

NC DEPARTMENT OF HEALTH AND HUMAN SERVICES

Cannabis and Public Health Surveillance

Scott Proescholdbell, MPH

**Division of Public Health
Injury and Violence Prevention Branch**

December 16, 2025

Funding

The NC Injury & Violence Prevention Branch (IVPB) does not receive any direct funding to support cannabis surveillance or prevention. This work is made possible by funding from the CDC's Center for Injury and Prevention Overdose Data to Action in States cooperative agreement. And historically, Division of Mental Health, Developmental Disabilities and Substance Use Services (NCDMHDDDSUS) for syndromic surveillance behavioral health/mental health indicators.

Agenda

- Cannabis Surveillance
- Dissemination Products
- Recommendations
- Resources

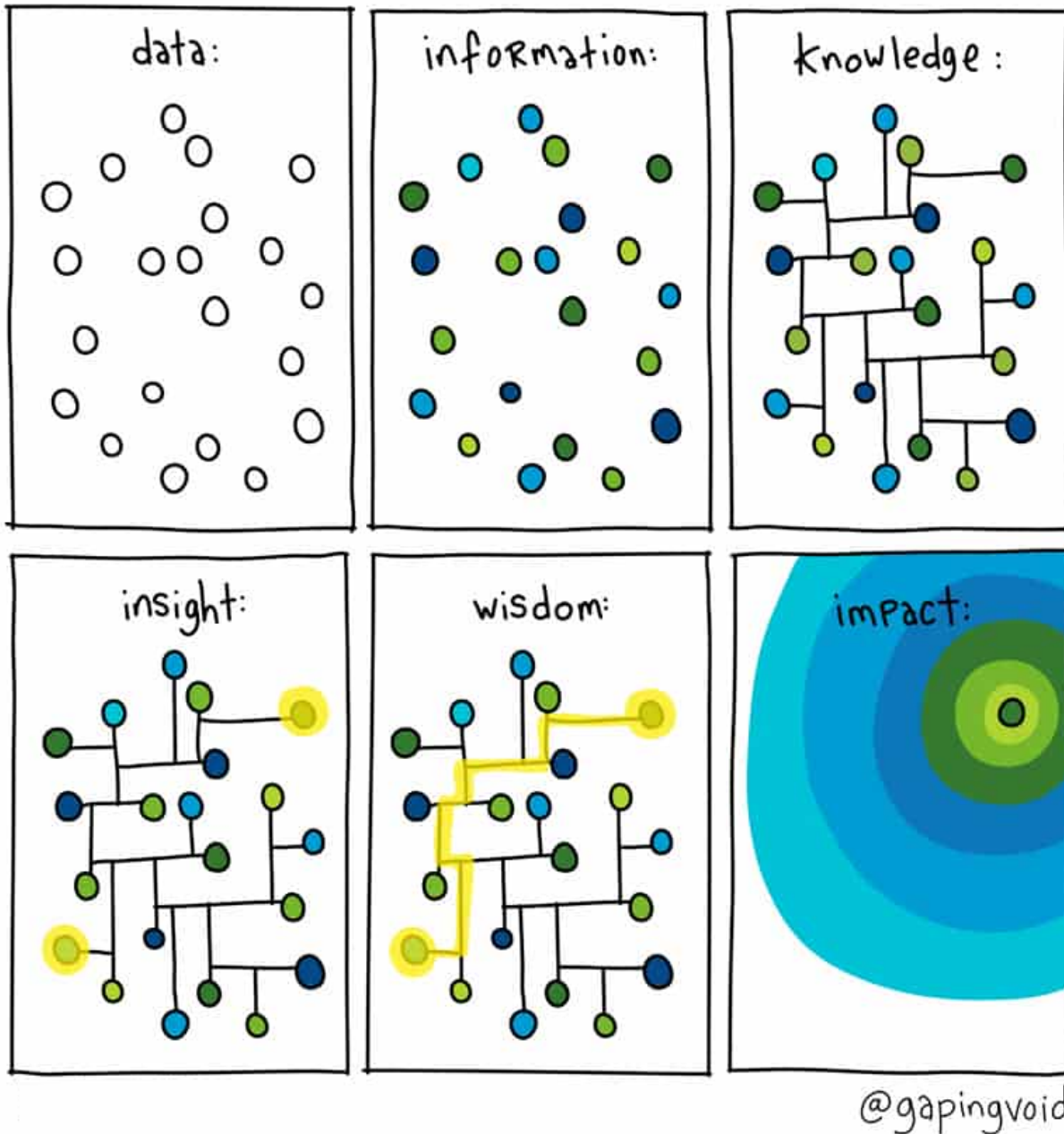
Objectives

- Provide an overview of current cannabis-related public health surveillance and data dissemination in North Carolina
- Suggest possible cannabis-related surveillance measures/metrics
- Highlight resources from the Injury Epidemiology, Surveillance, and Informatics Unit

Epidemiologists work to answer:

- Who?
- What?
- Where?
- When?
- Why?
- How?





Making Data Impactful


Epidemiologists and other public health practitioners work to transform data into action.

We connect the dots from injury events to prevention.


Cannabis Surveillance

Overview of current cannabis-related public health surveillance in North Carolina

Outbreak investigations are not just for infectious diseases.

Morbidity and Mortality Weekly Report (MMWR)

Search



Update: Characteristics of a Nationwide Outbreak of E-cigarette, or Vaping, Product Use–Associated Lung Injury — United States, August 2019–January 2020

Weekly / January 24, 2020 / 69(3);90–94

[Print](#)

On January 17, 2020, this report was posted online as an MMWR Early Release.

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U.S. FOOD & DRUG ADMINISTRATION

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Menu

[← Home](#) / [Food](#) / [Recalls, Outbreaks & Emergencies](#) / [Outbreaks of Foodborne Illness](#) / [Investigation of Illnesses: Diamond Shruumz-Brand Chocolate Bars, Cones, & Gummies \(June 2024\)](#)

Investigation of Illnesses: Diamond Shruumz–Brand Chocolate Bars, Cones, & Gummies (June 2024)

Do not eat, sell, or serve any flavor of Diamond Shruumz–Brand Products.

Feedback

PIEDMONT TRIAD NEWS

Student taken to hospital after using THC vape at middle school in Davidson County, sheriff says

by: [Justyn Araya DeBusk](#), [Natasha Laguerre](#), [Brayden Stamps](#)
Posted: Feb 16, 2024 / 12:08 PM EST
Updated: Feb 16, 2024 / 06:37 PM EST

NORTH CAROLINA NEWS

North Carolina health officials warn of increase in kids overdosing from marijuana edibles

by: [Caitlin Richards](#)
Posted: Jan 11, 2023 / 09:01 AM EST
Updated: Jan 11, 2023 / 09:01 AM EST

Eight students sent to hospital after eating candy-like substance at Carteret County middle school

By WITN Web Team and [Charlene Richards](#)

Published: Aug. 27, 2025 at 4:15 PM EDT | Updated:



CARTERET COUNTY, N.C. (WITN) - Eight students at a middle school in Carteret County say they ate a candy-like substance provided by another student.

It happened around 1:30 p.m. Wednesday at Broad Creek Middle School.

The school system says some 10 students were involved in the incident. Others were released to the care of their parents.

The Carteret County Sheriff's Office says those students were taken to a local hospital.

SPECIAL REPORTS

Drugs that look like snacks, a concern for NC officers and doctors as children end up in the ER

by: [Gilat Melamed](#)
Posted: May 2, 2024 / 06:20 PM EDT
Updated: May 3, 2024 / 05:41 PM EDT

Background:
Concerned partners-
ED providers, CBOs,
and others- reached
out to substance use
epidemiologists to
make sense of
changes in their
communities.

