Colorado's Experience with Cannabis Since Legalization

Public Health and Marijuana in the State of Colorado

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COLORADO
Department of Public Health & Environment

Objectives

- Provide a short overview of how the Colorado Department of Public Health and Environment (CDPHE) monitors marijuana use and health effects

- Describe cannabis use trends in the State of Colorado since legalization across various populations

- Understand how CDPHE utilizes surveillance data and literature reviews to inform prevention and/or education efforts

"**Monitor changes in drug use patterns**, broken down by county and race and ethnicity, and the **emerging science** and **medical information** relevant to the health effects associated with marijuana use."

Marijuana Health Monitoring & Research Program

- C.R.S. 25-1.5-111 & SB-13-283

- **Patterns of Marijuana use**
  - Surveillance of public health data
    - Surveys
    - Health incident databases

- **Emerging Science & Medical Information**
  - Retail Marijuana Public Health Advisory Committee
    - Appointed panel of scientists and health care professionals

Retail Marijuana Public Health Advisory Committee

- Systematically review current scientific literature and public health surveillance data

- Develop evidence and public health statements
- Recommend public health related policies and surveillance activities
- Identify research gaps

- Produce a biennial report
  - Colorado State Board of Health, Colorado Department of Revenue, and Colorado General Assembly

Epidemiologic Surveillance Data

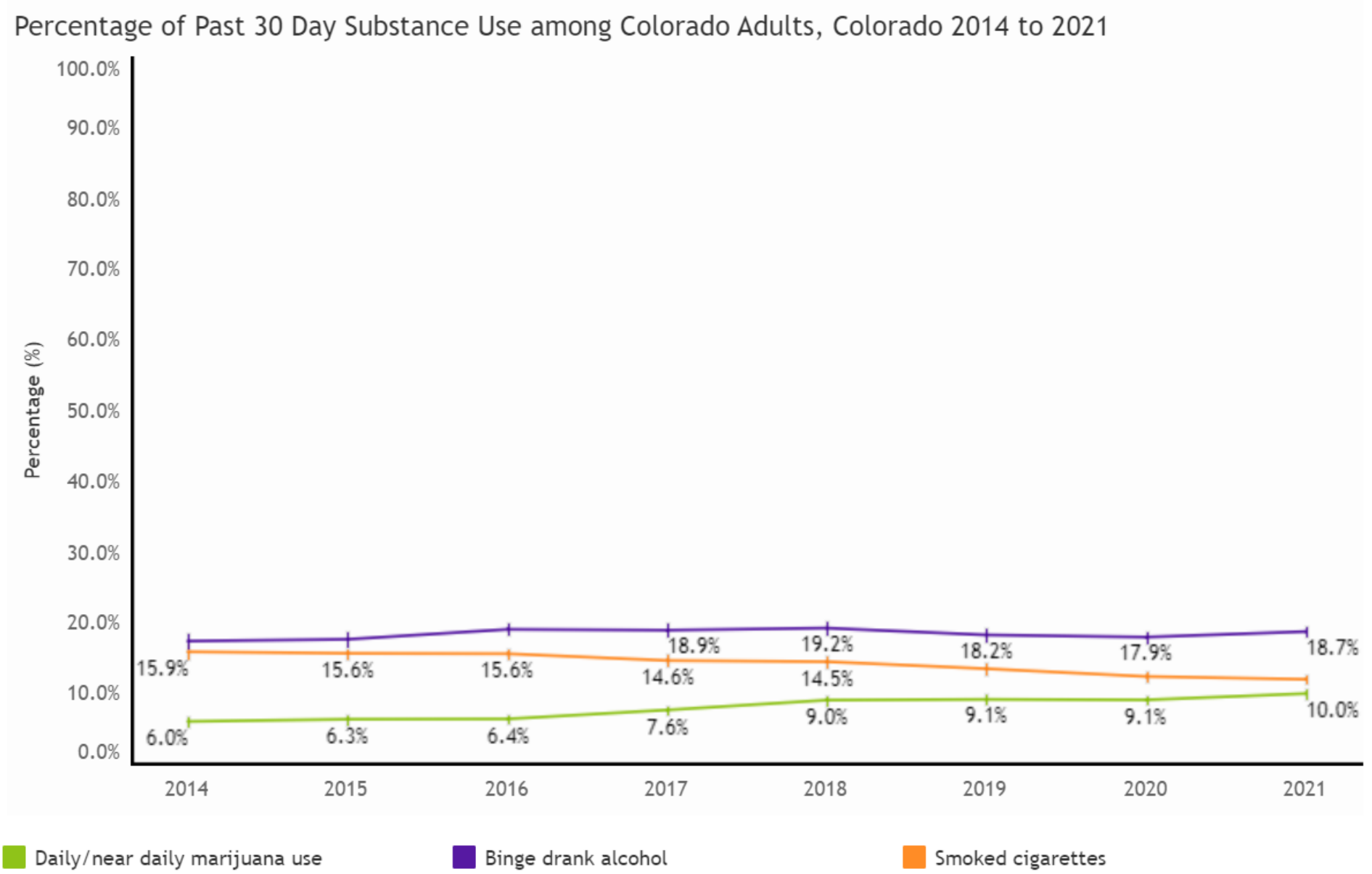
Data Sources

Population	Data Source	Analysis	Patterns
