My Injured Adolescent Patient Has a Positive Toxicology Screen—What Should I Do about That?

Balancing Health, Privacy, and the Public Good

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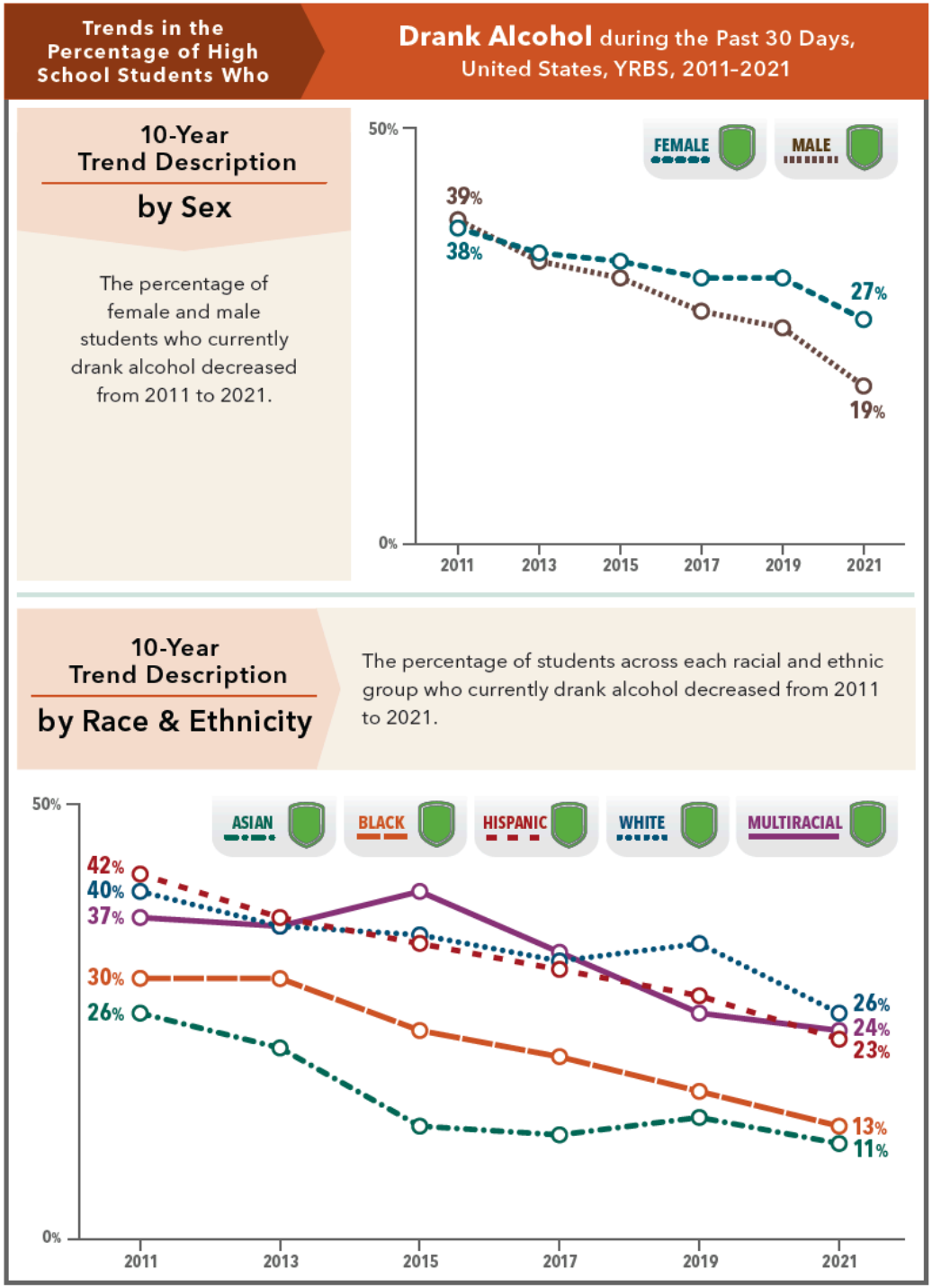
Objectives

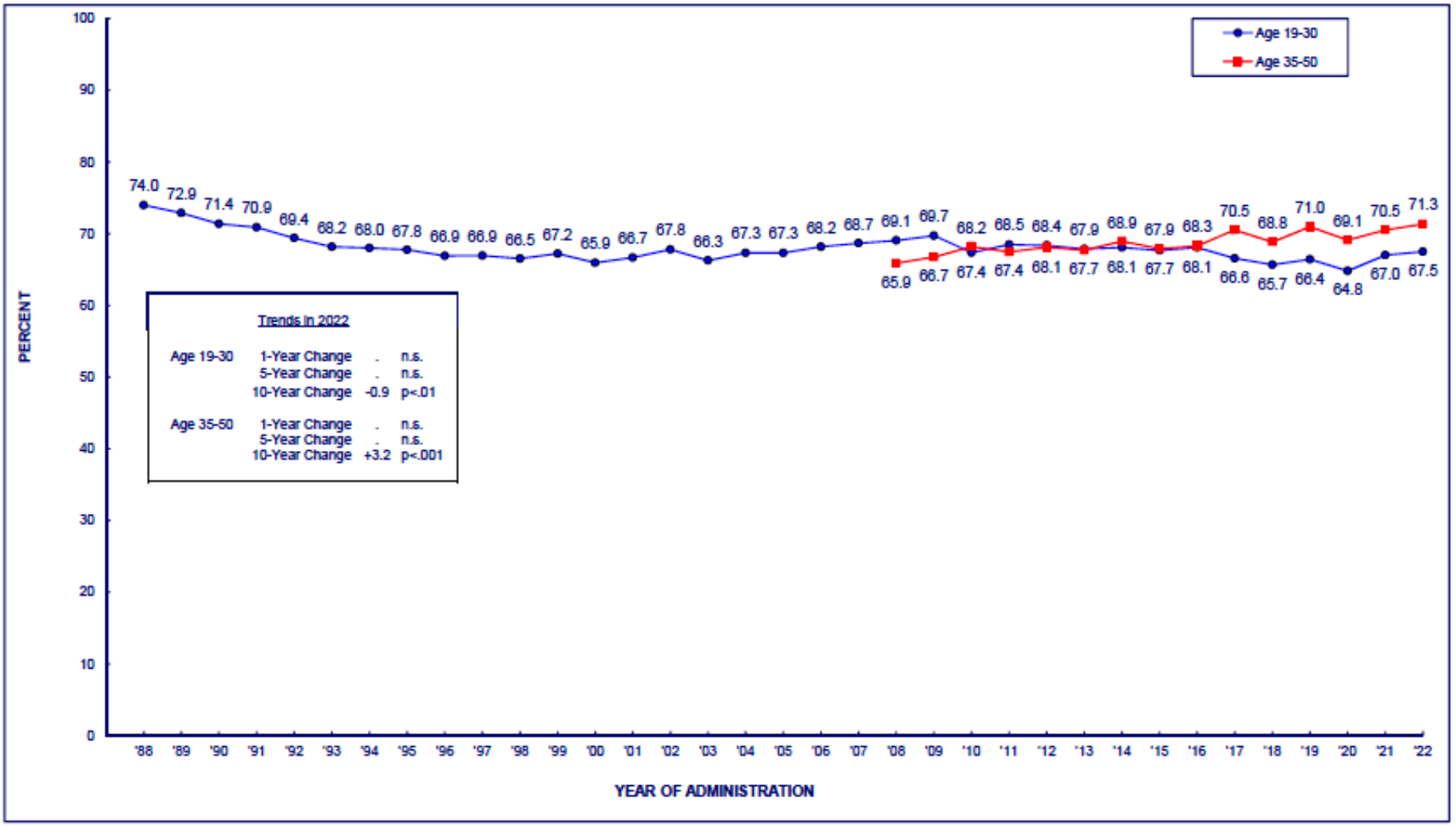
- Explore the patterns of use of alcohol and drugs
- Describe the problem of adolescent drug use and its relationship to trauma
- Share the results of screening - UISFCH
- Explore the ethics of screening generally and how it pertains to our patients in this context
- Explore the legal framework with respect to duties of confidentiality and reporting in the case of injured persons and the potential for conflict of interests faced by providers
- Conclusions for the requirements for ethical screening



CDC. Youth risk behavior survey. Data summary and trends report. 2021.

ALCOHOL

Trends in 30-Day Prevalence among Respondents of Modal Ages 19 through 50, by Age Group