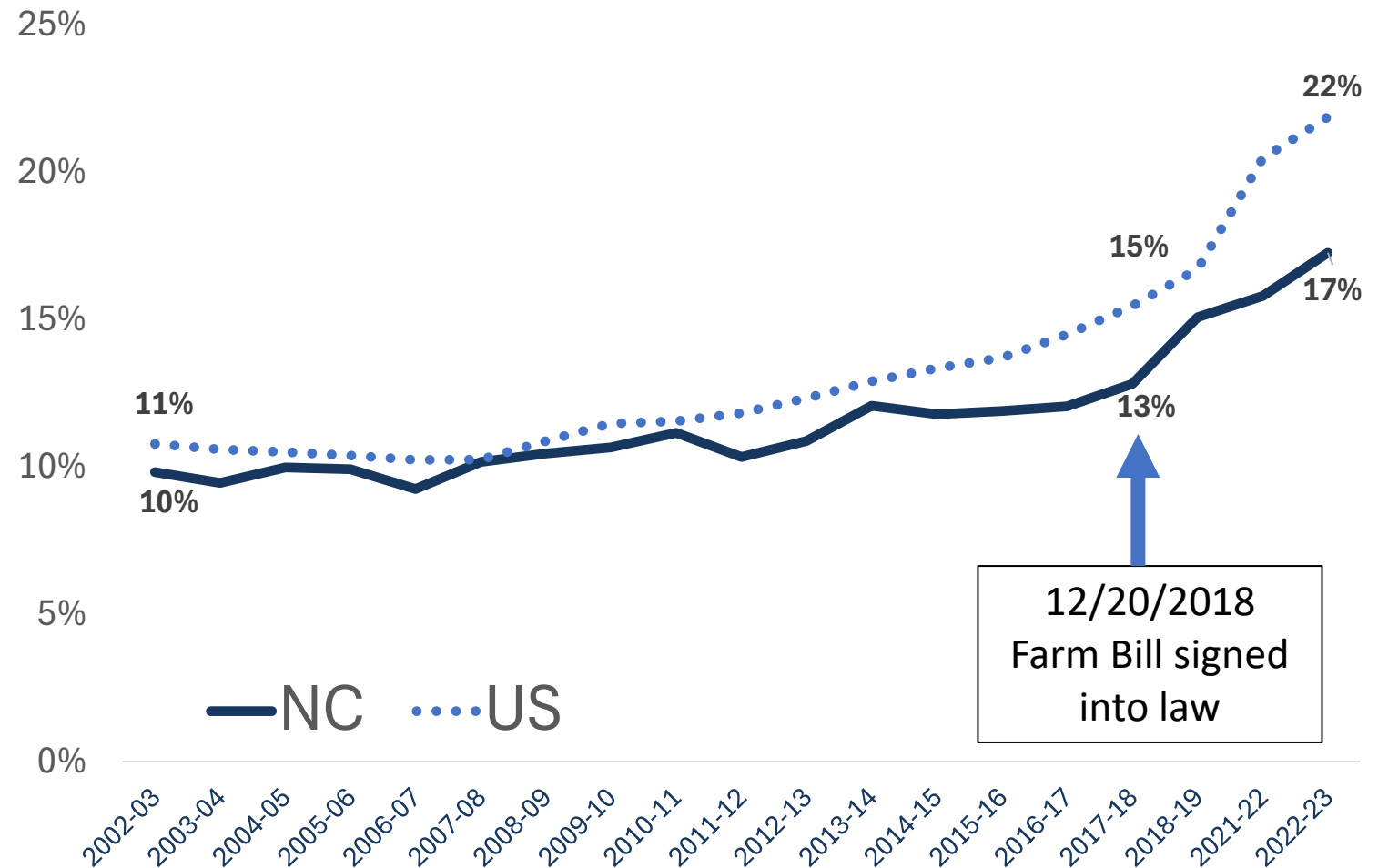
Data Considerations: Survey Data

Survey Data

- The framing of survey questions may impact how people answer. For example, respondents who use intoxicating hemp may say they do not use when responding to a question about “marijuana.”
- It is likely that survey data are an undercount of prevalence as individuals may be unlikely to disclose behaviors that are stigmatized.
- Survey data are not often available at sub-state levels.

The percent of North Carolinians 12 years old and up who reported using marijuana in the past year is increasing.

Percent reporting marijuana use in past year (12+ years)



Source: SAMHSA's National Survey on Drug Use and Health (NSDUH)

In a 2022 survey of North Carolina adults...

10% reported current marijuana use

Among those who reported current use:

- 21% use for medical reasons,
- 37% use for non-medical reasons, and
- 41% use for both medical and non-medical reasons

Source NC Behavioral Risk Factor Surveillance System (BRFSS), NC State Center for Health Statistics;
<https://schs.dph.ncdhhs.gov/data/brfss/2022/>

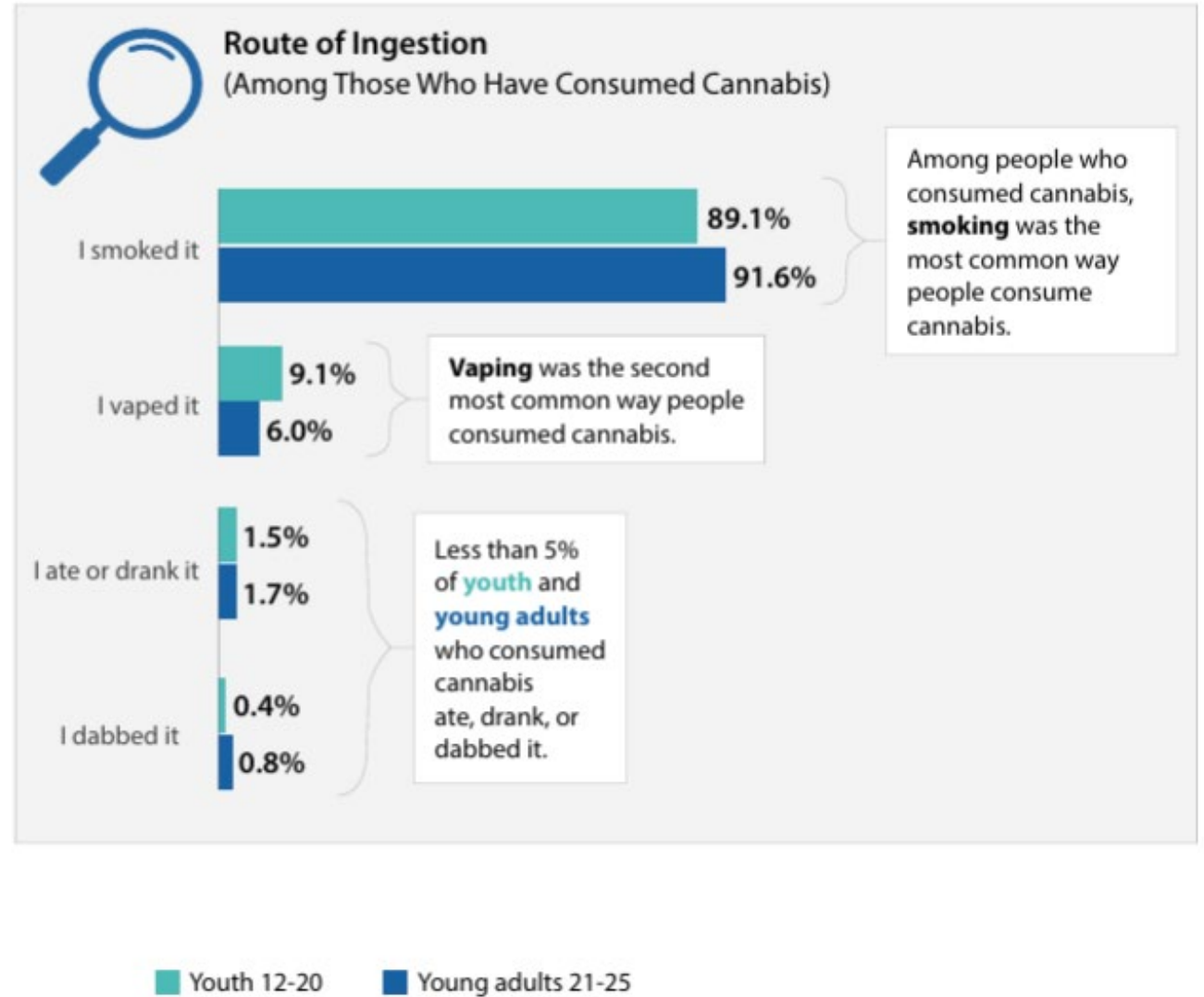
**In a 2023
survey of
North Carolina
high school
students...**

**16% reported current
marijuana use**

**29% reported having
ever used marijuana**

Source: <https://www.dpi.nc.gov/districts-schools/classroom-resources/academic-standards/programs-and-initiatives/nc-healthy-schools/nc-healthy-schools-data#NCYRBS-3538>

In a 2023 survey of North Carolina youth and young adults...