Adults (18+)	Behavioral Risk Factor Surveillance Survey (BRFSS)	Weighted prevalence	1. Prevalence of use 2. Frequency 3. Methods
Youth (6^{th}-12^{th})	Healthy Kids Colorado Survey (HKCS)	Weighted prevalence	1. Prevalence of use 2. Frequency 3. Methods 4. Perceptions
New moms (16+)	Pregnancy Risk Factor Surveillance System (PRAMS)	Weighted prevalence	1. Prevalence of use throughout pregnancy
Children (1-14)	Child Health Survey (CHS)	Weighted prevalence	1. Safe storage 2. Use in homes

Population	Data Source	Analysis	Incident
Acute Discharges	Colorado Hospital Association (CHA)	Discharge & Population Rates	Discharges with marijuana-related billing codes
Reported Exposures	Poison Center (RMPDS)	Frequency	Marijuana product exposures

Adult Marijuana Use

- 19% of Colorado adults report consuming marijuana within the past month
  - Higher than national estimates since before legalization
- 3.3% of Colorado adults report driving after marijuana use
  - Stable trend since legalization in 2014
- 52.3% of adult consumers report using marijuana daily or near daily
  - 25.9% use weekly
  - 21.8% use monthly
- Smoking remains the most prevalent method of use among adult consumers:
  - Smoking → 82.9% in 2014 to 71.5% in 2021
  - Eating/drinking → 35.6% in 2014 to 46.8% in 2021



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Youth Marijuana Use

- 13.3% of Colorado youth used marijuana within the past month.
  - Decrease from 19.7% in 2013
- Driving after marijuana use decreased (among youth who drove).
  - 11.2% in 2019 to 5.5% in 2021
- 60.4% of youth think regular marijuana use is risky.
  - Increase from 50.1% in 2019
- 59.2% of current marijuana users said they used THC concentrates, hash oil, or waxes in the past month.

