Using Syndromic Surveillance to Inform Local Public Health Response: Monitoring Cannabinoid Hyperemesis Syndrome in Snohomish County, Washington

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Introduction: The Snohomish County Health Department (SCHD) began monitoring cannabinoid hyperemesis syndrome (CHS) in 2025 using syndromic surveillance data.

Background: SCHD aimed to capture CHS visit counts and demographic information to inform the development of local response strategies to this emerging public health problem.

Methods: Syndromic surveillance is a near real-time, population-based healthcare encounter monitoring system. With the release of the new CHS ICD-10 diagnosis code, SCHD began tracking CHS healthcare encounters in emergency departments using the Washington State Department of Health's syndromic surveillance program, RHINO (Rapid Health Information Network).

Results: The figure and table show CHS emergency department (ED) visits from October 2025 – August 2026 in Snohomish County (**245 visits**) and Washington State (**3,451 visits**).

Figure 1: CHS ED Visits in Snohomish County vs. Washington State, October 2025 – August 2026

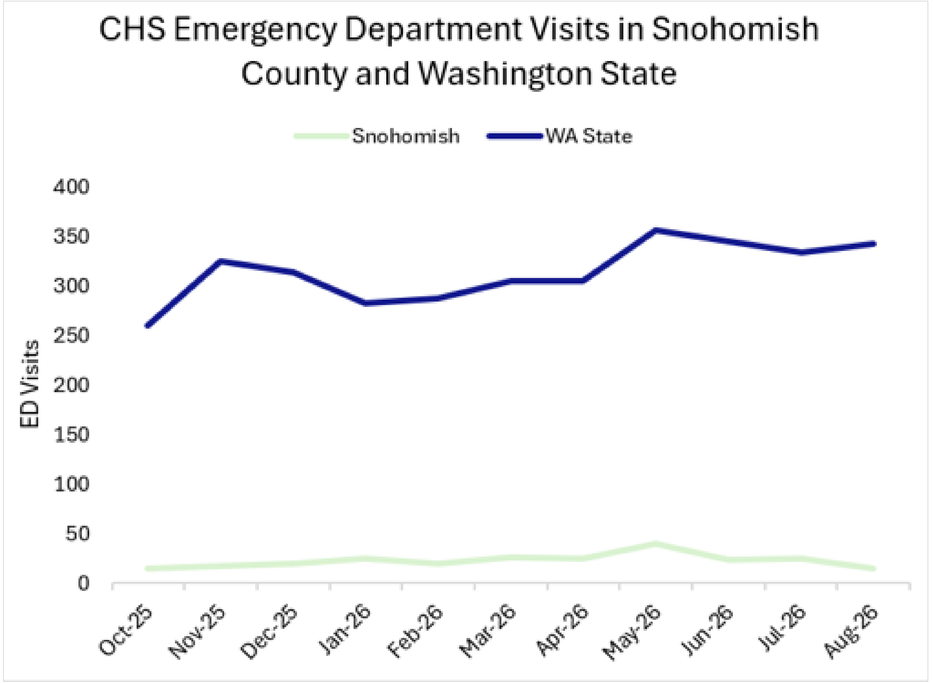

Table 1. Demographic Data for CHS Emergency Department Visits in Snohomish County, WA, October 2025 – August 2026

Gender	Count (%)
Female	144 (59%)
Male	101 (41%)
Age	
0-19	18 (7%)
20-34	132 (54%)
35-44	37 (15%)
45-54	32 (13%)
55+	26 (11%)
Race	
American Indian or Alaska Native	< 10
Asian	< 10
Black or African American	21 (9%)
Native Hawaiian or Other Pacific Islander	< 10
White	162 (66%)
Other/Not Reported	41 (17%)
Ethnicity	
Hispanic	17 (7%)
Not Hispanic/Latino	205 (84%)
Not Reported	21 (9%)

Conclusion: This CHS data snapshot provides a first look at groups who may be disproportionately impacted by the condition. With continued monitoring, future public health response may include:

- Engaging local coalitions serving impacted communities.
- Connecting with ED providers
- Gathering qualitative data on existing knowledge, concerns and public perceptions surrounding CHS.