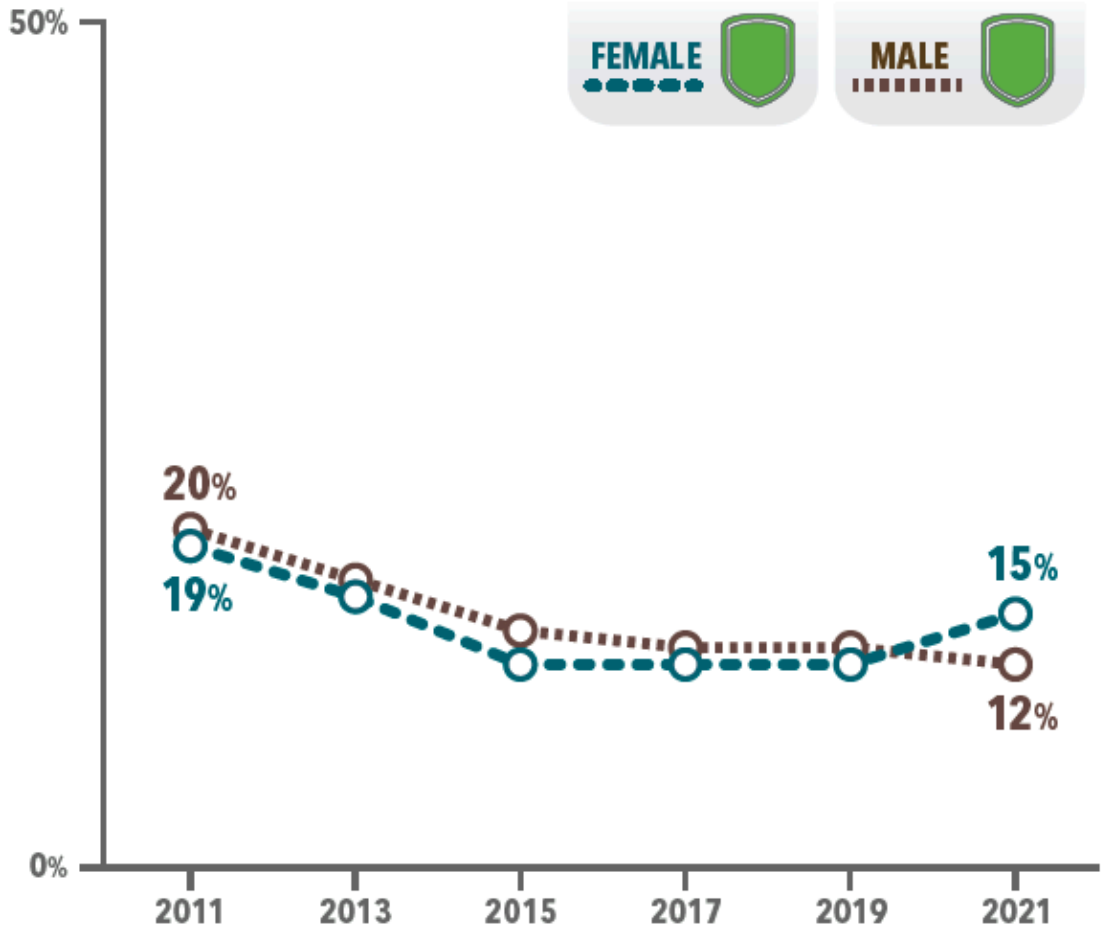


Patrick, M. E., Miech, R. A., Johnston, L. D., & O'Malley, P. M. (2023). Monitoring the Future Panel Study annual report: National data on substance use among adults ages 19 to 60, 1976-2022 (PDF). Monitoring the Future Monograph Series. Ann Arbor, MI: Institute for Social Research, University of Michigan.

10-Year Trend Description

by Sex

The percentage of female and male students who had ever used select illicit drugs decreased from 2011 to 2021.

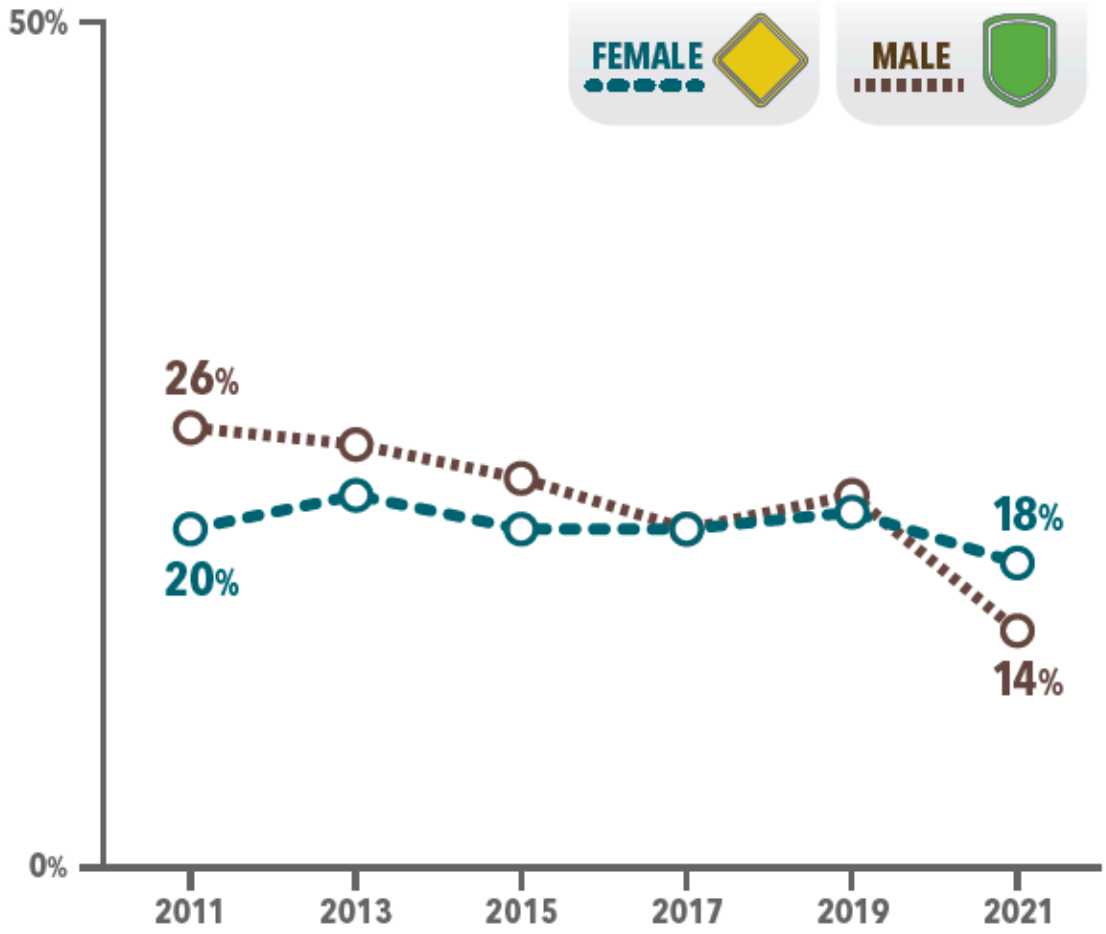


CDC. Youth risk behavior survey. Data summary and trends report. 2021.

10-Year Trend Description

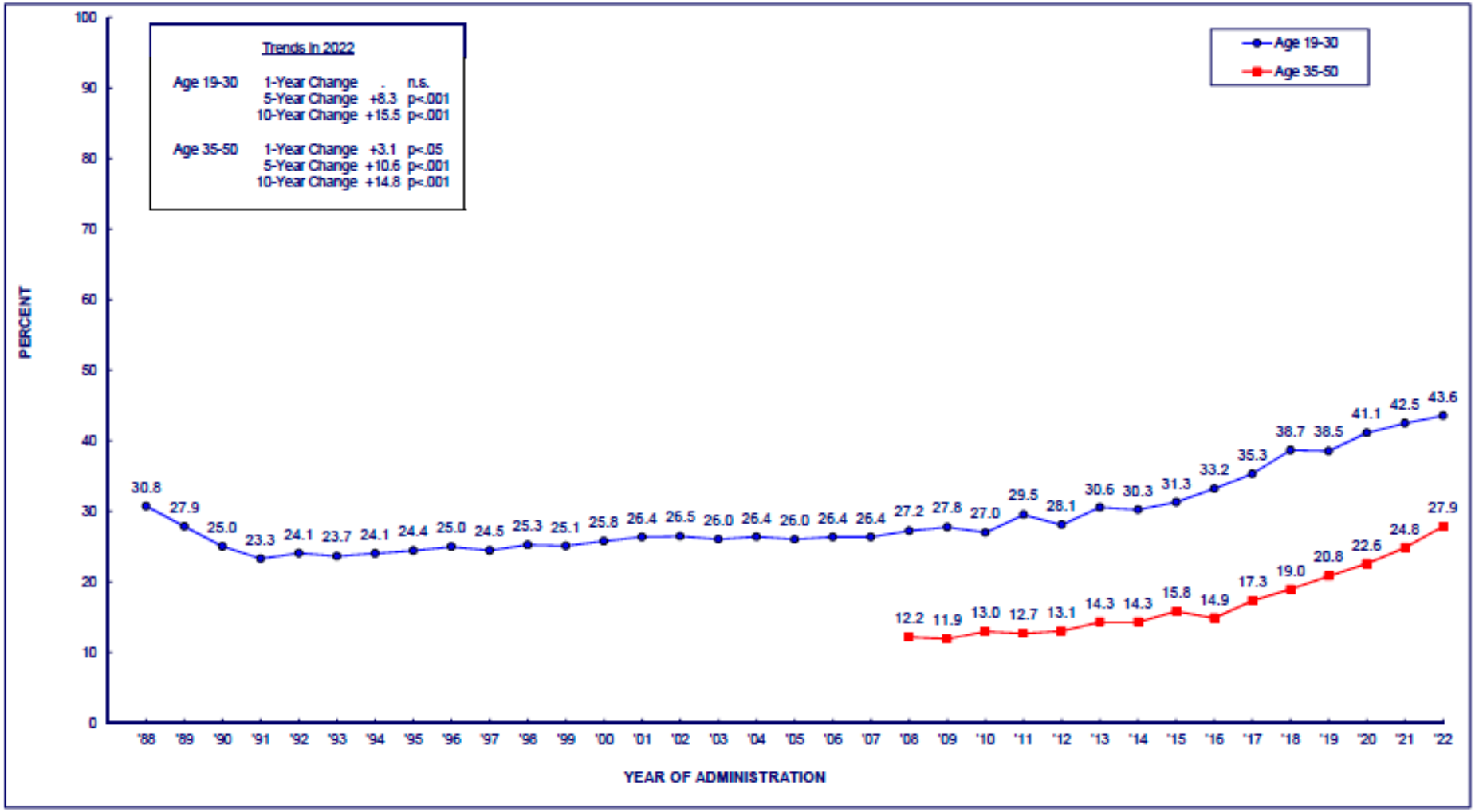
by Sex

The percentage of male students who currently used marijuana decreased from 2011 to 2021. The percentage of female students who currently used marijuana did not change.



CDC. Youth risk behavior survey. Data summary and trends report. 2021.

MARIJUANA
Trends in 12-Month Prevalence among Respondents of Modal Ages 19 through 50, by Age Group



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2022 National Survey on Drug Use and Health (NSDUH) Release

- Among people aged 12 or older in 2022, 59.8% (or 168.7 million people) used tobacco products, vaped nicotine, used alcohol, or used an illicit drug in the past month
- In 2022, marijuana was the most commonly used illicit drug, with 22.0% of people aged 12 or older (or 61.9 million people) using it in the past year
- Among people aged 12 or older in 2022, 3.2% (or 8.9 million people) misused opioids (heroin or prescription pain relievers) in the past year
- In 2022, 991,000 people aged 12 or older (or 0.4%) misused prescription fentanyl or used illegally made fentanyl (IMF) in the past year, including 686,000 people (or 0.2%) who used IMF in the past yea

Relationship to trauma?