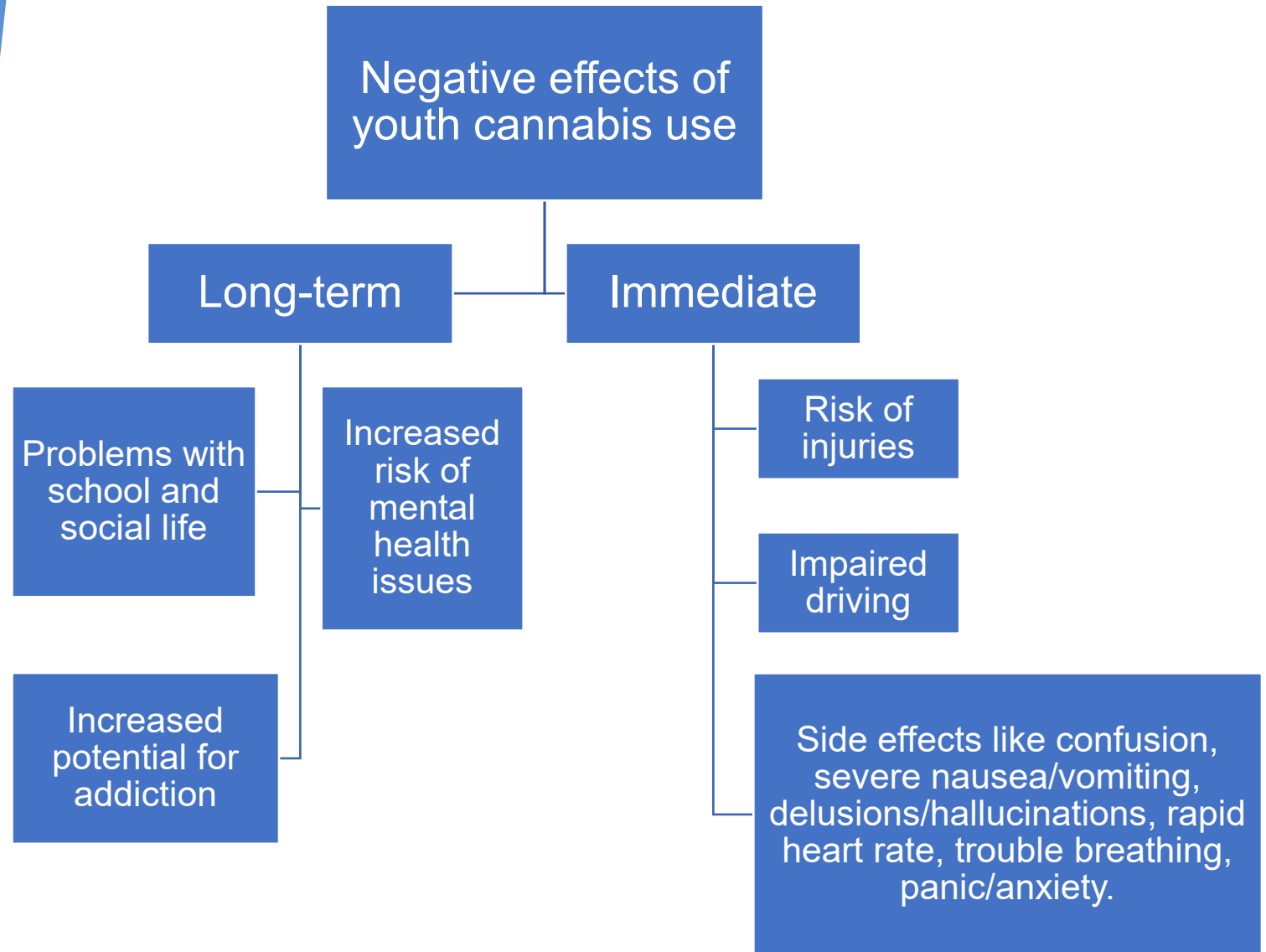
Source: [North Carolina Youth and Young Adult Substance Use Prevention Survey Results](#), Wake Forest University School of Medicine

Individuals of any age may experience negative health outcomes when using cannabis products.

Youth and young adult use (<25 years) may harm the developing brain.



- FEELING DIZZY
- LETHARGY
- RAPID HEART RATE
- TROUBLE BREATHING
- PANIC
- ANXIETY
- DEATH



Source: <https://www.cdc.gov/cannabis/health-effects/cannabis-and-teens.html>

Data Considerations: Emergency Department Visit Data

Emergency Department Data

- Epidemiologists regularly utilize ED billing data for public health surveillance. These datasets were not designed with public health in mind, so ICD-10-CM codes may not always capture all pertinent information about a visit.
- ICD-10-CM coding and free text documentation may vary from facility to facility.
- These are rates of visits, not people. People can, and do, have repeat visits to the ED. We are unable to distinguish which visits belong to the same individual.
- A cannabis-related code does not always mean cannabis was the main reason for the ED visit.

Syndromic Surveillance is our most timely data source.

It utilizes keywords in the chief complaint and/or triage note fields in Emergency Department (ED) data.

Cannabis Consumption (keyword) Case Definition:

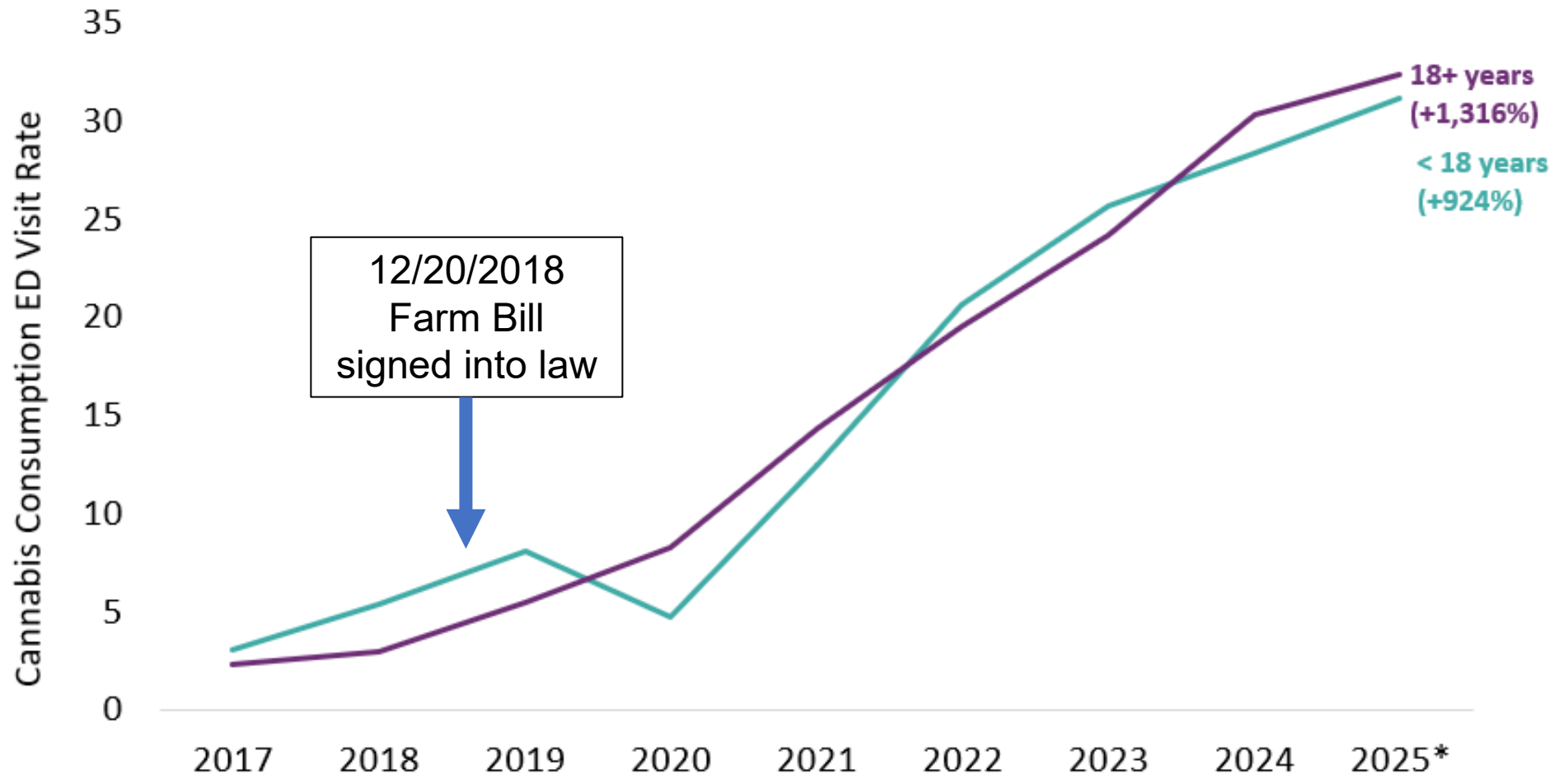
Free text: delta8 OR delta9 or delta10
OR delta OR “edible*” OR “edible*”
OR “weed ingestion” OR “gumm*” OR
“ingested weed” OR THC