SNOHOMISH COUNTY HEALTH DEPARTMENT

Cannabis-Associated Versus Non-Cannabis Cyclic Vomiting Syndrome: Acute Presentation, Kidney Injury, and Resource Use in a National Cohort (2019–2022)

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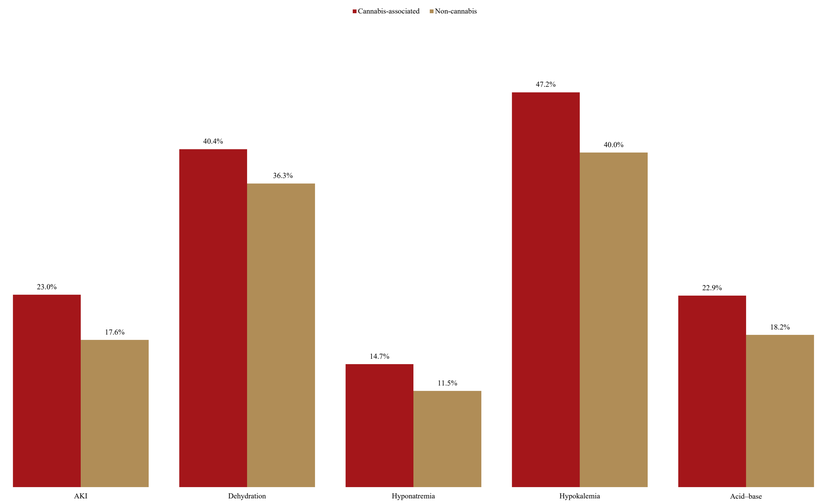
Background & Objective

Cannabis-associated CVS (cannabinoid hyperemesis) is increasingly recognized among cannabis users, but its acute presentation and hospital burden compared with non-cannabis CVS remain unclear. Acute presentations were assessed through AKI as the primary outcome, with dehydration, hyponatremia, hypokalemia, and acid-base disturbances as secondary exploratory outcomes. Resource use was assessed by length of stay and total charges. We hypothesized that cannabis-associated CVS would have greater AKI and acute derangements than non-cannabis CVS.

Methods

- National Inpatient Sample, 2019–2022; adult admissions with a principal diagnosis of CVS (ICD-10-CM R11.15), organic causes excluded.
- Cannabis-associated defined by F12.x or T40.7x codes vs non-cannabis.
- Survey-weighted comparisons across acute derangements and resource use.
- Multivariable survey-weighted logistic regression for AKI, adjusting for age, sex, race, payer, income, year, hospital characteristics, and Elixhauser comorbidity.

Acute derangements (% of admissions)

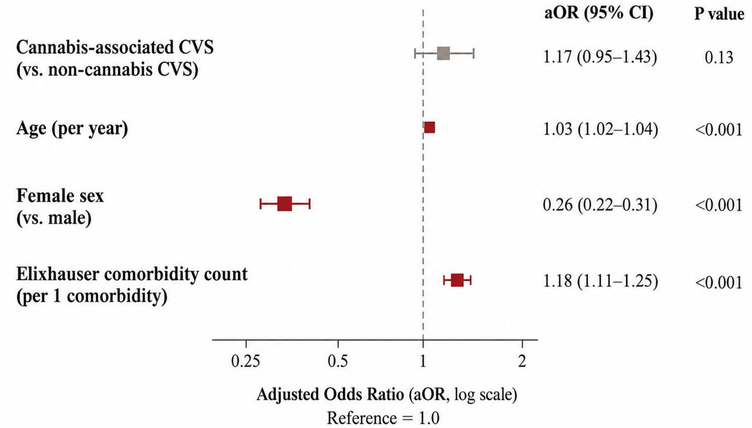


58.2% of 3,528 CVS admissions were cannabis-associated

34.6 vs 42.4 yrs younger on average; 93.3% presented via the ED
age range: 18–80 vs 18–90 years.

2.5 vs 3.3 days shorter length of stay and lower total charges

Adjusted predictors of AKI (aOR, 95% CI)



Crude AKI was higher with cannabis (23.0% vs 17.6%), but the association vanished after adjustment **(aOR 1.17; 95% CI 0.95–1.43; P=0.13).** The primary hypothesis was not supported. Although cannabis-associated CVS had higher crude AKI rates, cannabis was not independently associated with AKI after multivariable adjustment**.** Only hypokalemia remained significantly associated after adjustment. AKI was associated with older age and greater comorbidity burden, while female sex was associated with lower odds of AKI.