And to adolescent health generally?

Trauma Recidivism - alcohol

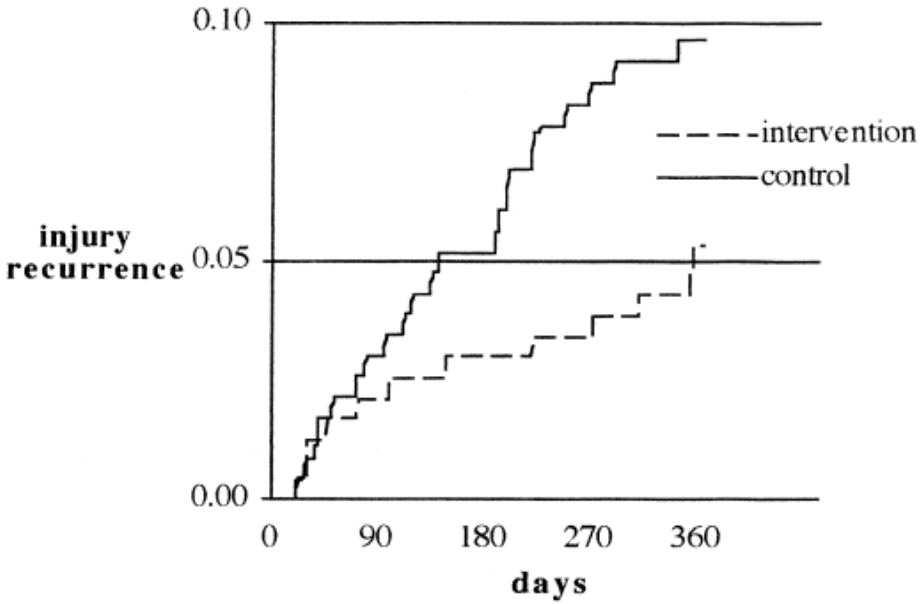

Figure 2. Risk of repeat injury requiring treatment in the Harborview Medical Center Emergency Department or admission to the trauma center. The analysis is for King County residents at 1 year follow-up and controls for gender, SMAST score, age, injury intent, and injury severity score (hazard ratio 0.53, 95% CI 0.26-1.07).

Gentilello LM, Rivara FP, Donovan DM, Jurkovich GJ, Daranciang E, Dunn CW, et al. Alcohol interventions in a trauma center as a means of reducing the risk of injury recurrence. Ann Surg. 1999;230(4):473-80; discussion 80-3.

Trauma and drug use in adolescents

- Risk taking behavior generally
- Significantly higher detection rates in injured
  - Higher in intentional vs accidental
- More severe injuries in screen+ patients
- Higher mortality rates
- Poorer outcomes
- Rehabilitative challenges

Table 1 Comparison of adolescent blunt trauma patients with and without a positive toxicology screen

	Positive toxicology screen (n = 188)	Other blunt trauma (n = 1842)	*P*
Demographics			
Sex, n (%)			
Male	138 (73.4)	1208 (65.6)	
Female	50 (26.6)	634 (34.4)	
Age (y)	17.2 ± 1.2	15.5 ± 1.9	<.001
Race, n (%)			
White	171 (91.0)	1538 (83.5)	
Black	11 (5.9)	258 (14.0)	
Other	6 (3.2)	46 (2.5)	
Hometown, n (%)			
Urban	100 (53.2)	1094 (59.4)	
Rural	88 (46.8)	748 (40.6)	
Self-pay	51 (27.1)	239 (13.0)	<.001
Injury severity			
GCS	11.8 ± 4.6	13.7 ± 3.3	<.001
ISS	16.7 ± 11.2	10.4 ± 9.1	<.001
Emergent operation, n (%)	39 (20.7)	235 (12.8)	<.001
ICU patients length of stay, n (%)	87 (46.3)	381 (20.7)	<.001
ICU (d)	6.2 ± 6.0	4.0 ± 7.7	<.001
Hospital (d)	7.3 ± 8.1	4.8 ± 7.2	<.001
Outcomes			
FIM score	10.5 ± 2.2	11.2 ± 1.7	<.001
Disposition, n (%)			
Home	146 (77.7)	1594 (86.5)	<.001
Rehab/NH	25 (13.3)	172 (9.3)	<.005
Mortality, n (%)	12 (6.4)	48 (2.6)	<.005

ICU indicates intensive care unit; rehab, rehabilitation facility; NH, nursing home.

Draus JM, Jr., Santos AP, Franklin GA, Foley DS. Drug and alcohol use among adolescent blunt trauma patients: dying to get high? J Pediatr Surg. 2008;43(1):208-11.

Research Paper

Associations of cannabis use, use frequency, and cannabis use disorder with violent behavior among young adults in the United States

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ARTICLE INFO

Keywords:
Cannabis use
Cannabis use disorder
Violent behavior
Attacking someone with the intent to seriously hurt them

ABSTRACT

Background: Most violent crimes (52 %) are committed by adults aged 18–34, who account for 23 % of the US population and have the highest prevalence of cannabis use and cannabis use disorder (CUD). We examined whether and how associations of cannabis use, use frequency, and CUD with violent behavior (i.e., attacking someone with the intent to harm seriously) vary by sex in U.S. young adults.

Methods: Data were from 113,454 participants aged 18–34 in the 2015–2019 US National Surveys on Drug Use and Health, providing nationally representative data on cannabis use, CUD (using DSM-IV criteria), and violent behavior. Descriptive analyses and bivariate and multivariable logistic regression analyses were conducted.

Results: Among U.S. adults aged 18–34, 28.9 % (95 % CI = 28.5–29.2 %) reported past-year cannabis use (with/without CUD), including 20.5 % (95 % CI = 20.2–20.8 %) with non-daily cannabis without CUD, 4.7 % (95 % CI = 4.5–4.8 %) with daily cannabis use without CUD, 2.1 % (95 % CI = 1.9–2.2 %) with non-daily cannabis use and CUD, and 1.7 % (95 % CI = 1.5–1.8 %) with daily cannabis use and CUD. Past-year adjusted prevalence of violent behavior was higher among males with daily cannabis use but without CUD (2.9 %, 95 % CI = 2.4–2.7 %; adjusted prevalence ratio (PR) = 1.7, 95 % CI = 1.3–2.2) and males with daily cannabis use and CUD (3.1 %, 95 % CI = 2.3–4.0 %; adjusted PR = 1.8, 95 % CI = 1.3–2.4) than males without past-year cannabis use (1.7 %, 95 % CI = 1.6–1.9 %). Adjusted prevalence of violent behavior was higher among females with cannabis use regardless of daily cannabis use/CUD status (adjusted prevalence = 1.6–2.4 %, 95 % CIs = 0.9–3.2 %; adjusted PRs = 1.6–2.4, 95 % CI = 1.3–3.2) than females without past-year cannabis use (1.0 %, 95 % CI = 0.9–1.1 %).

Conclusions: Research is needed to ascertain the directionality of the associations between cannabis use and violent behavior and underlying sex-specific mechanism(s). Our results point to complex sex-specific relationships between cannabis use frequency, CUD, and violent behavior and highlight the importance of early screening for and treatment of CUD and of preventive interventions addressing cannabis misuse.

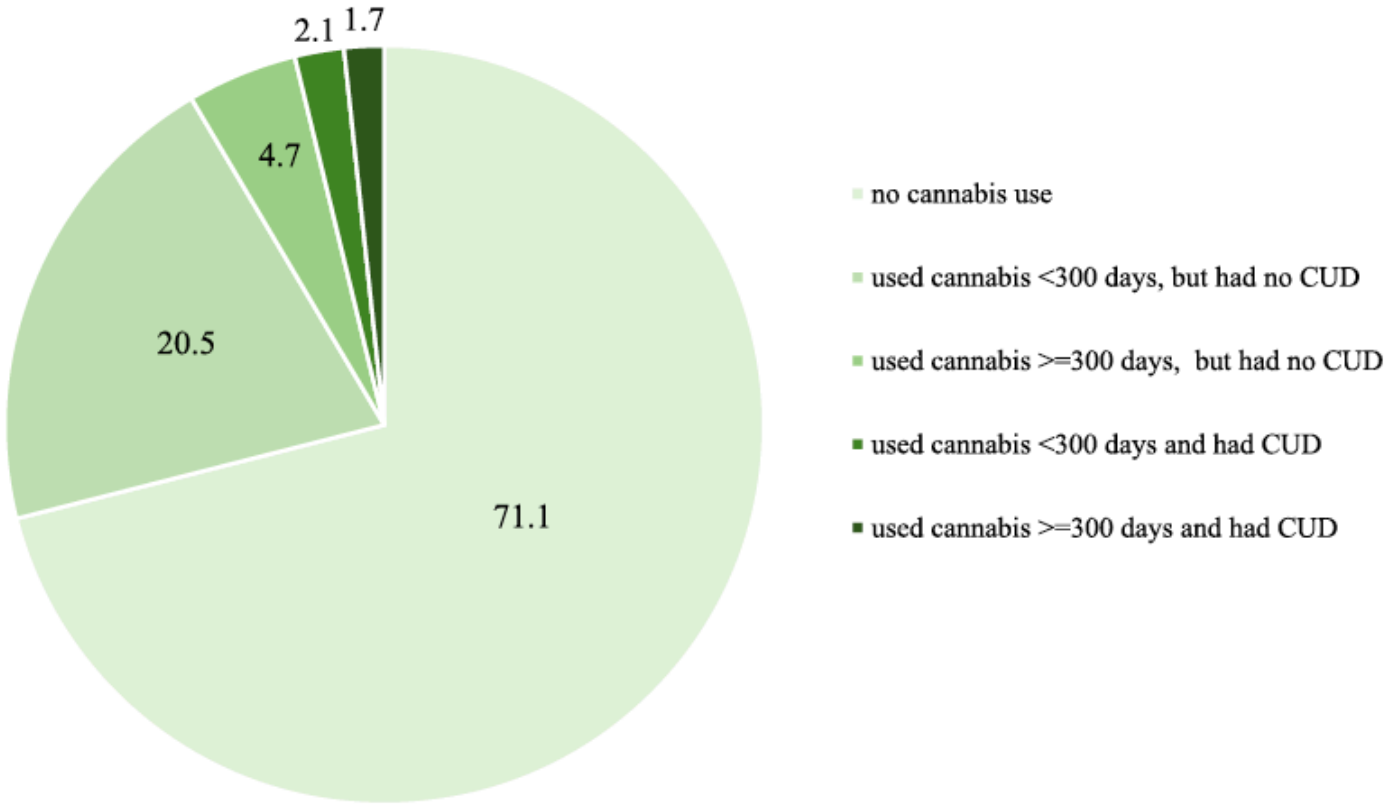

Fig. 1. Past-year prevalence of cannabis use, use frequency, and cannabis use disorder (CUD) among US adults aged 18–34, weighted percentage. Data source: 2015–2019 National Surveys on Drug Use and Health.