Exclusions: “Delta Behavioral”

Note: “gumm” searches for gummy, gummies, gummybear, gummiworm, etc.*

Surveillance Data: Trends over time, youth and adult ED visits related to cannabis consumption

Rate per 100,000 residents



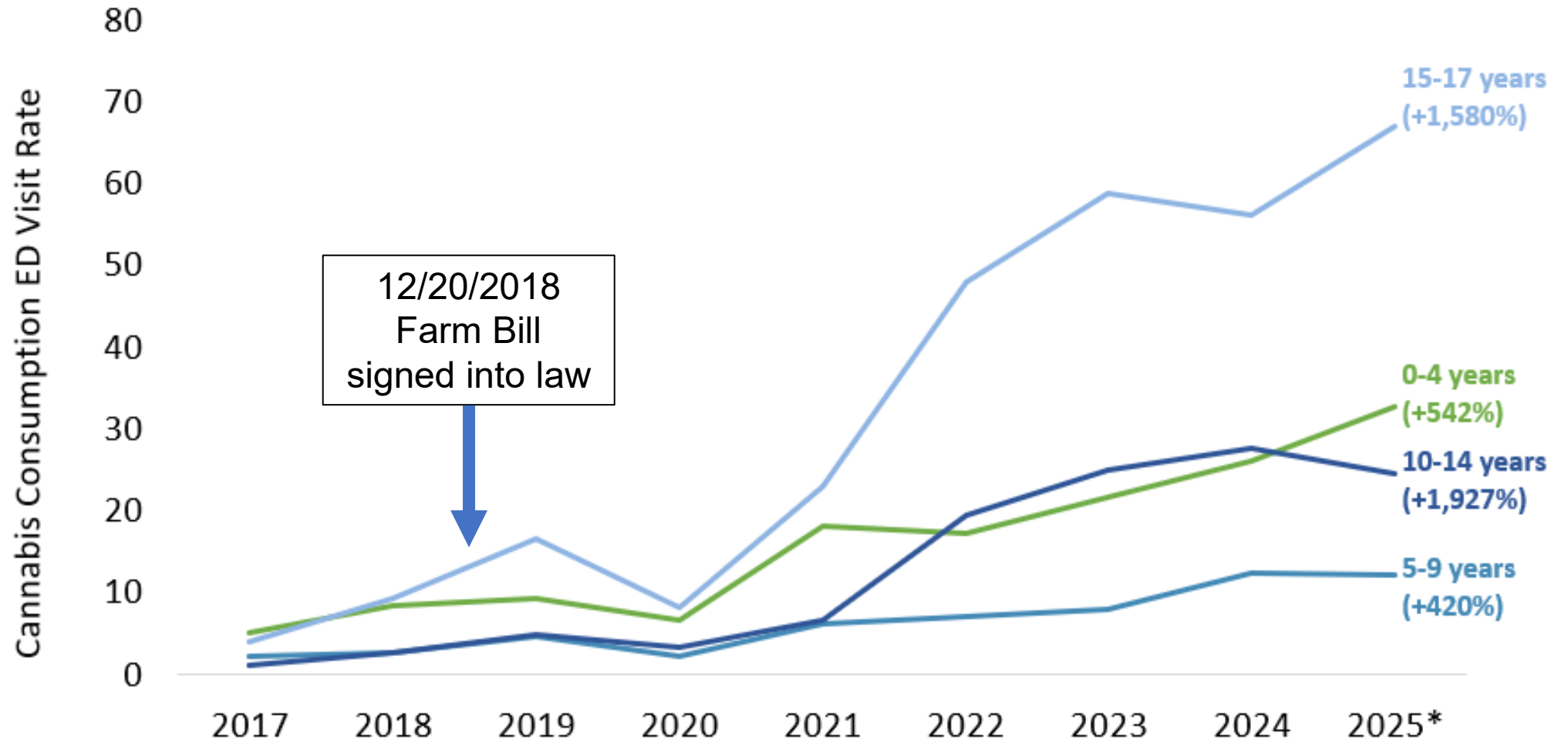
*2025 ED visits are provisional, data through 11/30/2025. 2025 calculations made by prorating the data for one year.

Source: NC DETECT, 2017-2025* ED Visits; Cannabis Consumption Definition (previously named THC Ingestion), pulled 12/2025

Analysis by the Injury Epidemiology, Surveillance, and Informatics (ESI) Unit

Surveillance Data: Trends over time, youth (<18) ED visits related to cannabis consumption

Rate per 100,000 residents



*2025 ED visits are provisional, data through 11/30/2025. 2025 calculations made by prorating the data for one year.

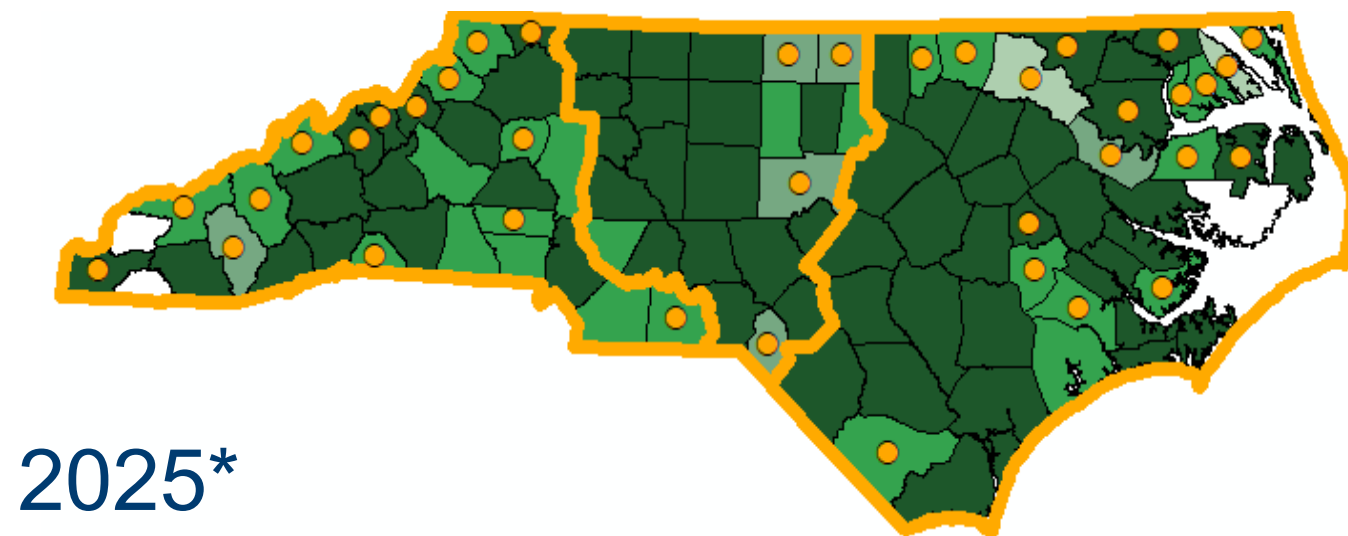
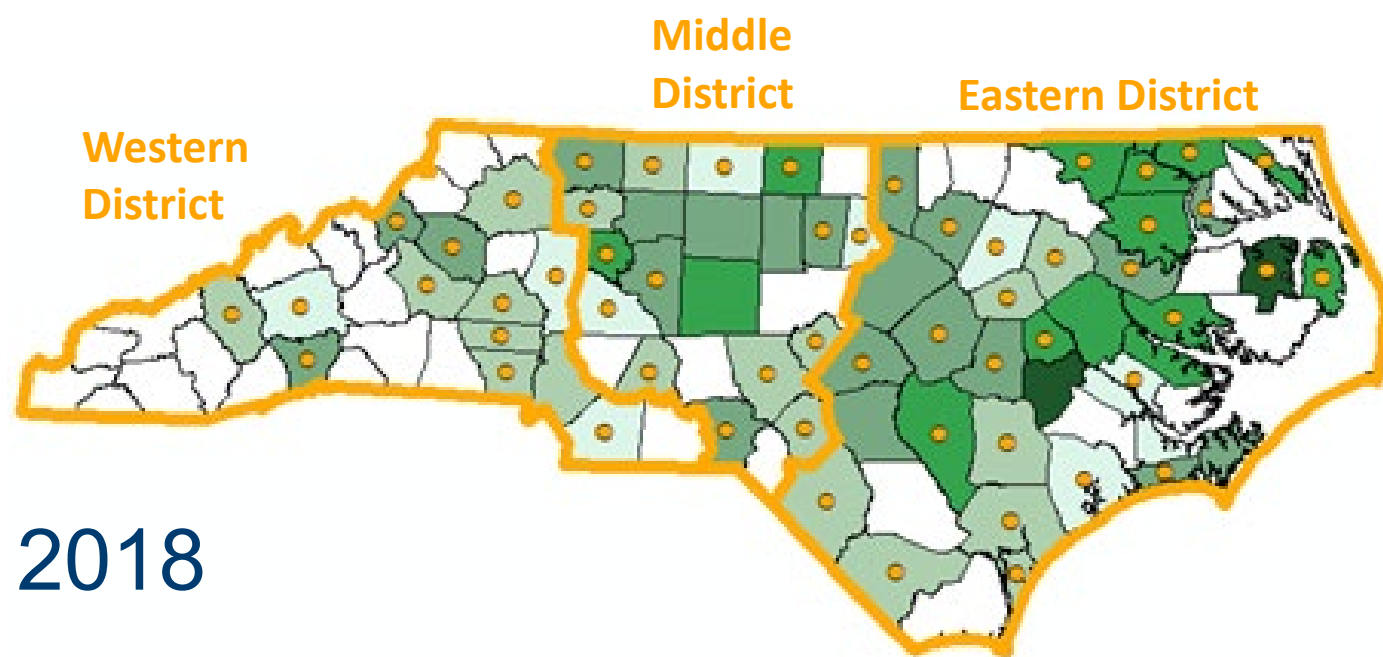
Source: NC DETECT, 2017-2025* ED Visits; Cannabis Consumption Definition (previously named THC Ingestion), pulled 12/2025