Conclusion: Cannabis-associated CVS represented the majority of CVS hospitalizations and had higher crude rates of AKI, volume depletion, and electrolyte/acid-base disturbances. After multivariable adjustment, cannabis-associated CVS was not independently associated with AKI, while hypokalemia remained significantly associated. Cannabis-associated CVS was independently associated with shorter length of stay and lower total hospital charges. These findings highlight the importance of monitoring volume status, renal function, and electrolyte abnormalities in patients with cannabis-associated CVS.

Data: HCUP National Inpatient Sample (AHRQ), 2019–2022.

Cannabinoid Hyperemesis Syndrome (CHS): A Comparative Review of 11 Clinical Guidelines and Pathways

Isheeta Gupta MD, MPH, MSW | Sharon Garrett MPH, MA | Beatriz Carlini PhD, MPH

Introduction

- ***Cannabinoid Hyperemesis Syndrome*** is an increasingly recognized complication of chronic cannabis use, characterized by cyclic nausea/vomiting, abdominal pain, and relief with hot bathing.
- CHS-related emergency department visits are rising substantially.
- A dedicated **ICD-10-CM code for CHS (R11.16)** became effective October 1, 2025, improving standardized diagnosis, surveillance, and tracking of CHS-related healthcare utilization.
- Treatment guidelines and clinical pathways for CHS have been developed by some clinicians on their own behalf or on behalf of professional organizations.
- However, there are no national guidelines that have been disseminated widely to foster appropriate care for this disabling condition.

Methods

We conducted a comparative review of **11 English-language CHS guidelines, clinical pathways, and evidence-based recommendations.**

Guidelines were selected if they were issued by a professional organization, published in peer-reviewed literature, or developed by a large health system, and if they addressed CHS diagnosis or management in the emergency department, inpatient, discharge, or outpatient setting.

Each guideline was reviewed using these categories:

- Diagnostic criteria
- ED management
- Hospital management
- Discharge medications
- Outpatient management
- Follow-up care
- Special considerations

Results

Professional Organizations

- **American Gastroenterological Association (AGA)** Clinical Practice Update on Diagnosis and Management of Cannabinoid Hyperemesis Syndrome: Commentary- *Rubio-Tapia et al.* (USA)
- **Royal College of Emergency Medicine (RCEM)** Best Practice Guideline: Suspected Cannabinoid Hyperemesis Syndrome in Emergency Departments -*Humphries et al.* (UK)
- **Society for Academic Emergency Medicine (SAEM) GRACE-4**: Alcohol Use Disorder and Cannabinoid Hyperemesis Syndrome Management in the Emergency Department. (USA)

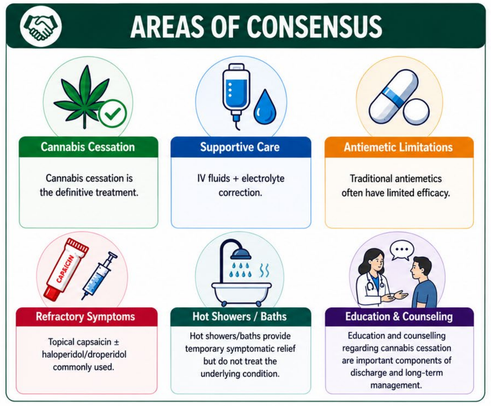
Health Systems Pathways

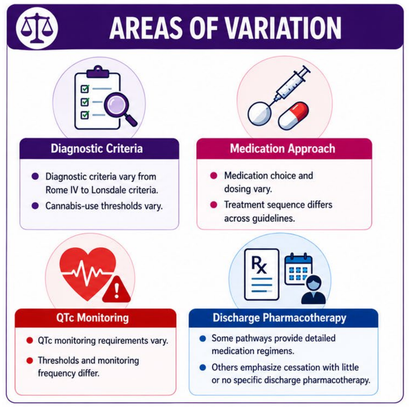
- **Johns Hopkins All Children's Hospital (JHACH)** — Cannabinoid Hyperemesis Syndrome Clinical Pathway. (USA)
- **Children's Minnesota** — Cannabinoid Hyperemesis Syndrome (CHS) Clinical Pathway. (USA)
- **University of California, San Francisco (UCSF)** — Cannabinoid Hyperemesis Syndrome Clinical Pathway. (USA)
- **Boston Children's Hospital** — Cannabinoid Hyperemesis Syndrome Clinical Guideline/Pathway. (USA)