Past 30 Day Substance Use among High School Students, Colorado 2013 to 2021

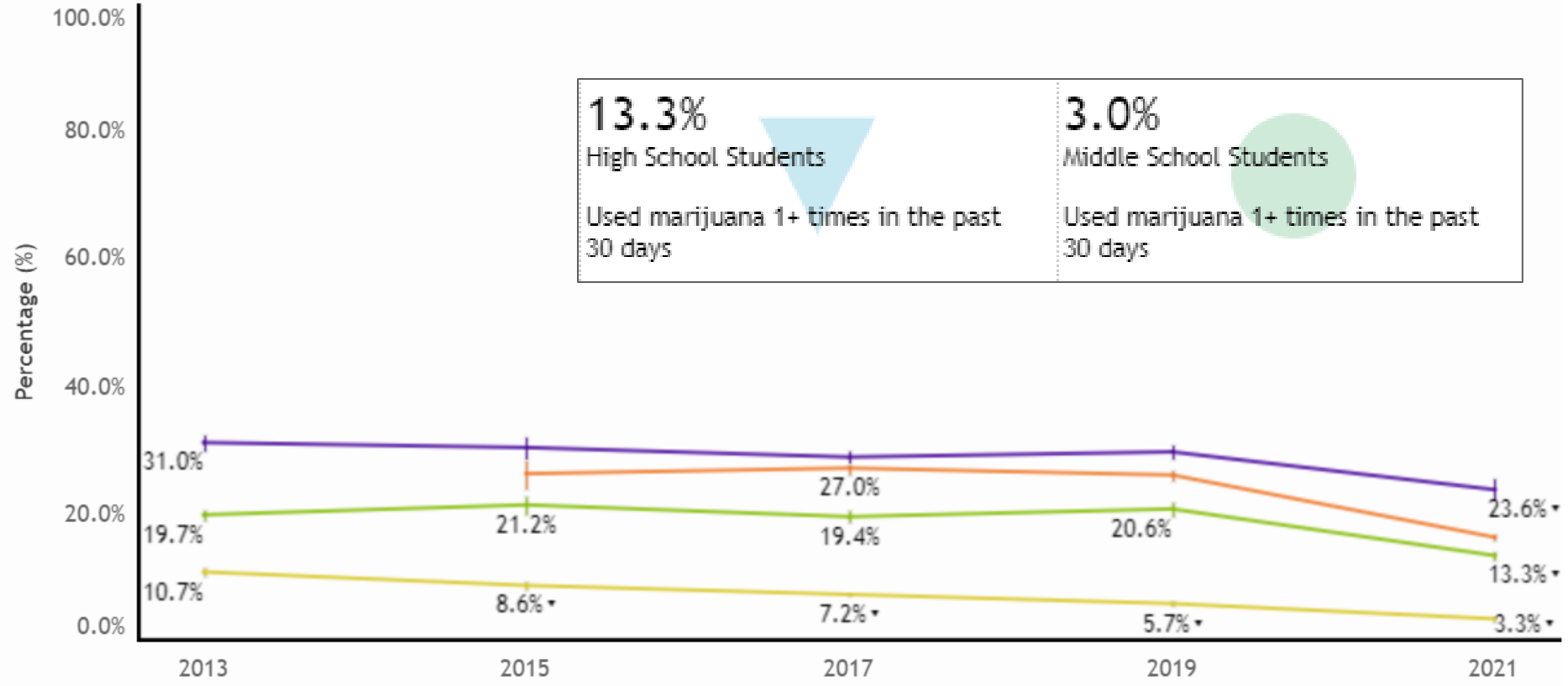

Figure Notes

Significant decrease (▾) or increase (▴) compared to previous year determined by non-overlapping 95% Confidence Intervals (bars on line)

Denominator includes all respondents except those with missing responses

Marijuana
Alcohol
Cigarettes
Vapor Products (Tobacco)

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Maternal and Child Health

- Marijuana use during or after pregnancy remains unchanged.

- 6.8% of new mothers reported using marijuana during pregnancy.
  - Decrease from 8.2% in 2019
  - Increase from 5.7% in 2014

- Marijuana use remains less prevalent than alcohol use (15.4%) and more prevalent than e-cigarette use (1.6%) or cigarette use (4.4%).

- First trimester use → 6.2%
- Third trimester use → 2.3%

Figure Notes

Significant decrease (▾) or increase (▴) compared to previous year determined by non-overlapping 95% Confidence Intervals (black bars on line)

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Health Outcomes & Health Incident Data

- ED Discharges with any marijuana-related billing code have decreased to the lowest rate since retail legalization.
  - 672.0 per 100,000 in 2021 - 1039.5 per 100,00 in 2014

- ED Discharges with marijuana poisoning codes in children under 6 years has significantly increased since legalization
  - 75.9 per 100,000 in 2021 - 10.9 per 100,000 in 2014

- Hospital discharges with any marijuana-related billing code have decreased to the lowest rate since 2016, but remain higher than the rate at legalization.
  - 3258.8 per 100,000 in 2021 - 3,516.6 per 100,000 in 2016 - 2,446.6 per 100,00 in 2014

- Hospital discharges with any marijuana-related billing code in children under 6 years has significantly increased since legalization.
  - 1,082.0 per 100,000 in 2021 - 15.1 per 100,000 in 2015