Volkow ND, Compton WM, Blanco C, Einstein EB, Han B. Associations of cannabis use, use frequency, and cannabis use disorder with violent behavior among young adults in the United States. Int J Drug Policy. 2024;128:104431.

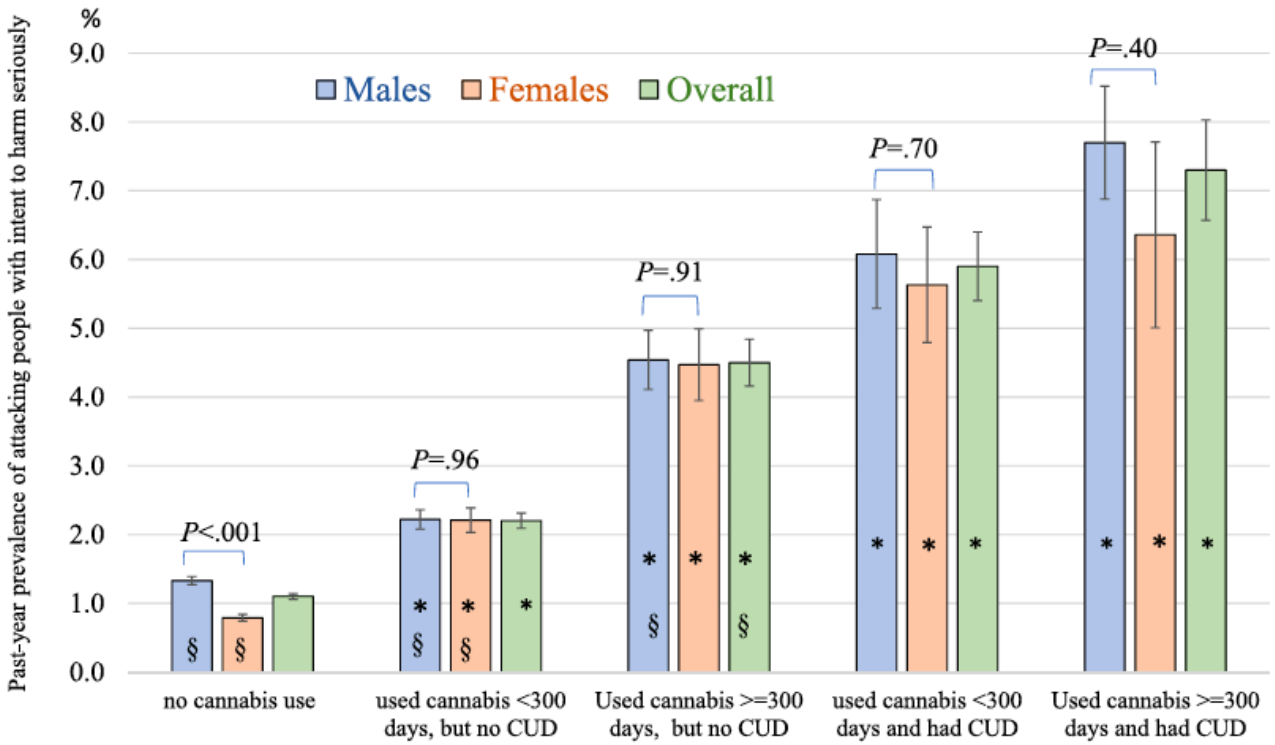

Fig. 2. Past-year prevalence of attacking people with intent to harm seriously by past-year cannabis use frequency and cannabis use disorder (CUD) among US adults aged 18–34, overall and by sex.

Data source: 2015–2019 National Surveys on Drug Use and Health. *: Within each group, the estimate was statistically significantly different ($P < .05$) from the corresponding estimate for no past-year cannabis use. §: Within each group, the estimate was statistically significantly different ($P < .05$) from the corresponding estimate for past-year cannabis use >=300 days and CUD. Error bar=standard error.

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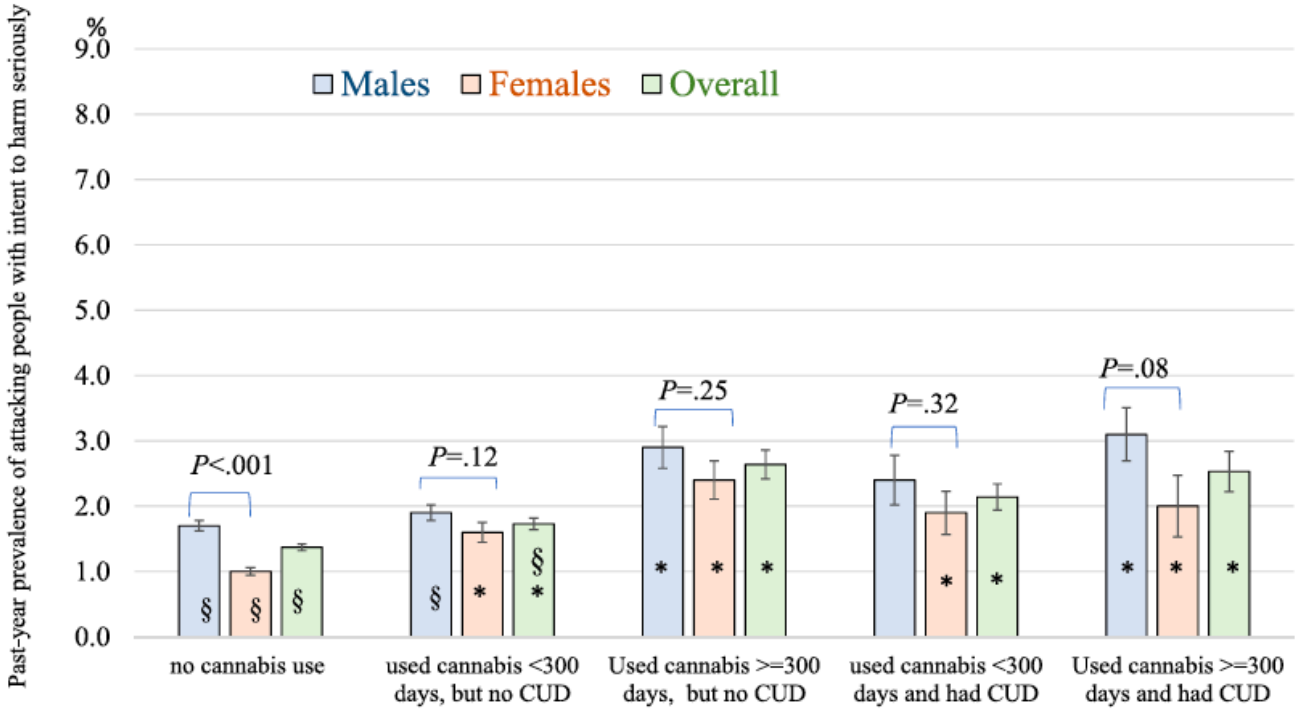


Fig. 3. Adjusted past-year prevalence of attacking people with intent to harm seriously by past-year cannabis use frequency and cannabis use disorder (CUD) among US adults aged 18–34, overall and by sex.

Data source: 2015–2019 National Surveys on Drug Use and Health. Each estimate was adjusted for survey year, age, race/ethnicity, education, marital status, metropolitan statistical area status, any mental illness, nicotine dependence, alcohol, methamphetamine, and cocaine use, use frequency, and use disorder, and prescription opioid, stimulant, and tranquilizer misuse, misuse frequency, and use disorders. *: Within each group, the estimate was statistically significantly different ($P < .05$) from the corresponding estimate for no past-year cannabis use. §: Within each group, the estimate was statistically significantly different ($P < .05$) from the corresponding estimate for past-year cannabis use >=300 days and CUD. Error bar=standard error.

Volkow ND, Compton WM, Blanco C, Einstein EB, Han B. Associations of cannabis use, use frequency, and cannabis use disorder with violent behavior among young adults in the United States. Int J Drug Policy. 2024;128:104431.