Peer-Reviewed

- ***LaPoint et al.*** - Cannabinoid Hyperemesis Syndrome: Public Health Implications and a Novel Model Treatment Guideline. (USA)
- ***Won et al.*** - Managing Cannabinoid Hyperemesis Syndrome in the Emergency Department. (USA)
- ***Hsu et al.*** - Management of Cannabinoid Hyperemesis Syndrome: A Review of Current Treatment Strategies and a Proposed Treatment Algorithm. (USA)
- ***Meyer et al.*** - Cannabinoid Hyperemesis Syndrome: Diagnosis and Management. (USA)

Main Findings





Discussion

- Despite broad consensus on cannabis cessation and supportive care, substantial variation exists in diagnosis, pharmacologic management, monitoring, and discharge planning.
- Differences were especially notable in the choice of pharmacologic treatment including haloperidol, droperidol, capsaicin, and olanzapine.
- Pediatric and adult-focused guidelines differed in diagnostic thresholds, medication protocols, and follow-up recommendations
- These findings highlight the need for standardized, evidence-based CHS guidance spanning ED treatment through discharge and longitudinal care.

Conclusion & Future Implications

- Current guidance remains fragmented. Variation in diagnostic criteria, medication selection, monitoring, and discharge planning limits consistent care across settings.
- Standardized diagnostic pathways are highly needed, especially with the new CHS-specific ICD-10 code offering an opportunity to improve recognition, documentation, and surveillance.
- Better comparative evidence is needed to define optimal acute treatment, including head-to-head evaluation of haloperidol, droperidol, capsaicin, dosing strategies, and safety monitoring.
- Future CHS care should extend beyond symptom control by embedding cannabis cessation support, CUD treatment, referral pathways, and clinician education into routine care to reduce recurrence and repeat utilization.

References

- Jack B, Susi A, Reeves P, Nylund CM. Increasing trends of cannabinoid hyperemesis syndrome in youth: The grass is not always greener. J Pediatr Gastroenterol Nutr. 2025; 80: 638-643. doi:10.1002/jpn3.12469
- https://adai.uw.edu/icd-10-code-chs/

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Support for this project came from the ADAI Summer Undergraduate Internship Program and the University of Washington's Dedicated Cannabis Account.

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Cannabinoid Hyperemesis Syndrome: Cannabis Use Patterns and Symptom Profiles

Codi Peterson[1]; Jill Simonian[2]; Megan Mbengue[3]; Jacqueline Higgins[4]; Riley Kirk[5]; Katie Nava[6]; Ryan Lasinski[7]; Ariana Nelson[8]

[1]UC Irvine SPPS; [2]UC San Diego SSPPS; [3]EntheaCare; [4]Plant Amplified Wellness; [5]Network of Applied Pharmacognosy; [6]Patient Advocate/Independent Researcher; [7]WVU SOM; [8]UC Irvine SOM Anesthesiology

LINK TO PAPER

2026 ADAI Symposium Digital Poster

BACKGROUND / OBJECTIVE

Cannabinoid hyperemesis syndrome (CHS) causes recurrent nausea and vomiting associated with cannabis use, but detailed patient-level data on cannabis exposure and early symptom patterns remain limited.

Objective: characterize cannabis use and symptom profiles, including differences by route and sex.

METHODS / APPROACH

- Anonymous online survey; September–December 2024
- Recruited through CHS focused social media communities
- Adults (≥18 years) with suspected/diagnosed CHS and cannabis use before symptom onset
- Final analytic cohort: n = 1,134
- Descriptive and subgroup analyses; UCI IRB #4558

Limitations: Self-reported data, including suspected CHS, and social-media recruitment

DEMOGRAPHICS

- 70.5% female
- 67.6% 18–34 years
- 86.3% USA

ACKNOWLEDGMENTS

CHS: A Safe Place to Recover and Learn,vTessa Datillo (“Tessa420”), all survey participants.

