reports and the mechanism of injury to analyze possible drug use dependent-causation

Conclusions

The results of this study suggest that legalization of cannabis in Colorado has given rise to illicit drug use in a community over time.

Amphetamine use has specifically become more prevalent among patients presenting for altered mental status, psychiatric evaluation, and trauma. Illicit drug use in these patients has also been connected to increases in suicidal ideation as well as opioid complications.

These findings reinforce the importance of further examination of the potential long-term ramifications to public health that coincide with a shift in communal attitude regarding the general acceptance and normalization of substance use, abuse, and dependence.

CANNABINOID HYPEREMESIS SYNDROME

- Most likely to develop in chronic users of cannabis.
- Seen with both THC and CBD
- Symptoms – loud vomiting, commonly called “scromitting”, repeated and persistent bouts of vomiting. Can be associated with renal failure, electrolyte abnormalities, etc.
- Deaths have been reported.
- True and only sustained treatment is cessation of cannabis use.



COST OF HYPEREMESIS

- ED visit with iv medications, fluids, physician evaluation and +/- radiographic studies (CT scan, plain films) – costs about 5-6 K US dollars.
 - Our ED is seeing at least one/day
 - Our hospital cost for a year is over 1.8 million dollars (on the low estimated side). There are 25 ED in Colorado.
 - Recent study in the J of Addict by Zimmer et al, shows that the average cost to diagnose CHS is 76,920 (includes CT scans, testing, endoscopy)*
 - Note none of the above costs include actual hospitalization
 - Recent article reviewed – increasing pediatric cases.
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- *Zimmer D, McCauley R, et al Emergency Department and Radiological Cost of Delayed Diagnosis of Cannabinoid Hyperemesis. J Addict. 2019; 2019: 1307345



ACUTE PSYCHOSIS

- Impact of Cannabis Use on the Development of Psychotic Disorders.
- Shows that there are 3 distinct relationships
 - Acute psychosis associated with acute intoxication
 - Acute psychosis that lasts beyond the period of acute intoxication.
 - Persistent psychosis not time limited to cannabis exposure.
- Brief cases to follow
- Wilkinson ST, Radhakrishnan R, D'souza DC. Impact of Cannabis Use on the Development of Psychotic Disorders Curr Addict. 2011 Jun 1; 1(2): 115-128. doi: 10.1007/540429-014-0018-7

ACUTE INTOXICATION & PSYCHOSIS

- This is now being seen frequently in the ED.
- Oldest patient – 72 y/o female visiting from the east coast. She ingests edible THC and presents to the ED acutely psychotic – requiring sedation and prolonged observation
- Youngest - 12 y/o who obtained **500 mg THC** candy from a social media source and shared it with her friend.





VAPING INJURIES

- Just before the COVID outbreak, here in the US, there was a significant increase in the number of young people presenting with significant pulmonary injury. There have been those who have required lung transplantation.
- Associated with vaping. Over 80% of cases were associated with vaping cannabis products – dab, wax, shatter. These cases are still occurring.