Analysis by the Injury Epidemiology, Surveillance, and Informatics (ESI) Unit

Where?

Rates of ED Visits for Cannabis Consumption, by county of residence 2018 and 2025*

Rates per 100,000 residents



*2025 ED visits are provisional, data through 11/30/2025. 2025 calculations made by prorating the data for one year.

Surveillance case definitions often utilize ICD-10-CM codes and/or keywords.

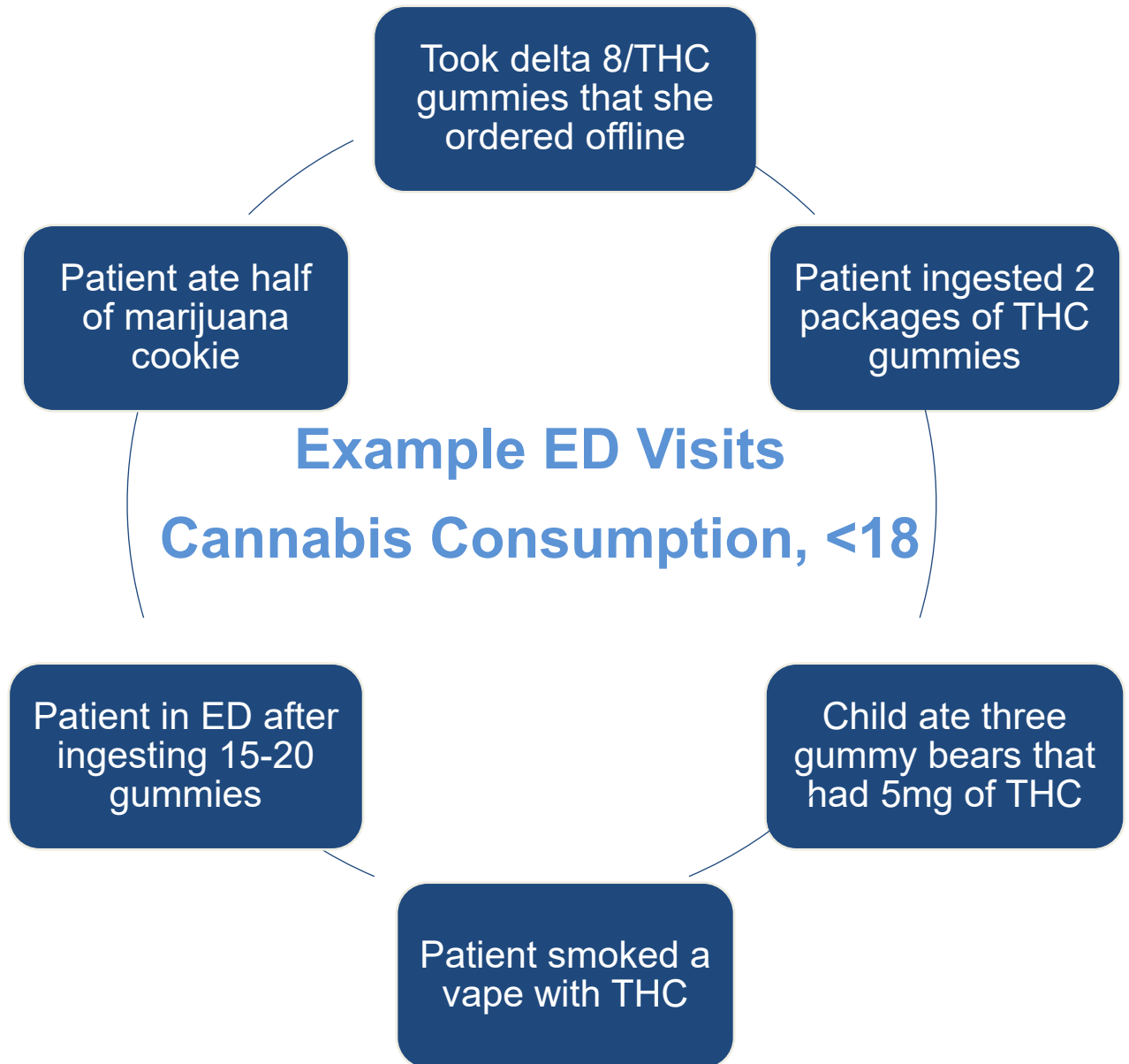
Cannabis-Related V2 (ICD10CM)	Any of the following ICD-10-CM Codes:	A custom event that looks for ED	
	<p>F12, F12.1, F12.10, F12.12, F12.15, F12.159, F12.18, F12.180, F12.19, F12.229, F12.23, F12.25, F12.29, F12.90, F12.92, F12.920, F12.99, F12.98, F12.980, F12.988, F12.99, T40.712A, T40.712D, T40.712S, T40.714D, T40.714S, T40.715, T40.721D, T40.721S, T40.722, T40.723S, T40.724, T40.724A, T40.7X, T40.7X1, T40.7X1A, T40.7X3, T40.7X3A, T40.7X3D, T40.7X5A, T40.7X5D, T40.7X5S</p>	<p>Cannabis Edible (Keyword)</p> <p>Free text: "edibl[a-z]*"</p> <p>OR</p> <p>-- combination of ingestion terms AND cannabis-related terms</p> <p>("choc*" OR "gum*" OR "eat*" OR ate OR drink OR drank OR tea OR "inges*" OR "browni*" OR candi OR candy OR candies OR "consum*")</p> <p>AND</p> <p>("synthetic*" OR "suspi[a-z]*" OR "marij[a-z]*" OR hemp OR weed OR "cana[a-z]*" OR "canna[a-z]*" OR "delta*" OR thc OR cbd)</p> <p>Exclusions:</p> <p>"weed eat*"OR "cbd stone"OR"cbd dialat*" OR "cbd dilat*" OR "dilated CBD" OR "dilatd CBD" OR "CBD patency" OR "cbd obstruc*" OR "cbd sludge" OR "common bile duct" OR "history of THC use"</p>	<p>Syndrome</p>

MENTAL & BEHAVIORAL HEALTH SYNDROME VALIDATION REPORT



Qualitative data from ED visit triage notes help us better understand the context of these events and can inform prevention activities.

Source: NC DETECT, 2016-2023 ED Visits; Cannabis Consumption Definition (previously named THC Ingestion), pulled 8/2025
Analysis by the Injury Epidemiology, Surveillance, and Informatics (ESI) Unit



There is an established body of evidence showing that when substances are available, accessible, and inexpensive, people tend to use more.

The built environment directly impacts the public's health.