RESULTS: CANNABIS EXPOSURE

Frequent, long-term cannabis exposure was common

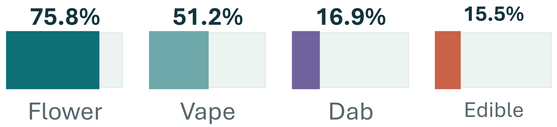
96.5% daily use

45% ≥6x/day

65.4% >3 yrs use before onset

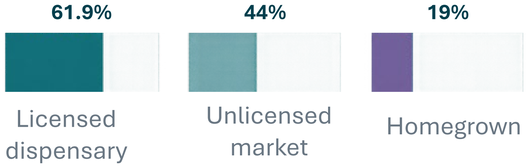
61.9% licensed source

Common methods of administration



participants could select up to two methods

Source of Cannabis



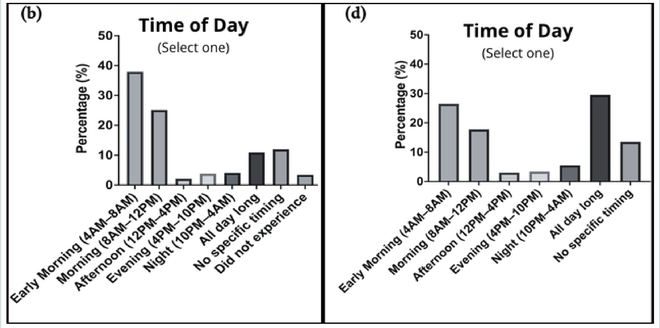
Multiple sources could be reported.

Frequent exposure was consistent despite variation in route, duration, dose, and source

RESULTS: SYMPTOM TIMING

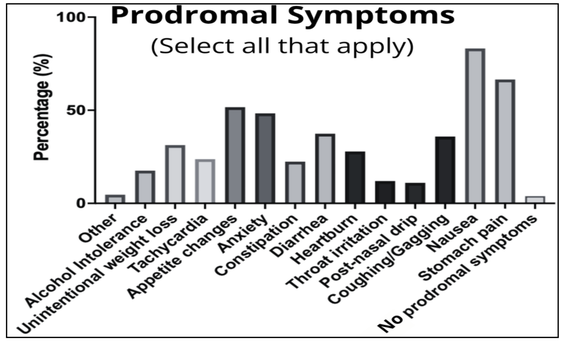
Prodromal symptoms were morning clustered, whereas hyperemetic symptoms often lasted all day

Symptom Timing



Morning symptoms have long been described in CHS; these data quantify their timing and show how the pattern differs during hyperemesis

Prodromal Symtoms

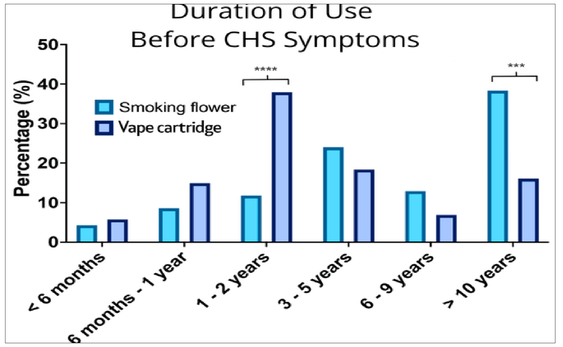


Nausea (83.2%) and stomach pain (66.5%) predominated, while appetite changes (51.7%) and anxiety (48.3%) were also common during the prodrome

RESULTS: ROUTE & SEX DIFFERENCES

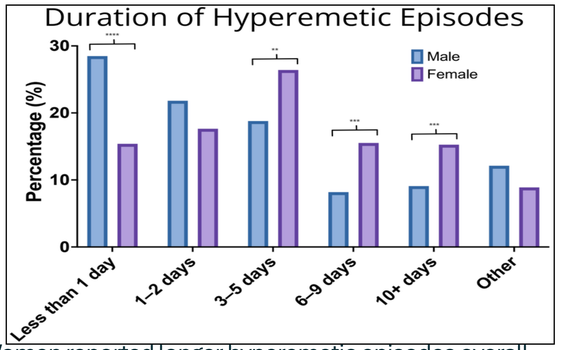
Analysis revealed differences in route and sex

Route and Time-to-onset pattern



Exclusive vape users reported shorter time to CHS symptom onset than exclusive flower smokers ($p<0.0001$) [n=366; flower n=279, vape n=87]

Sex differences



Women reported longer hyperemetic episodes overall ($p<0.0001$) and were more likely to report episodes lasting ≥10 days ($p<0.001$)

CONCLUSION

CHS was characterized by frequent cannabis use and a morning-predominant prodrome. While several hallmark features were consistent across groups, clinical presentation was more heterogeneous, with notable differences by sex and route of administration; these findings may support earlier clinical recognition and prospective validation of CHS diagnostic criteria

