

# Increase in emergency department visits after use of cannabidiol oil – North Carolina

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## Background

- In January 2018, Carolina Poison Center (CPC) notified North Carolina Division of Public Health (NCDPH) about an increase in calls regarding adverse effects after Cannabidiol (CBD) oil use
- Reported symptoms have not typically associated with CBD oil use, but are consistent with other substances, including synthetic cannabinoids
- Cannabidiol is one of two main cannabinoids derived from the cannabis or hemp plant
- CBD oil use can be via inhalation (using a vape device), ingestion, or sublingually
- Federally, it is a Schedule 1 controlled substance; in North Carolina it is legal for treatment of seizure conditions and for research
- The U.S Food and Drug Administration has not found any product containing CBD to be safe or effective and has not approved it for the treatment or prevention of any disease or condition
- NC DPH investigated to determine if recent emergency department (ED) visits associated with CBD oil had increased



Figure 1. Example of a refillable vape device (photo credit: Sally Herndon)

## Methods

- Time period: January 1, 2015–April 20, 2018
- Searched for key words in Emergency Department visit chief complaint and triage notes in the North Carolina Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT)
- Case definitions:
  - Probable:** report of CBD oil use and  $\geq 1$  of the following symptoms: nausea and vomiting, altered mental status, anxiety, seizures, tachycardia or palpitations, loss of consciousness, and hallucinations
  - Suspect:** report of vape oil use and  $\geq 1$  of the above symptoms
- Described demographic characteristics, symptoms, and geographic distribution

## Results

- Total of 66 cases identified from January 1, 2015–April 20, 2018; Majority of cases began in August 2017 (83%) (Figure 1)
- Mainly male (71%), white (60%), young adults (average age = 27 years) (Table 1)
- Serious symptoms reported since August 2017 (n=55) include: loss of consciousness (18%), tachycardia/palpitations (18%) and altered mental status (27%) (Table 2)
- Cases were widely distributed throughout the state (Figure 3)

Figure 2. Distribution of Probable and Suspect cases with reports of adverse reactions after CBD oil use, by month of ED visit (n=66) January 1, 2015 – April 20, 2018

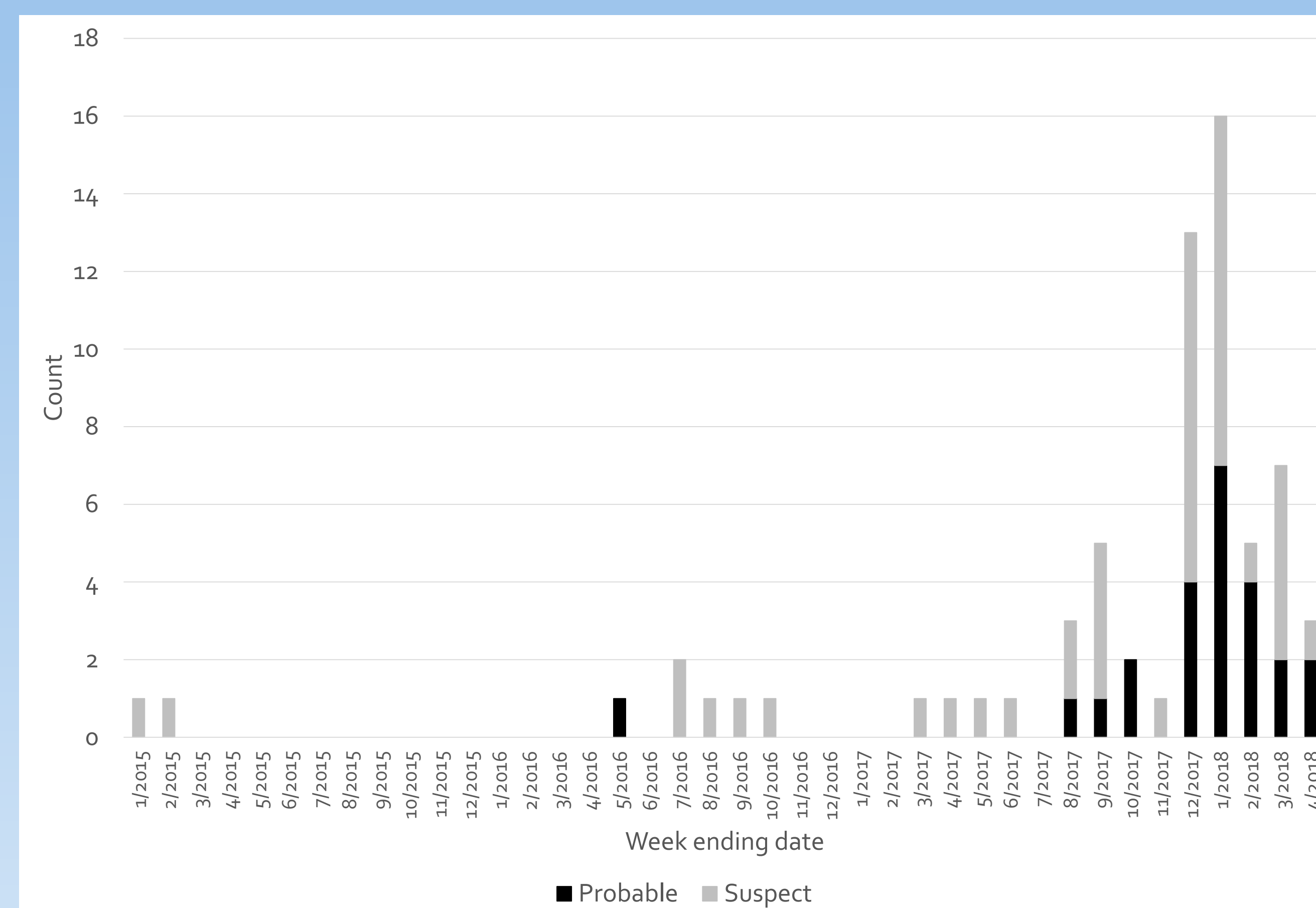


Figure 3. Map of the geographic distribution of suspect and probable cases (n=55) August 1, 2017 – April 20, 2018