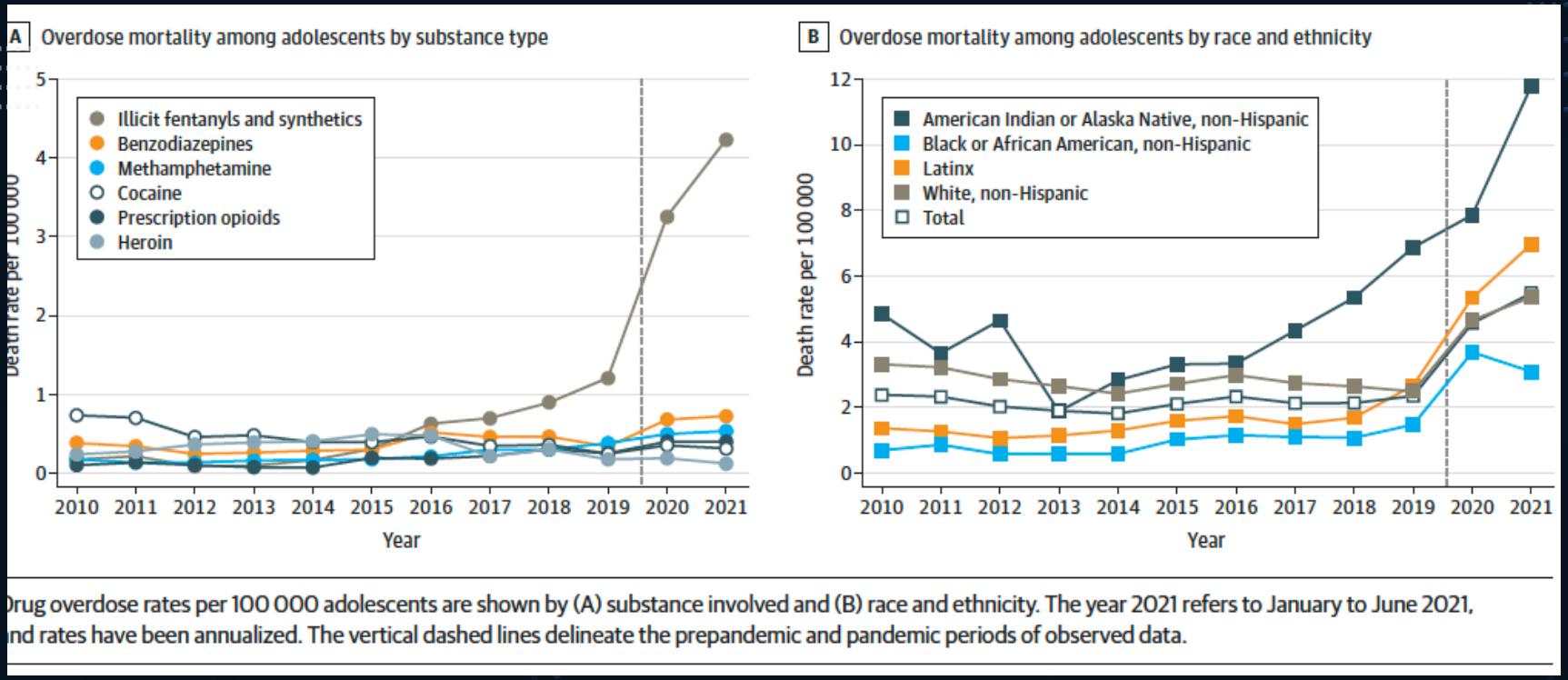
Psychosocial consequences of adolescent cannabis use

- Smaller social networks, lower social support, fewer peer and romantic relationships, greater affiliation with deviant and substance-using peers, lower relationship satisfaction, and more risky sexual behaviors.
- Lower-quality parent–child relationships.
- Greater risk of unemployment, lower occupational prestige, lower income, greater debt.
- Associated with risky behavior, delinquency, and justice system involvement in adolescence and adulthood.

Causal or Association?

Cannabis use in adolescence has potentially causal, deleterious effects on adolescent academic functioning and young adult socioeconomic outcomes despite little evidence suggesting a strong, causal influence on adult mental health or cognitive ability

Schaefer JD, Hamdi NR, Malone SM, Vrieze S, Wilson S, McGue M, et al. Associations between adolescent cannabis use and young-adult functioning in three longitudinal twin studies. Proc Natl Acad Sci U S A. 2021;118(14).



Drug overdose rates per 100 000 adolescents are shown by (A) substance involved and (B) race and ethnicity. The year 2021 refers to January to June 2021, and rates have been annualized. The vertical dashed lines delineate the prepandemic and pandemic periods of observed data.

Overdose deaths

Friedman J, Godvin M, Shover CL, Gone JP, Hansen H, Schriger DL. Trends in Drug Overdose Deaths Among US Adolescents, January 2010 to June 2021. Jama. 2022;327(14):1398-400.

2017 TQIP database 157450 admissions under 21 years

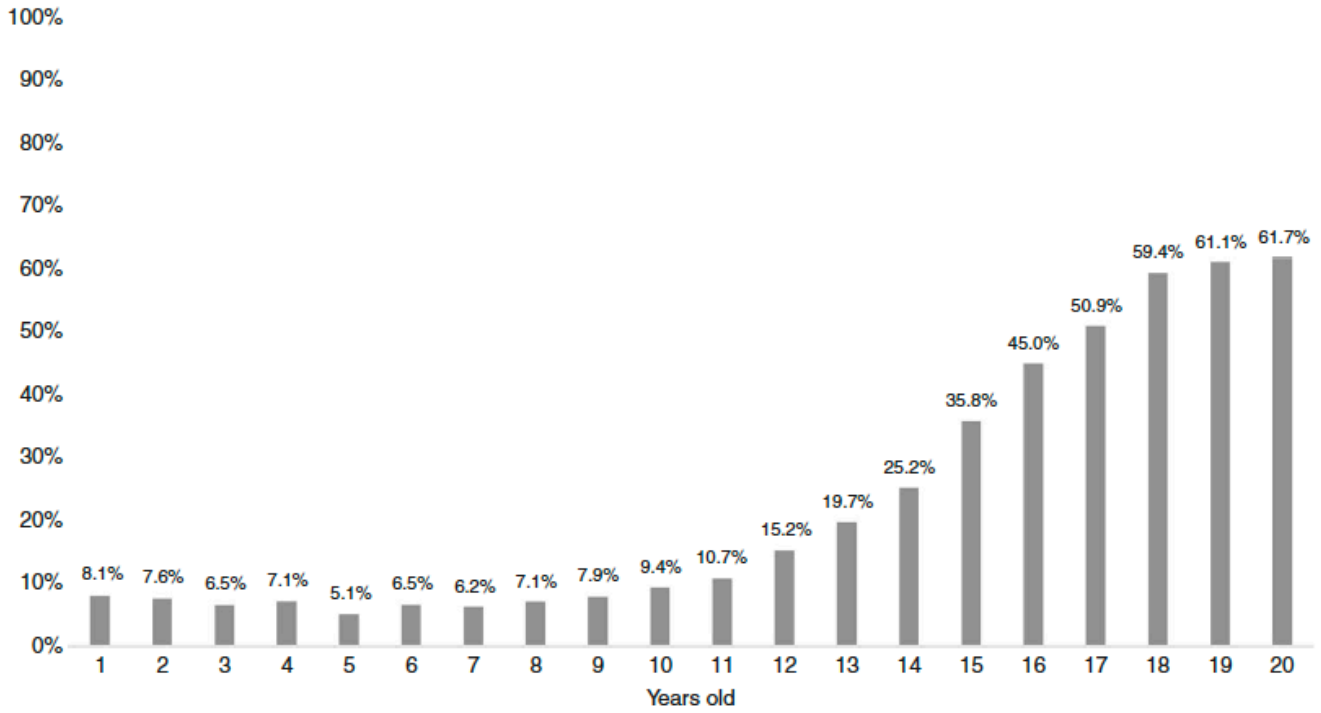


Fig. 1 Proportion of patients screened by age.

Maxwell BG, Lin S, Greene NH, Jafri MA. Kids grow up so fast: national patterns of positive drug/alcohol screens among pediatric trauma patients. Pediatr Res. 2021;89(4):767-9.

2017 TQIP database 157450 admissions under 21 years

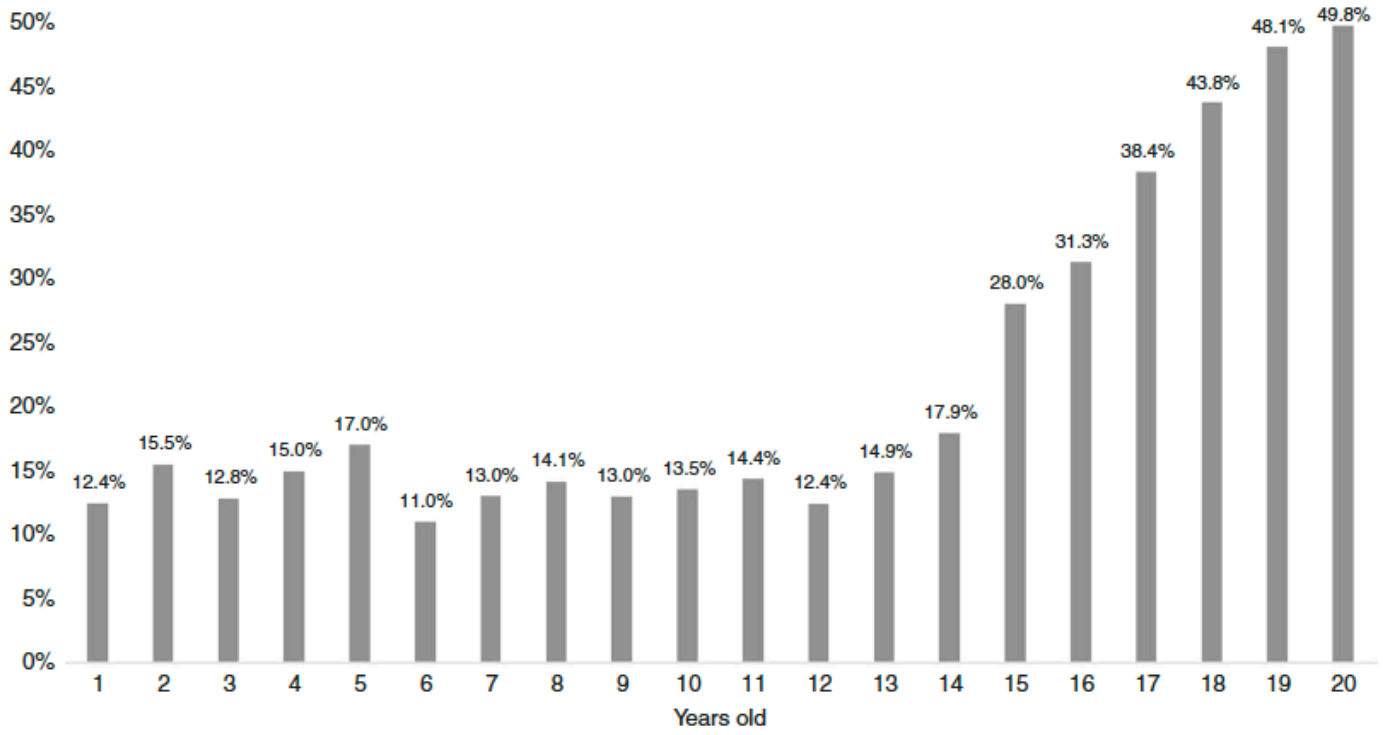


Fig. 2 Proportion of screens positive for drug or alcohol by age.