Measuring and Mapping Alcohol Outlet Environment Density, Clusters, and Racial and Ethnic Disparities in Durham, North Carolina, 2017

[Mike Dolan Fliss](#)^{1,2,✉}, [Mary E Cox](#)², [John W Wallace](#)³, [Matthew C Simon](#)³, [Kendall B Knuth](#)^{2,4}, [Scott Proescholdbell](#)²



Physical availability of a product can impact use.

In North Carolina, THC products are available for purchase in:

- Malls
- Gas stations
- Vape shops
- Health food stores
- Vitamin shops
- On-line
- Others?

Without a registry of retailers, we can't know all the places these products are sold.



Picture above taken in NC, Vape and Tobacco stores separated by a pizza shop



Picture above taken at NC Garden Center

Place Matters!

The retail environment can play a role in prevention through place, product, price, and promotion (the 4 Point-of-Sale Ps).

Example: “The North Carolina Alcohol Law Enforcement Division says they received complaints regarding an increased amount of vape products confiscated from underage students; [the store] is roughly 500 feet from the entrance to Lincolnton High School.”



LINCOLN COUNTY

Lincolnton vape shop accused of illegal sales opened near school just before city changed rules

by: [Robin Kanady](#)
Posted: Feb 26, 2025 / 06:58 PM EST
Updated: Feb 26, 2025 / 10:13 PM EST

QUEENCITYNEWS



Dissemination Products

Overview of current cannabis-related public health dissemination in North Carolina

Public Health works to raise awareness.

NC Department of Health and Human Services's Post



NC Department of Health and Human Services ✓

March 19 · 🌐

CANNABIS EDIBLES OR CANDY?

It can be hard to
tell the difference.

**Store cannabis
edibles securely
and separately
from food.**



Fast, free, confidential,
expert advice. 24/7.



North Carolina Poison Control

March 19 · 🌐

NC Poison Control's cases about childhood cannabis exposures are increasing. If cannabis products are in the home, follow these tips to prevent a child's access:

- Keep cannabis containing products in a secure place out of sight and reach of children. A child can become sick after eating only 1 gummy.
- Understand that edible cannabis products can look like candy or other treats to children.
- Know that edibles come in a variety of edible preparations like gummies, cookies, candies, and various snack foods. Store edible cannabis products away from other food to avoid a mix-up.

The signs of cannabis poisoning can include severe tiredness, weakness, slurred speech, confusion, nausea, vomiting, and trouble breathing.

Contact NC Poison Control at 1-800-222-1222 if you suspect a poisoning related to a cannabis product.

[#NPPW25](#) [#poisoncontrol](#) [#poisoncenter](#) [#poisonprevention](#) [#cannabis](#)

Public Health shares prevention messaging.

LOOKS CAN BE DECEIVING: *Keeping Kids Safe from Cannabis Edibles*

Cannabidiol (CBD) and tetrahydrocannabinol (THC) are both naturally occurring compounds called cannabinoids found in cannabis plants. CBD is a non-psychoactive cannabinoid and does not cause the "high" that THC does. In 2018, the federal government passed the Agriculture Improvement Act of 2018 (known as the Farm Bill) which legalized hemp production. The Farm Bill also legalized CBD that comes from hemp, defined by the Farm Bill as cannabis containing less than 0.3% delta-9 THC.

Following the passage of the Farm Bill, there was a surge in THC products, including delta-9 products with high levels of THC, sold in North Carolina, other states, and online.



The Farm Bill has not addressed the legal status of any form of THC other than delta-9.

This has caused semi-synthetic THC forms, like delta-8, delta-10, and many others, to become widely available.

Products containing these forms of THC may present safety concerns. To learn more, see the [Cannabis Regulators Association's Considerations for Federal Hemp Regulation](#).



States that have legalized THC products regulate them and often set safety limits on the amount of THC in a serving and in a package. However, both federally and in North Carolina, there is no regulation of products containing THC. This poses specific dangers because their purity, safety, and strength cannot be guaranteed.

Side effects of these products can include hallucinations, anxiety, passing out, and even death. There is currently no minimum age of sale for THC products in North Carolina. Any age limits retailers impose in North Carolina for the sale of THC products are voluntary.



Identifying Intoxicating cannabis products:

Many cannabis edibles have packaging that appeals to children or copies other snacks. This means they may be easily mistaken for a commonly available product. THC products are intended for adult use and many of the serving sizes are only a tiny portion of the package.

These products pose risks when the serving size is not followed, or if children consume an amount intended for adults. Examples of products that are infused with THC include:

- Gummy candies, chocolate bars, fudge, and lollipops
- Baked goods, snack foods, and popcorn
- Desserts such as cookies, brownies, cupcakes, and ice cream
- Sweetened and/or carbonated beverages including infused water

All of these products containing THC are readily available across North Carolina. They can be found in malls, gas stations, vape shops, and health food stores/vitamin shops. These products have no age limit required for purchase.



What to do if a child ingests these products:

- Try to find out how much your child ate by asking the child and/or looking at the wrapper to see how much THC is in the product.
- Edibles take longer to take effect compared to smoking cannabis. It can take 30-90 minutes to start feeling the effects, and the peak effects can occur 2-3 hours after ingestion and last 4-12 hours. Continue to watch your child for signs of overdose which can include: acting sluggish, feeling dizzy, trouble walking or sitting up, fast heart rate, difficulty breathing, sleepiness, or anxiety/panic.
- Call the Poison Control Center at 1-800-222-1222.
- Call 911 if a child becomes unresponsive or has difficulty breathing.



How to keep kids safe:

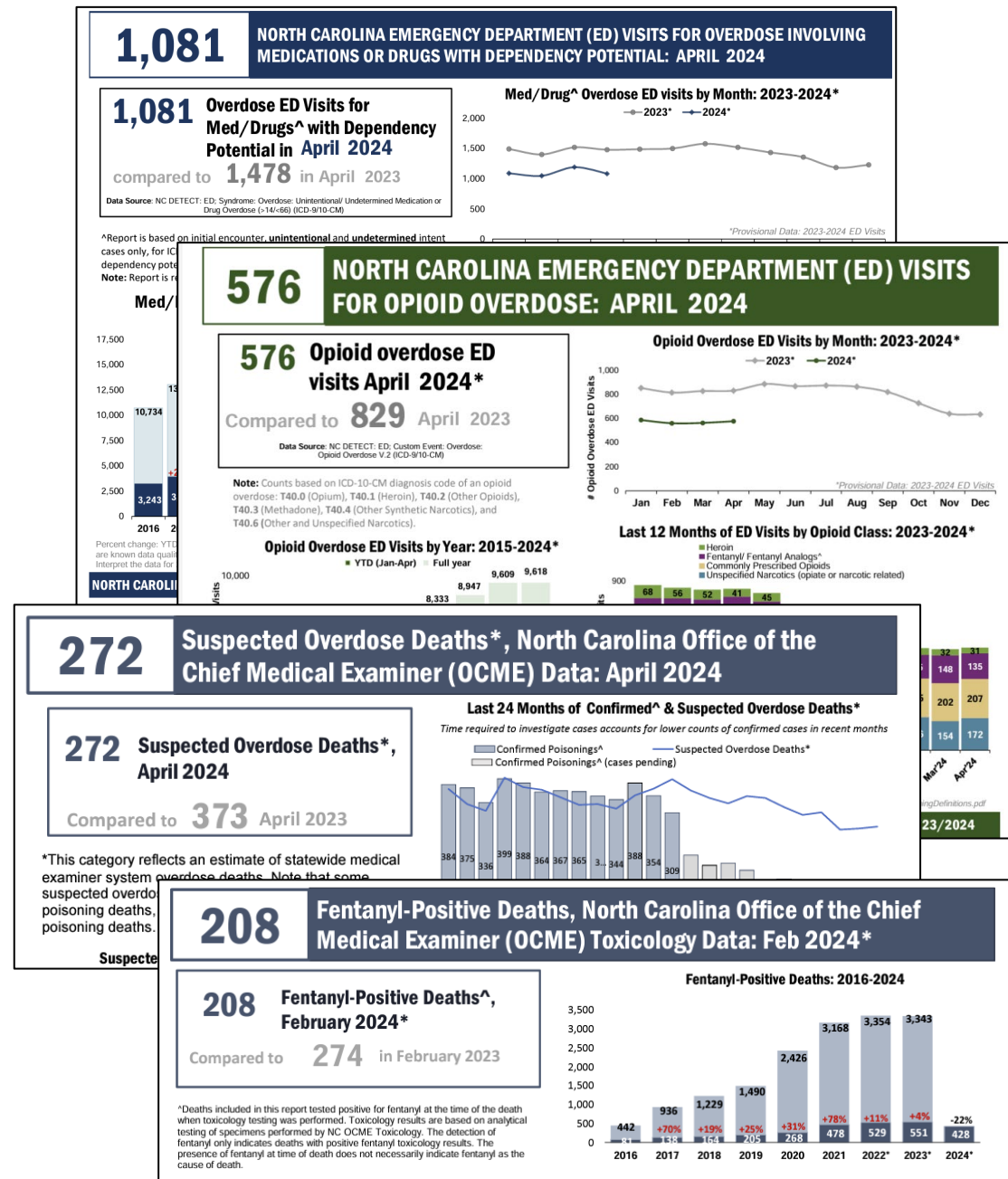
- Keep these products out of the home.
- If these products are in the home, store them safely and away from regular food and drinks. Store them the same way you store medication or cleaning products - in child-resistant packaging or containers, and out of reach or locked away.
- Do not consume adult edible products in front of children.
- Avoid buying products that look like candy or snacks that appeal to children.
- Talk with teens about the dangers of consuming these products, including how THC affects their developing brains, driving under the influence of impairing substances, and the risk of developing cannabis use disorder.
- Talk to family members, friends, and caregivers about these risks and share safety tips.