UCI IRB #4558 (exempt)
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Contesting Cannabinoid Hyperemesis Syndrome (CHS): Reactions to the New ICD-10 Code

Anya Wai, Sofia Del Fiol, Sharon Garrett, Beatriz Carlini

Introduction

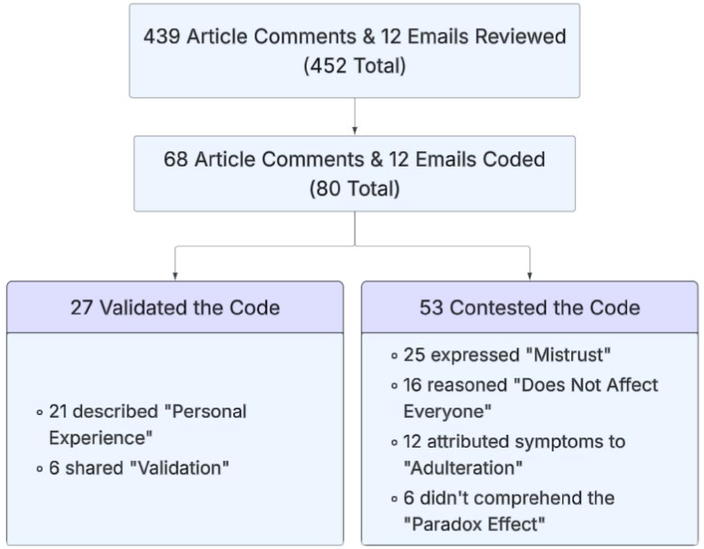
- First described in 2004, CHS recently received an International Classification of Diseases (ICD-10) code in October 2025.
- UW Medicine released a media announcement about the new ICD-10 code, capturing media interest and generating 62 news articles worldwide referencing UW.
- This study analyzes reactions to the new ICD-10 code in the 62 articles' comment sections and direct emails addressed to UW researchers from the original media announcement.

Methods

- 452 total responses reviewed: 68 publicly available comments, 12 emails analyzed, 48 unique respondents.
- If <200 comments, all were reviewed; If >200 comments, the first 200 comments sorted by "Best" were reviewed.
- Responses unrelated to the ICD-10 code were excluded.
- 2 independent researchers read comments noting relevant reasons for validating or contesting the code.
- Codes and definitions were developed by consensus and applied to all 80 responses.

Code Definitions for Validating	
Personal Experience	Applauds CHS recognition, citing personal experience or knowing someone affected
Validation	Validates the ICD-10 code or CHS as a condition for various reasons
Code Definitions for Contesting	
Adulteration	Attributing symptoms to something other than the cannabis itself
Doesn't Affect Everyone	Cites personal or other positive experiences to undermine the existence of CHS
Paradox Effect	Disbelief that cannabis can cause nausea or pain due to established antiemetic properties
Mistrust	Mistrust in larger systems (e.g., government, healthcare, or established knowledge sources)

Findings



QUOTES VALIDATING:

"I had over 66 Er visits in a four-year period…I can attest to this being a very real thing."

[Personal Experience]

"I've experienced it twice over the years and the last time I ended up in the ER, this article describes it exactly. Thought I had ebola."

[Personal Experience]

"One thing to keep in mind is this usually only develops in daily, moderately heavy users who use cannabis for a period of years, even then only about a third of that group will have any issues but it's a completely real condition."

[Validation]

QUOTES CONTESTING:

"You've never heard of it because its fake. This article is brought to you by the alcohol industry."

[Mistrust]

"When my mother was being treated for cancer, her oncologists recommended weed as an antidote to nausea -- so how could it be causing nausea?"

[Paradox Effect]

"Ive been smoking Marijuana for 20 years and never had a single issue. It helps with my anxiety and insomnia. I think the biggest issue is people are buying fake carts and laced bud."

[Does Not Affect Everyone; Adulteration; Paradox Effect]

Conclusion

- CHS is a contested disease.
- Responses demonstrated a spectrum of opinions on CHS, with the majority contesting the condition's existence.
- Healthcare providers may need strategies to effectively communicate about CHS with patients to address this diverse spectrum.

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Support for this project came from the ADAI Summer Undergraduate Internship Program and the University of Washington's Dedicated Cannabis Account.

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