Maxwell BG, Lin S, Greene NH, Jafri MA. Kids grow up so fast: national patterns of positive drug/alcohol screens among pediatric trauma patients. Pediatr Res. 2021;89(4):767-9.

Pediatric trauma UISFCH

- 2015-2024
  - Separate cohort 2023-2024 more rigid screening criteria
- All admitted injured patients aged 13 to 17.99 years
  - Activations are highest severity of acute injury
  - Alerts are lower severity of acute injury
  - Consults are less acute post traumatic sequelae

5.30 Alcohol Misuse Screening—TYPE II

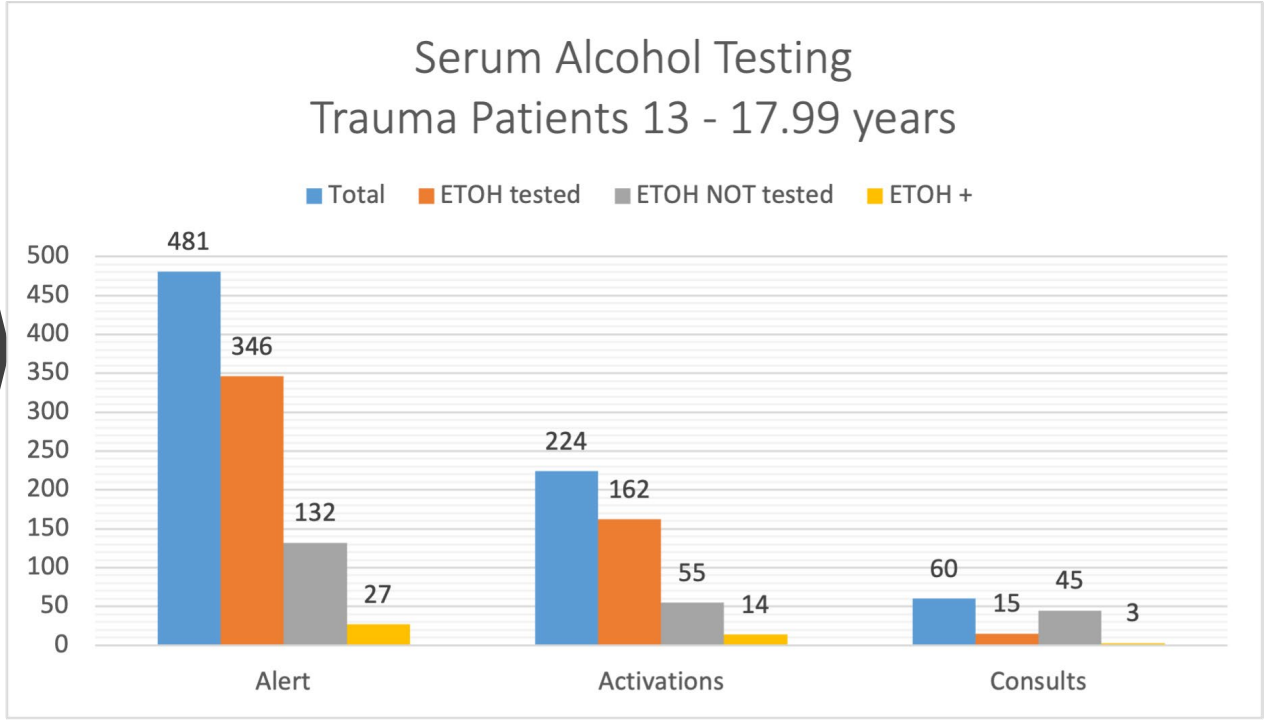
Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

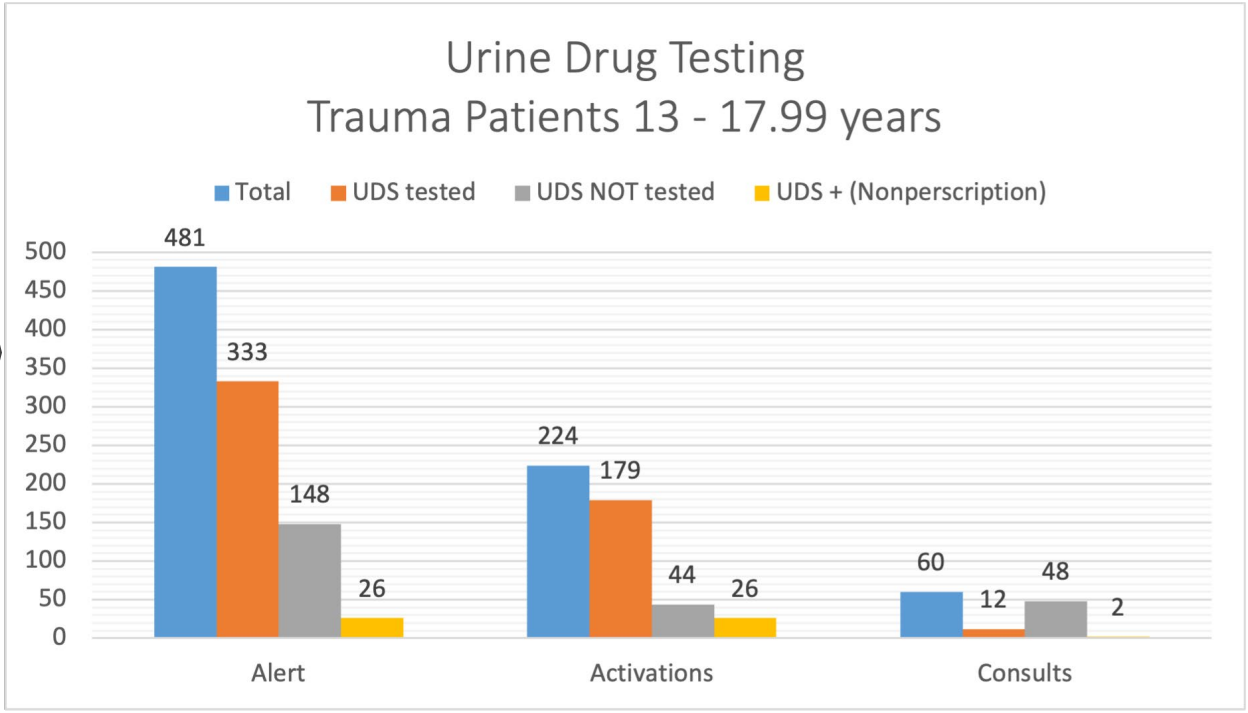
All trauma centers must screen all admitted trauma patients greater than 12 years old for alcohol misuse with a validated tool or routine blood alcohol content testing. Programs must achieve a screening rate of at least 80 percent.