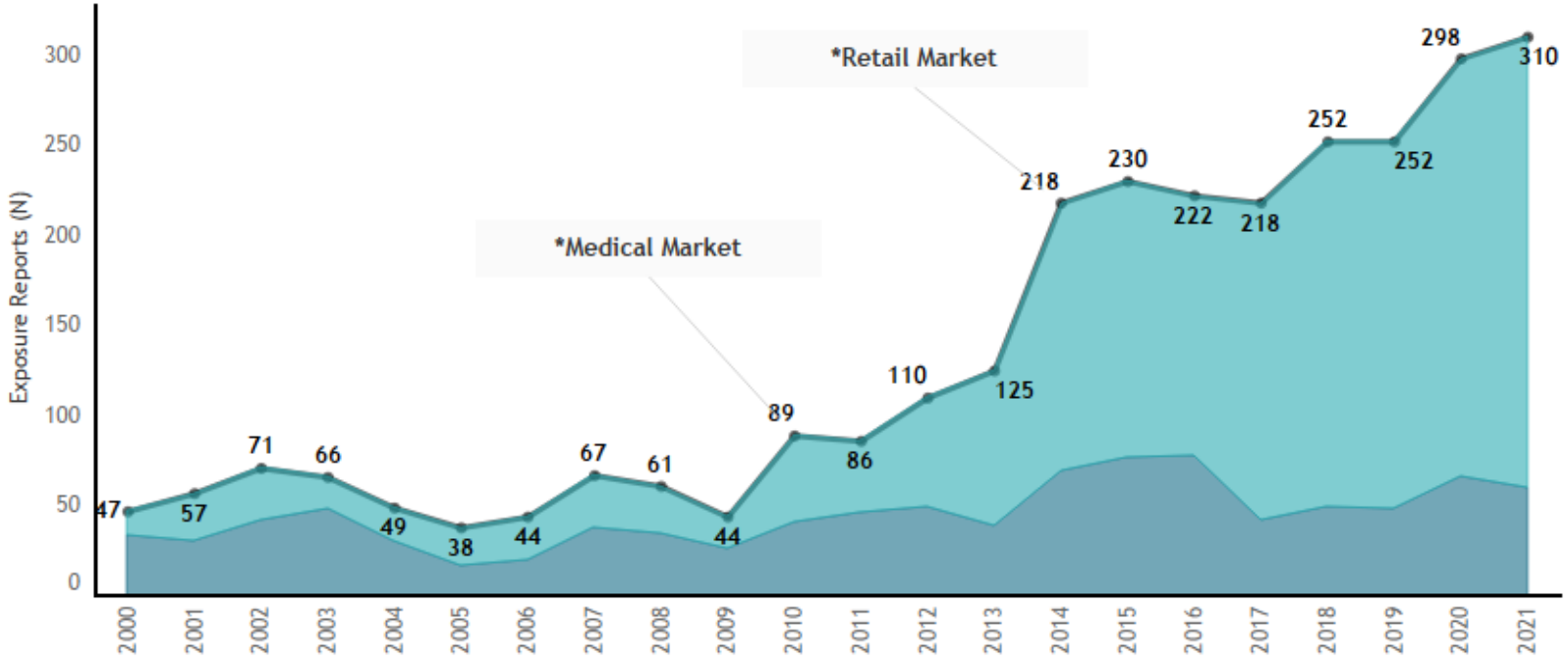
Rocky Mountain Poison & Drug Safety

Reported Marijuana Exposures, Colorado 2021

In 2021, there were **34,229** human exposures reported to RMPDS and **310 (0.9%)** were marijuana exposures.

48.7%	56.5%	57.7%
5 years old and younger	Edible	Unintentional

Annual Frequency of Reported Marijuana Exposures, Colorado 2000-2021



*The largest percentage increases in reported marijuana exposures to RMPDS occurred when adult use cannabis retail and medical markets opened to the public in 2014 & 2010, respectively.

Marijuana Only

Marijuana + Other Exposure

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Prevention & Education Efforts

Prevention and Education Efforts

- Retail Marijuana Public Health Advisory Committee
  - Evidence statements convey quality and quantity of scientific evidence behind a finding.
  - Systematic approach to translate into public health statements
  - Guide the development of evidence-based prevention & education campaigns

Public Health Impact

Continual dissemination through website & presentations

Collaboration with federal, state, local, consumers, and stakeholders

Prevention and Education Efforts

- Evidence-based strategies
  - Limit availability and accessibility
    - Age limit
    - Price
    - Packaging
    - Edibles limit
  - Use polices
  - Marijuana Enforcement Division

- Prevention Services Division marijuana campaigns:
  - Good to Know
  - Responsibility Grows Here – responsiblitygrowshere.com

Prevention and Education Efforts

- **Adverse Health Event Response**
  - CDPHE collaboration with MED
  - Investigate patient complaint
  - Investigate product information
  - EVALI, illicitly purchased products, Delta-8 THC

Conclusions

- Systematic, unbiased approach to review current scientific literature
- Continued surveillance of epidemiologic data
- Adverse health event response procedure
- Challenges:
  - Unintentional exposure among children
  - Youth dabbing (high THC concentrate use)
  - Use during pregnancy and/or breastfeeding
  - ….

Thank you
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