Public Health provides data and uses it for action.

Timely data, or active surveillance, is critical to inform prevention efforts.

Email SubstanceUseData@dhhs.nc.gov to receive monthly data updates.



NCDMHDDSUS, NC DETECT, and NC DPH are working to develop a quarterly update of cannabis-related ED visits.

April-June 2024 Quarterly Update

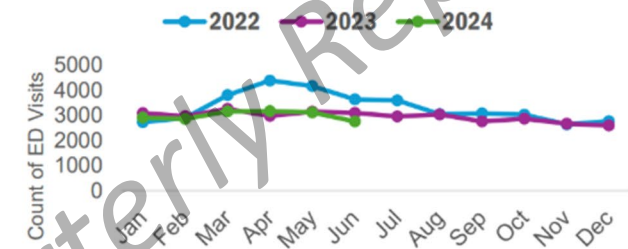


Trends in NC ED Visits with Primary or Co-Occurring Cannabis

This report shows trends in NC emergency department (ED) visits with any diagnosis code (ICD-10-CM) related to cannabis, including cannabis use, misuse, dependence with or without intoxication, poisoning and adverse effects. These codes may be assigned to the ED visit to document cannabis as a primary or co-occurring, contributing factor to the visit. 2024 data are provisional and counts may change in future updates. Source: NC DETECT (<https://ncdetect.org>)

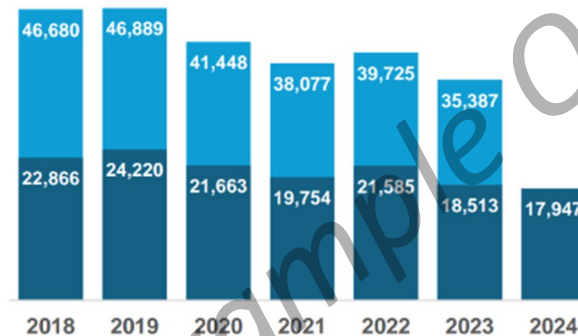
9,032 Cannabis-related ED visits
Apr-Jun 2024
compared to
9,217 Apr-Jun 2023

Monthly Trends by Year



Annual ED Visit Counts

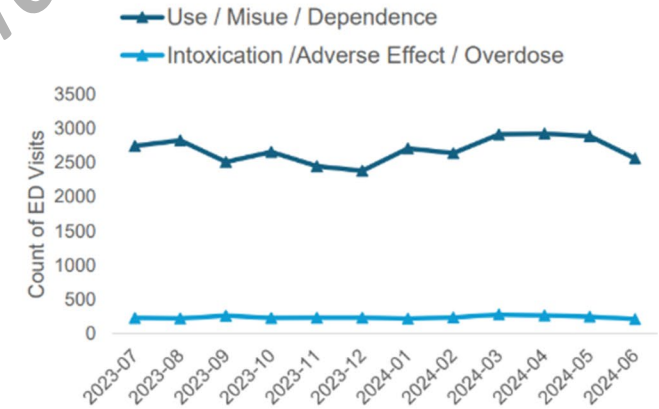
■ Full Year ■ YTD (Jan-Jun)



Note: Overall ED visit counts declined in 2020 and have not returned to pre-COVID volumes in NC DETECT. Changes in counts may reflect hospital documentation changes or data quality issues.

Monthly Trends by Subgroup

Rolling 12 Months from Jul 2023 – Jun 2024



Subcategories are not mutually exclusive; the same ED visit may be included in both subcategories if the visit has ICD-10-CM codes in both.

NC DMH/DD/SUS

September 17, 2024

NC Overdose Data Dashboard



NC Alcohol Data Dashboard



Interactive dashboards can provide timely, actionable, local-level data

North Carolina Alcohol Data

[Jump to: Alcohol Use](#) / [Alcohol-Related Harms](#) / [Alcohol Environment](#) / [Access to Care](#) / [Monthly Reports](#) / [Interactive Alcohol Data](#) / [Other Resources](#)

When alcohol is available, accessible, and inexpensive, people tend to drink more.¹ Drinking too much alcohol leads to injuries, illnesses, death, and community problems, like crime and violence.²

North Carolina has a lower percentage of adults who drink, binge drink, and heavily drink when compared to the rest of the United States.³ However, North Carolina communities still experience many harms due to alcohol. In 2023, North Carolina experienced more than 5,600 deaths, 66,000 emergency department visits, and a loss of \$15.2 billion due to excessive alcohol use. These metrics, along with several others, are some of the highest values to date when compared to previous years. See the [Interactive Alcohol Data](#) at the bottom of this page for more information.

Every day, North Carolina experiences:



15 deaths due to excessive alcohol use
(over 5,600 per year)

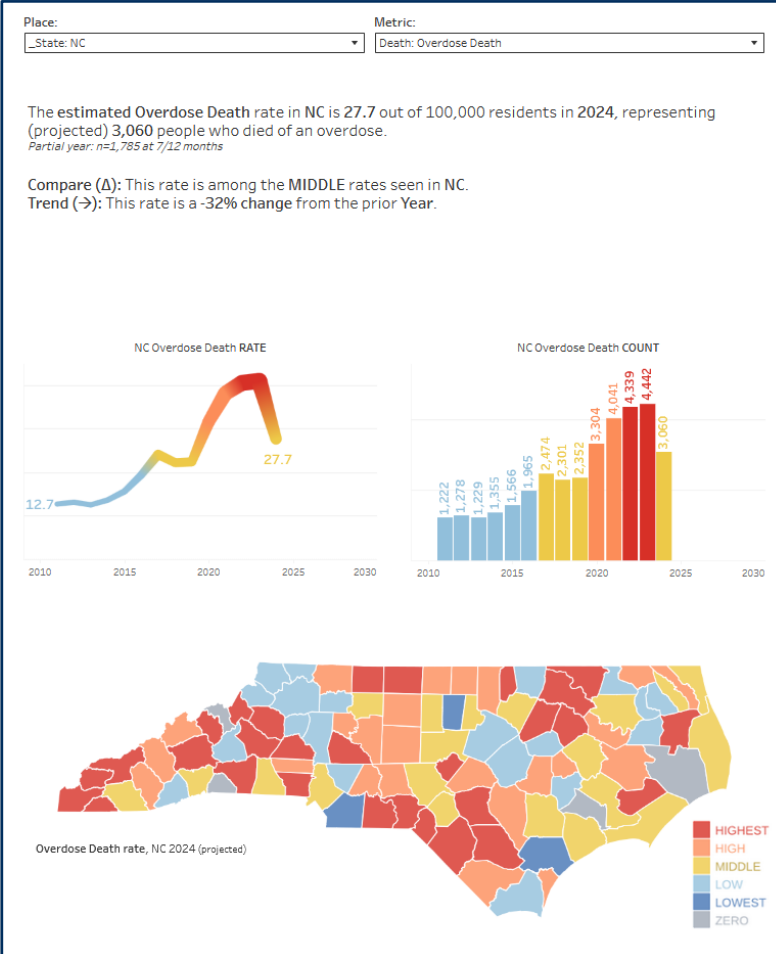


180 alcohol-related emergency department visits
(over 66,000 per year)



A loss of \$41.6 million due to excessive alcohol use
(\$15.2 billion per year)

The North Carolina Injury and Violence Prevention Branch (IVPB) monitors data related to alcohol use, alcohol-related harms, and the alcohol environment. This site includes monthly alcohol-related surveillance updates, statewide summary data, and interactive visuals of state and county-level metrics for partners across North Carolina to understand the impacts of excessive alcohol use in their communities.