Blood Alcohol screening 2015-2022



Positive Screen (67% screened)	8%	9%	20%
Overall Positive		8%	

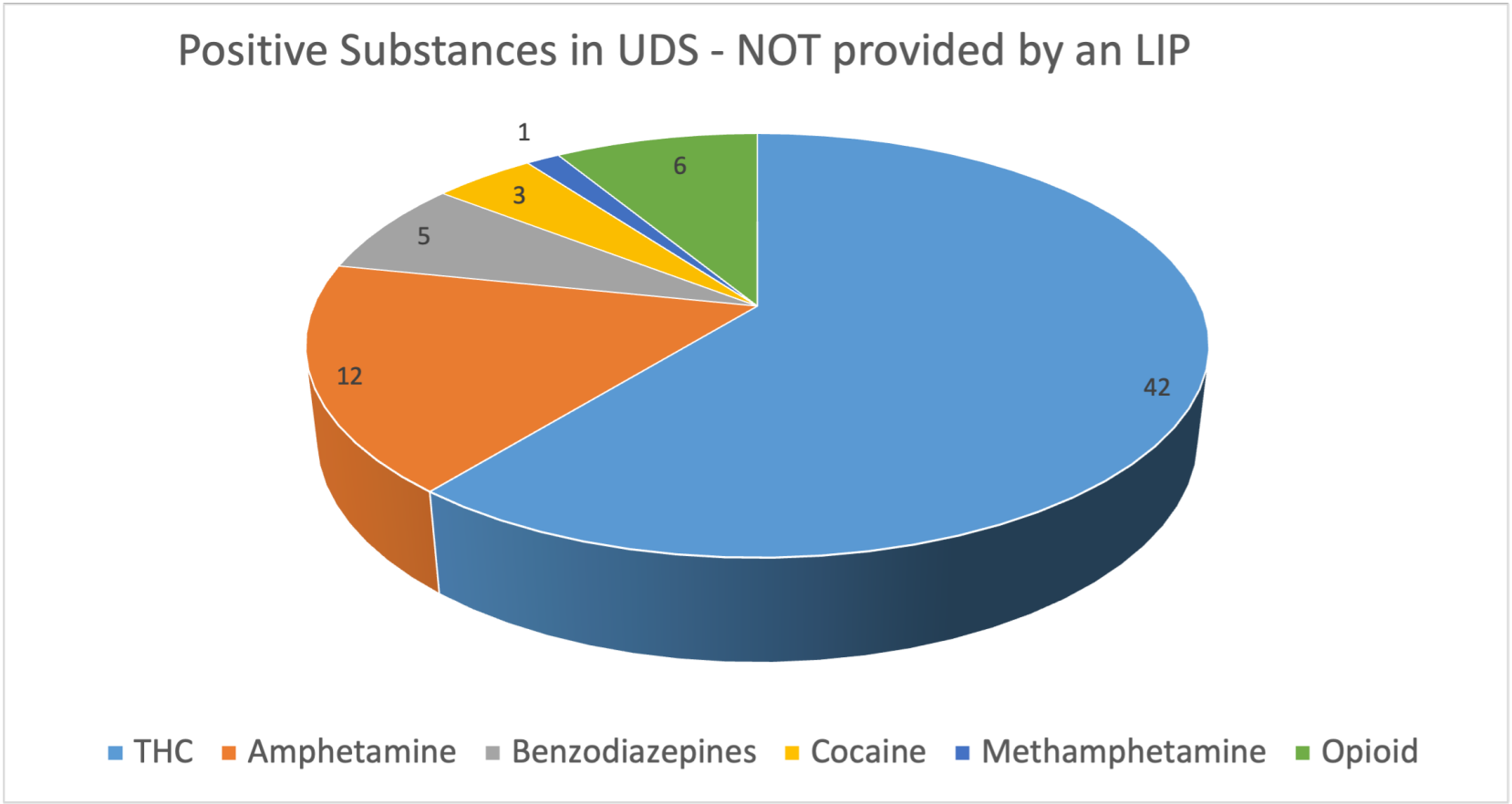
Urine drug screening 2015-2022



Positive Screen (68% screened)	8%	14%	16%
Overall Positive		10%	

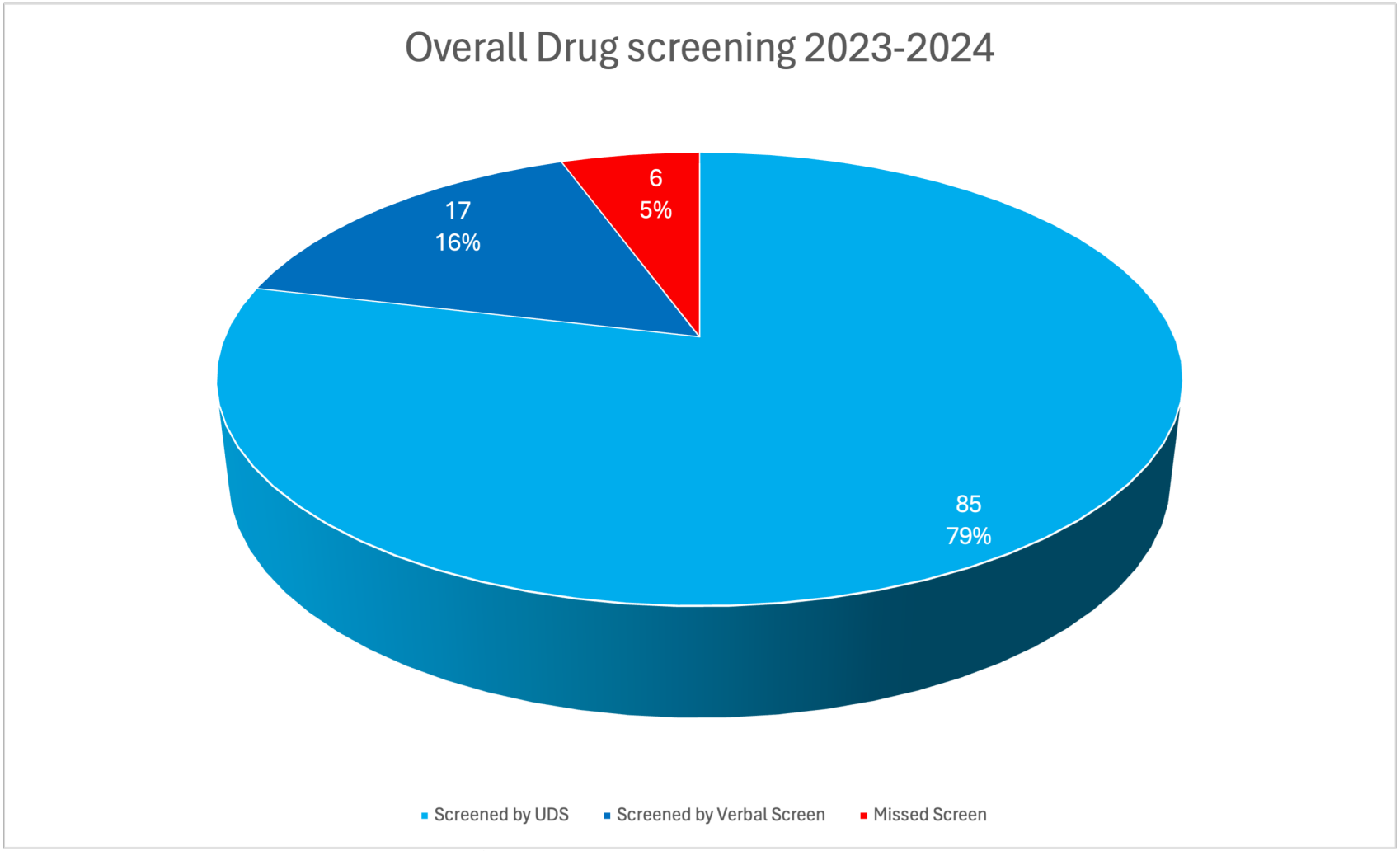
Substances Identified

after elimination of medically administered drugs



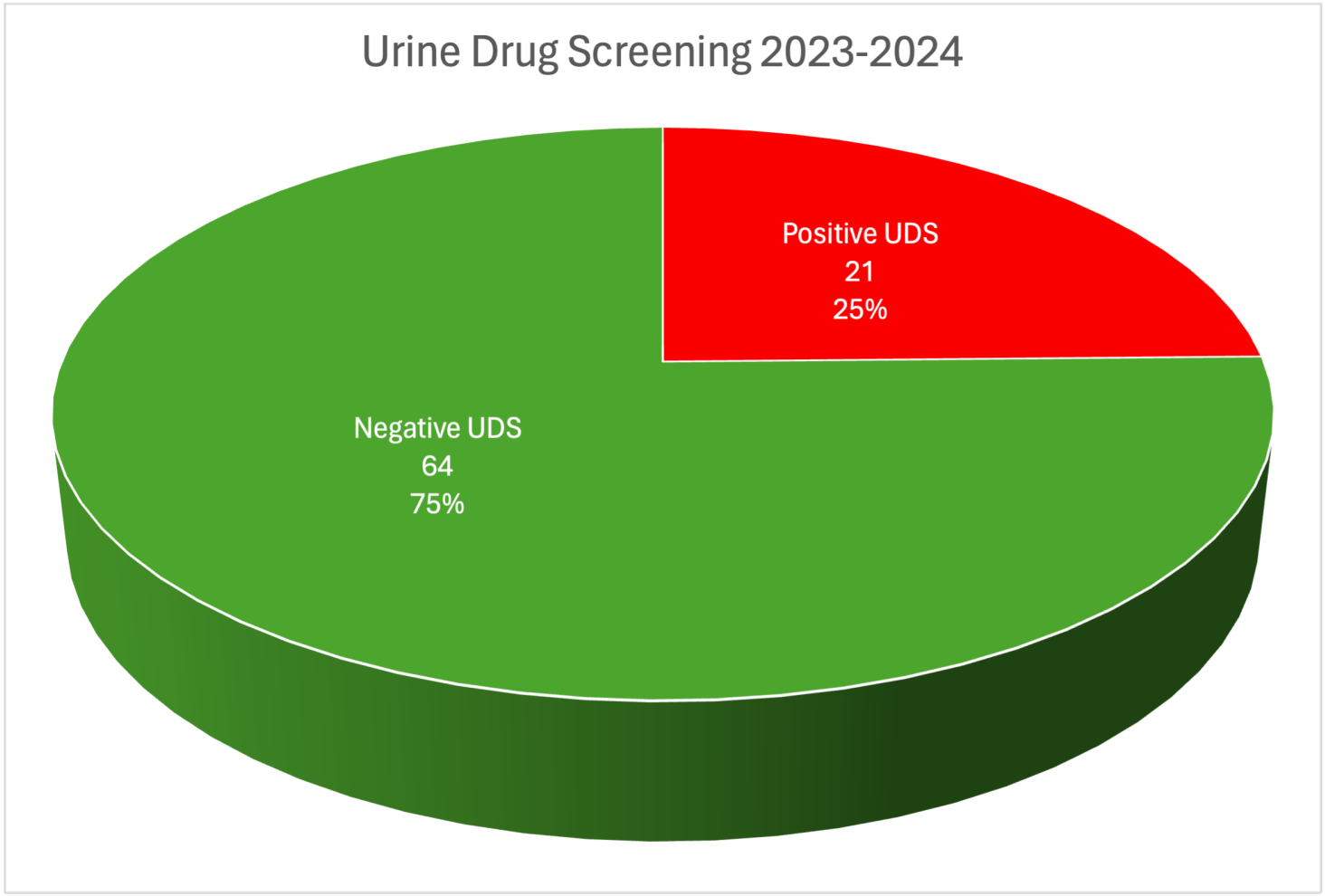
Summary of Drug Testing last year

After Implementation of new practice linking order of UDS to include Urine THC routinely - May 2023 to April 2024