YOUTH ISSUES

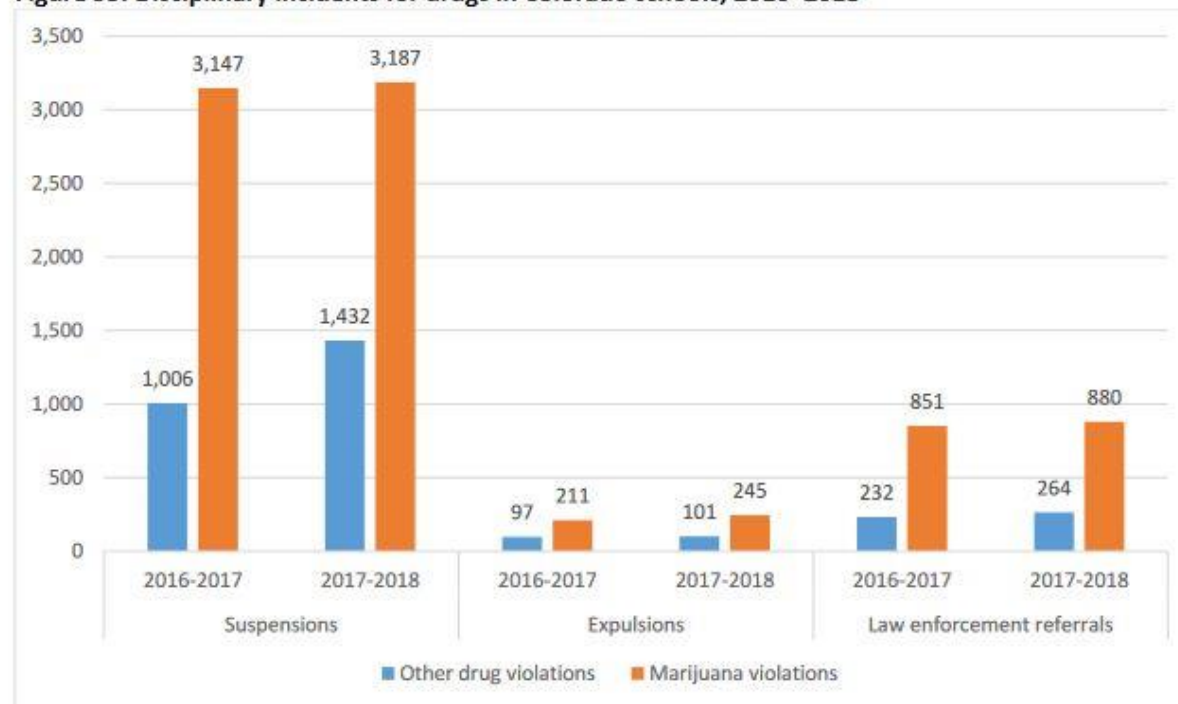
Current Colorado Healthy Kids Survey from 2019 shows that kids are using more and at a younger age.

Kids are starting with higher potency products – for many reasons

Locally, school district 60 showed 38% chronic absenteeism in 2018

DISCIPLINARY ACTIONS

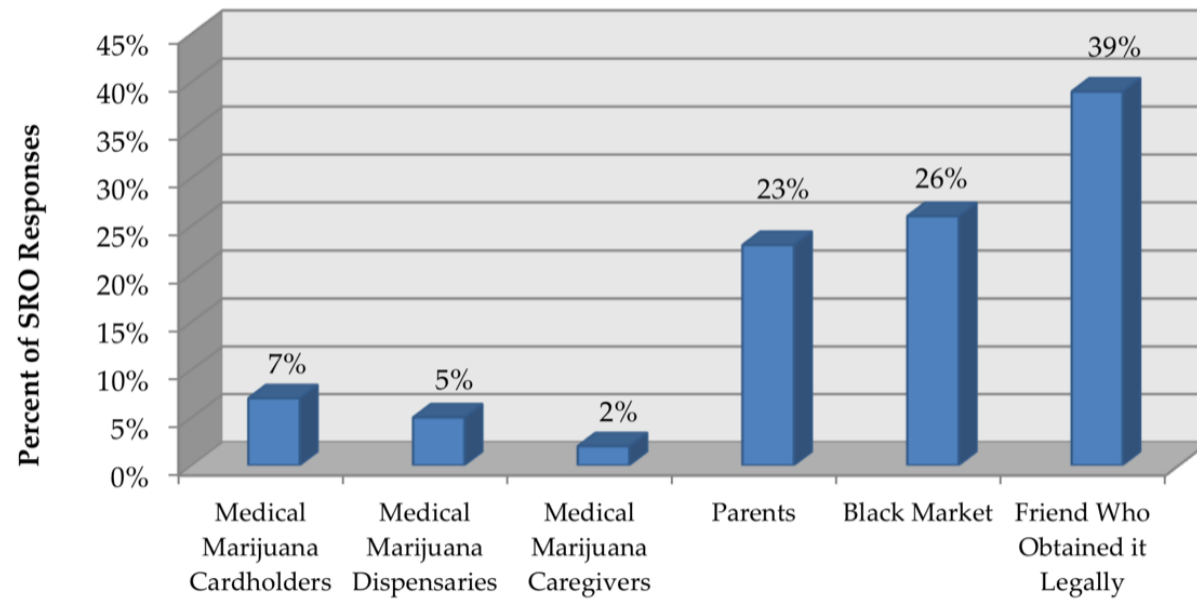
Figure 99. Disciplinary incidents for drugs in Colorado schools, 2016–2018



WHERE ARE
STUDENTS
GETTING
THEIR
SUPPLIES?

Question: Where do the students get their marijuana?

Student Marijuana Source, 2017



SOURCE: Colorado Association of School Resource Officers (CASRO) and Rocky Mountain HIDTA

COMMUNITIES WILL BENEFIT FROM THE TAXES???



QUESTIONS