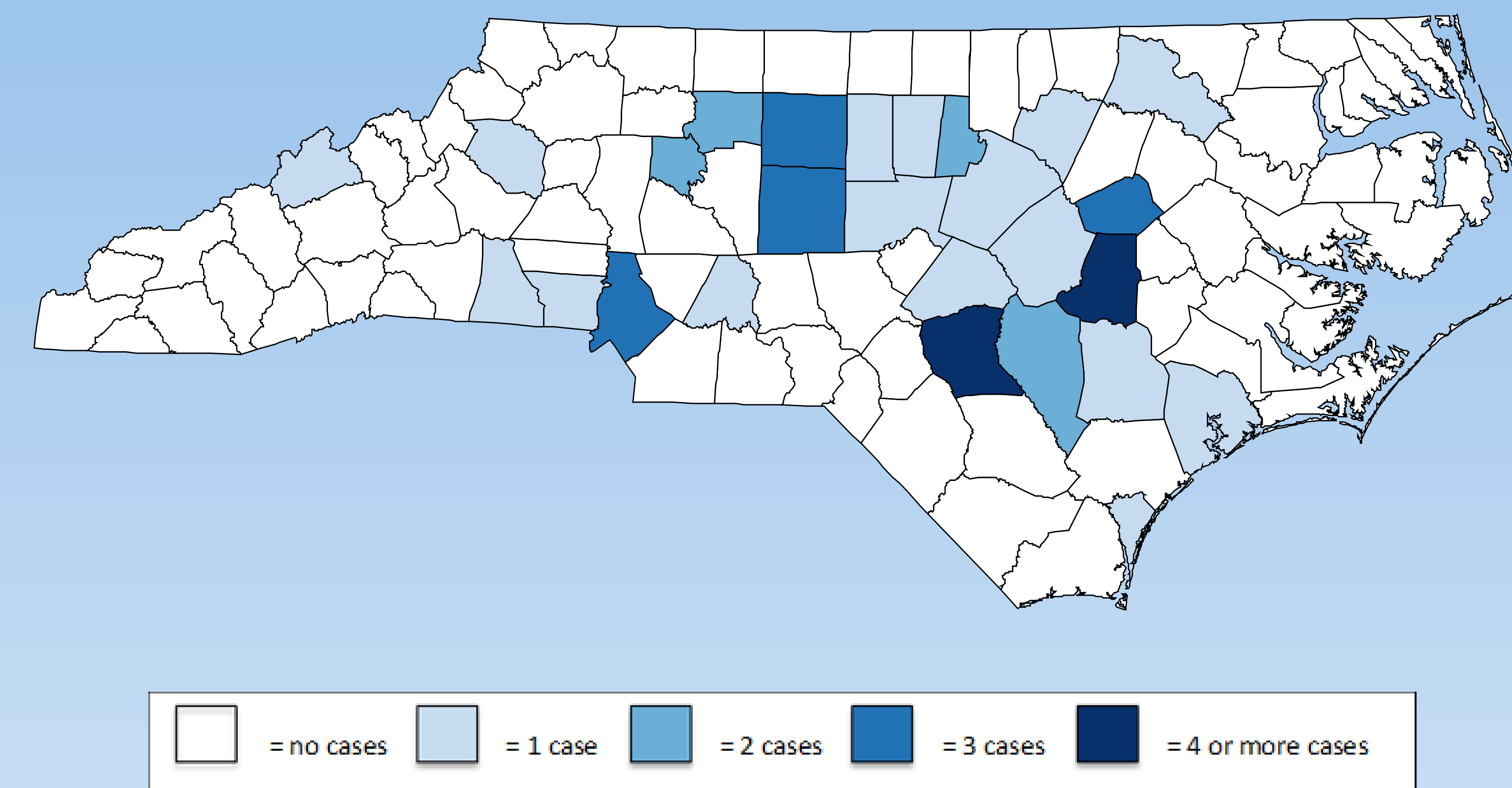


Table 1. Characteristics of patients – North Carolina August 1, 2017 - April 20, 2018

Characteristic	N=55
Sex	
Female	16 (29%)
Male	39 (71%)
Average Age (range)	27 years (10 - 67)
Race	
White	33 (60%)
African American	17 (31%)
Other	5 (9%)
Disposition	
Admitted	5 (9%)
Discharged	45 (83%)
Left without/against advice	3 (5%)
Transferred	1 (2%)
Missing	1

Table 2. Symptoms of patients – North Carolina August 1, 2017 - April 20, 2018

Symptom	N=55
Altered Mental Status	15 (27%)
Hallucinations	4 (7%)
Anxiety	15 (27%)
Loss of consciousness	10 (18%)
Nausea with vomiting	18 (33%)
Seizure	7 (13%)
Mydriasis	1 (2%)
Tachycardia/palpitations	10 (18%)
Muscle twitches	4 (7%)

## Limitations

- Only used data from NC DETECT to identify cases
- NC DETECT triage notes were not available for all ED visits
- Product was not collected for testing
- No brand name identified

## Control Measures & Conclusions

- Indication of [potential product contamination or adulteration](#)
- In March - NC DPH and CPC [issued a press release](#) warning that products labeled as CBD oil might contain other substances
- NCDPH and CPC are continuing to monitor ED visits and CPC calls
- Widespread availability of CBD oil and a lack of regulation poses an [emerging public health concern](#)

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