Potential Surveillance Recommendations

Surveillance of Cannabis-Related Public Health Impacts

Public health surveillance measures should help inform interventions and prevention of harm.

This example diagram showcases the types of measures necessary to fully understand the impacts of alcohol in our communities.

Cannabis surveillance has many parallels.

Alcohol Surveillance Brainstorm

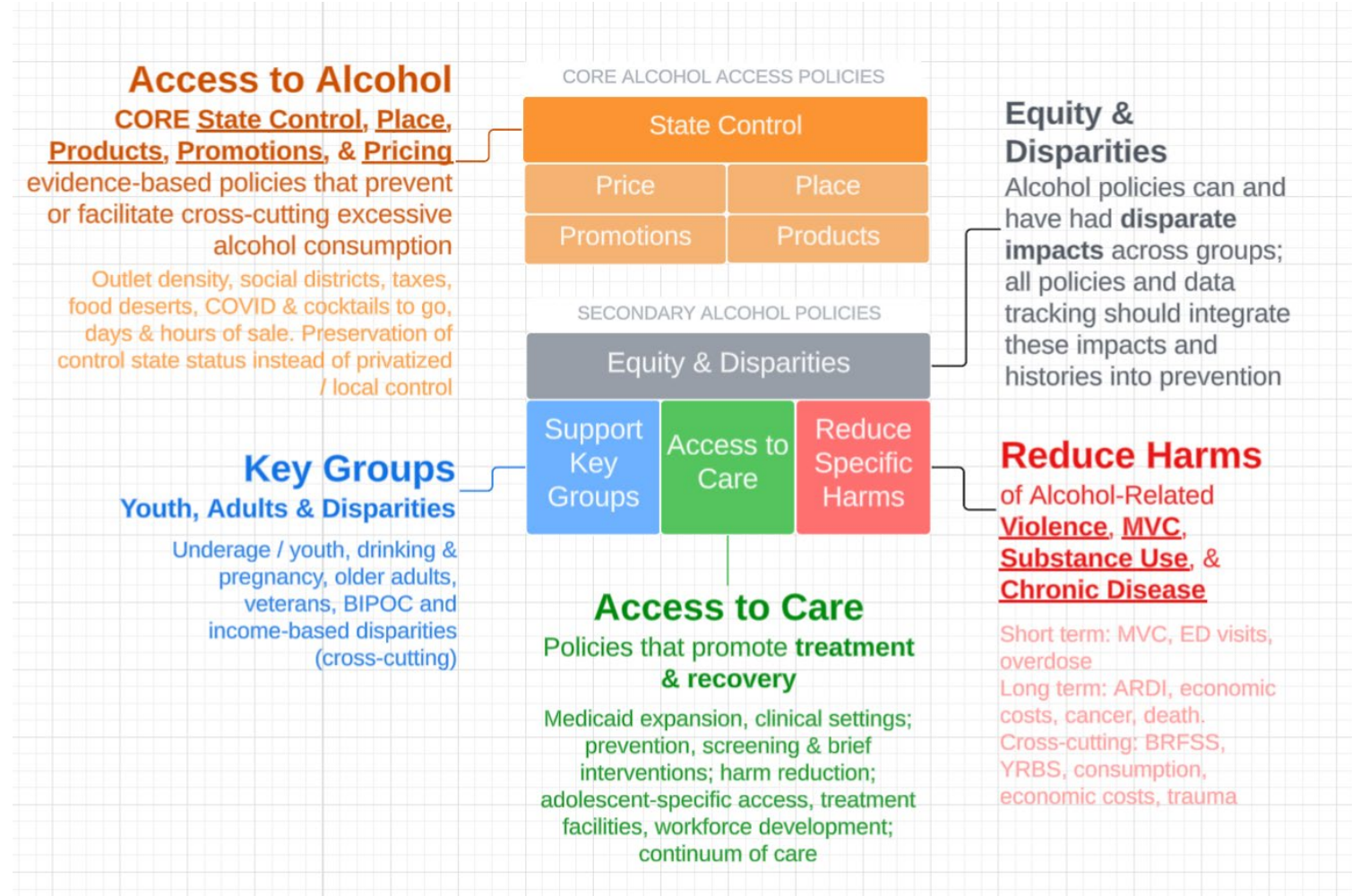


Image created by members of the North Carolina Statewide Excessive Alcohol Advisory Committee (NC SEAAC).

Cannabis-Related Health Outcomes

With support of additional staff time, existing data sources could be utilized to regularly track:

- ED visits related to cannabis use
- Fatalities involving cannabis (*currently limited*)
- Hospitalizations related to cannabis use
- EMS encounters related to cannabis use
- Poison Control calls related to cannabis
- Motor vehicle crashes involving cannabis

Infrastructure and staff time would be needed to additionally track:

- Adverse Events and Reactions related to cannabis products
- Comprehensive testing of fatalities for cannabis (NC OCME)

Cannabis Consumption and Impacts of the Built Environment

With support of additional staff time, existing data sources could be utilized to regularly track:

- Survey reported youth cannabis use – current, ever, age of first use
- Survey reported adult use – current, ever, reasons for use (*requires funding for supplemental state added questions*)

Infrastructure and staff time would be needed to additionally track:

- Perception of risk, protective and risk factors, method of use, access – survey data
- Consumption through sales data (amount, location, product type)
- Exposure through retail density – license data
- ALE violations

Other Societal Impacts of Cannabis Use

Infrastructure and staff time would be needed to additionally track:

- Children in foster care due to parental cannabis use
- School disciplinary actions related to cannabis
- Arrests/incarceration related to cannabis
- Environmental impacts of farming
- Occupational hazards on farms and in factories
- Others?

Resources

IVPB Epidemiology, Surveillance, and Informatics Unit

IVPB Injury Data Users Toolkit

What is it?

- Tool to help partners understand IVPB data processes, interpret injury data, and effectively use IVPB data resources.
 - Enhance injury data literacy
 - Promote the use of injury data to guide prevention strategies

What is included?

- Injury Data Briefs
 - Overviews of IVPB data and data processes
 - Epidemiology Concepts (Epi 101)
 - Injury Topic Specific Briefs
- IVPB Data Resource Inventory
 - Tool to help find the right IVPB data resource
- Other Injury Data Resources

Understand
Injury Data with
**Eddie the
Epidemiologist**



Injury & Violence Prevention Branch (IVPB) Data Support available!

Book time with an IVPB epidemiologist to discuss available data products, to talk through custom data requests, or for general data questions.

[IVPB Data Request Policy](#)

[IVPB Data Support Bookings](#)

IVPB Data Support

SELECT A SERVICE

Overdose Data Support

Book time with Mary Beth to discuss overd...
30 minutes

Alcohol Use & Related Harms Data Support

Book time with Mary Beth to discuss alcoho...
30 minutes

General Injury Data Support

Book time with Shana to discuss general inj...
30 minutes

Suicide and Firearm Data Support

Book time with Shana to discuss suicide an...
30 minutes

NCDHHS, DPH, Injury and Violence Prevention Branch | Cannabis Prevention and Treatment Subcommittee | Dec. 16, 2025

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North Carolina Opioid and Prescription Drug Abuse Advisory Committee (NC OPDAAC)

NC OPDAAC was created to develop and implement a statewide strategic plan to combat the problem of prescription drug use in North Carolina. It's evolved into a community of practice for anyone working to address the opioid epidemic from prescribers, treatment, recovery, and community groups, families who have lost loved ones to overdose, health systems, pharmaceutical industry, harm reduction, and law enforcement. All perspectives are welcomed and heard.

North Carolina State Excessive Alcohol Advisory Committee (NC SEAAC)

NC SEAAC was established to develop and implement a statewide action plan to address excessive alcohol use and its related harms in North Carolina. Meetings focus on excessive alcohol use prevention priorities presented by subject matter experts. Participants have the opportunity to meet and network with other partners across the state.

Questions?

SubstanceUseData@dhhs.nc.gov

**Injury and Violence Prevention Branch
NCDHHS, Division of Public Health**

Alcohol Data Dashboard



Overdose Data Dashboard



Cannabis Infographic



Injury Data Users Toolkit



Schedule Data Support