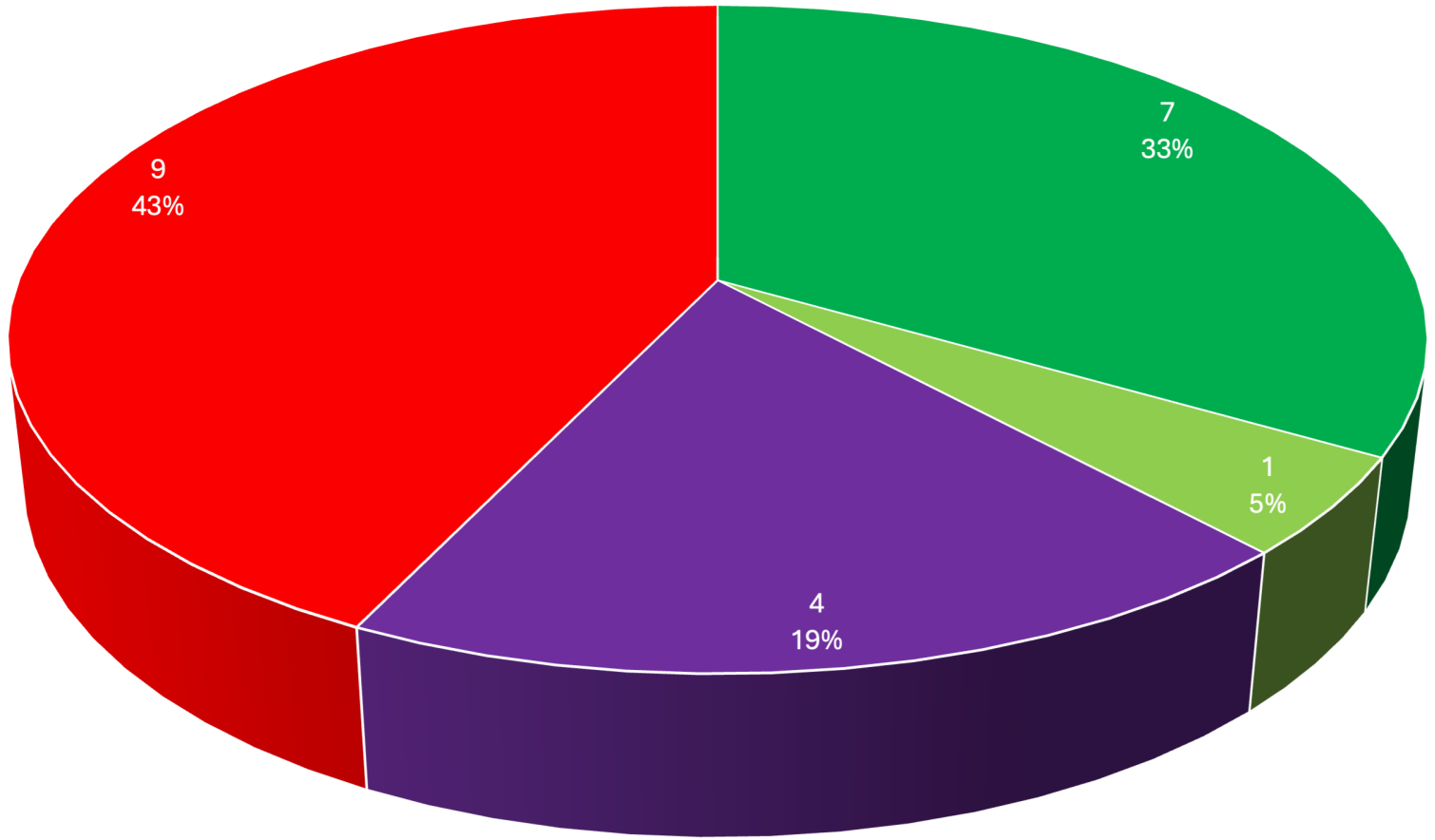
108 Patients: 95% Screened by all methods

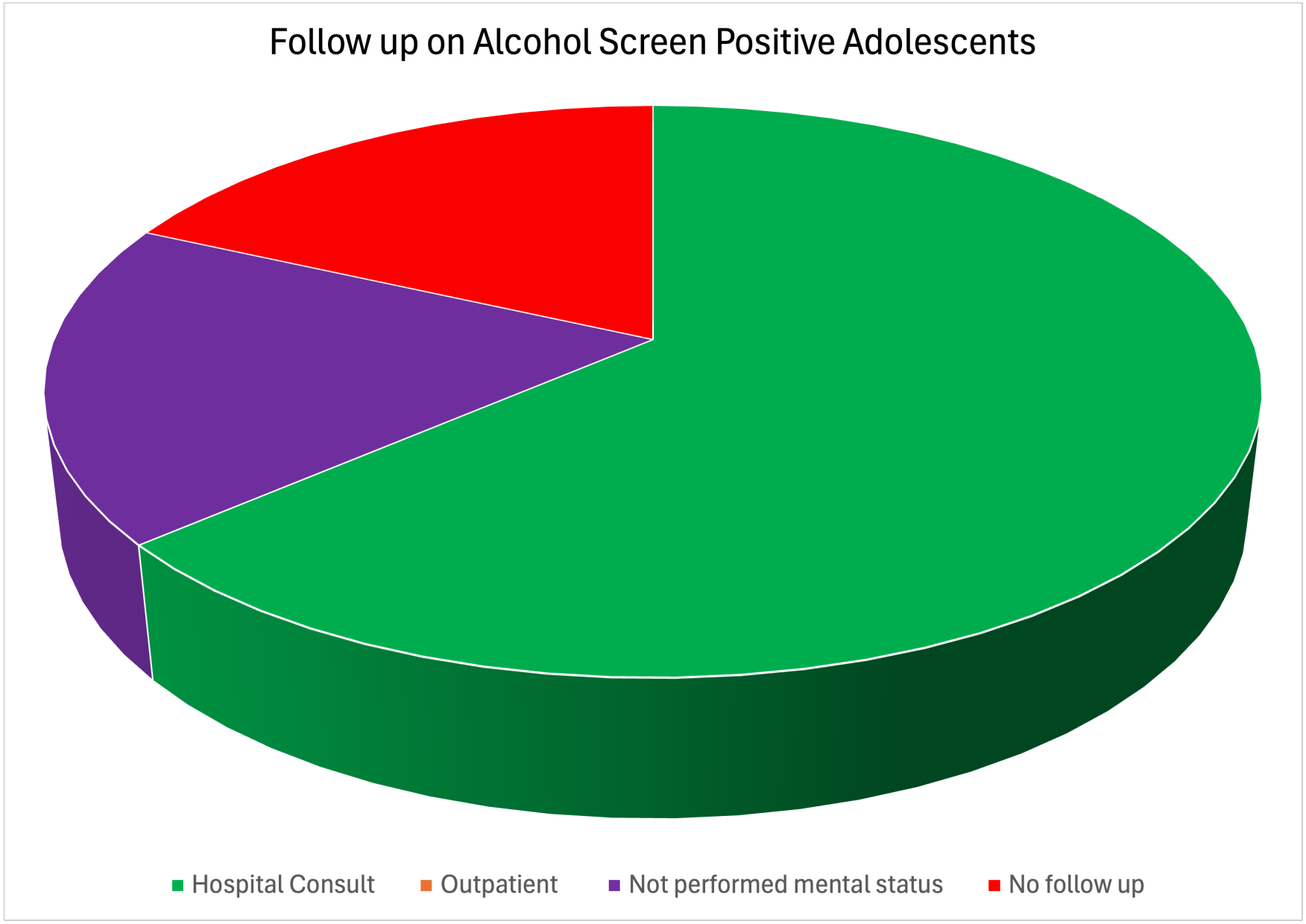
Urine Drug Screening Positivity



91 patients: 85 screened 6 failed to screen

Follow up on Drug Screen Positive Adolescents




Follow up on Alcohol Screen Positive Adolescents
Hospital Consult
Outpatient
Not performed mental status
No follow up

Requirements for ethical screening

The natural history of the disease should be reasonably well understood.

The burden of suffering from the disease must be high enough to justify screening.

The screening test must be reasonably sensitive and specific.

The disease must be treatable.

Treatment given earlier in the course of the disease must produce a better outcome than treatment given late in the course of the disease.

Patients will comply with the offered testing and treatment.

Resources to run the program must be available.

The costs of the program must justify the benefits

Breakout #1

Given the backdrop of drug usage in children and adolescents described, and its relationship to trauma and other important psycho-social risks, does the performance of routine blood alcohol and urine illicit drug screening meet the requirements for ethical screening in your opinion?

Professional associations recommendations

Organization	Year	Recommendation
American Academy of Family Physicians (AAFP)	2014	Adopts the 2008 and 2014 USPSTF recommendation on screening adolescents, adults, and pregnant women for illicit drug use[138] and primary care-based behavioral interventions to prevent or reduce illicit drug use in children and adolescents.[139]
Department of Veterans Affairs (VA)	2015	Adopts the 2008 USPSTF recommendation on screening adolescents, adults, and pregnant women for illicit drug use.[140] For patients with substance use disorders, there is insufficient evidence to recommend for or against using a standardized assessment that would determine initial intensity and setting of substance use disorder care rather than the clinical judgment of trained providers.
American Academy of Pediatrics (AAP)	2016	Recommends that pediatricians should increase their capacity in substance use detection, assessment, and intervention; and become familiar with adolescent SBIRT practices and their potential to be incorporated into universal screening and comprehensive care of adolescents in the medical home.[141]
American College of Obstetricians and Gynecologists (ACOG)	2012 (Reaffirmed 2014)	Recommends that all women should be routinely asked about their use of drugs, including prescription drugs used nonmedically, both before pregnancy and early in pregnancy, provided counseling when substance use is suspected or identified, and referred to treatment when drug dependence is apparent.[142, 143] (committee opinion)

Abbreviations: SBIRT = Screening, brief intervention, and/or referral to treatment

AAP Position on Illicit Drug Testing

Drug testing of a competent adolescent without his or her consent is, at best, impractical and without his or her knowledge is unethical and illegal.

Levy S, Siqueira LM, ABUSE COS. Testing for Drugs of Abuse in Children and Adolescents. Pediatrics. 2014;133(6).

SBIRT

- Screening
- Brief Intervention
- Referral
- Treatment

Developed by the the Substance Abuse and Mental Health Services Administration (SAMHSA) in 1980s

TABLE 1

Screening tools validated for use in adolescents.

Tool	Indications
S2B1	• Screens for frequency • Screens for tobacco, alcohol, marijuana, and other illicit drugs • Discriminates between no use, no substance use disorder (SUD), moderate SUD, and severe SUD, based on DSM-5 diagnoses.
NIAA Youth Alcohol Screen	• Recommended for children starting at age 9 • Two-question screen • Screens for friends' use and own use
BSTAD	Brief Screener for tobacco, alcohol, and other drugs • Identifies problematic tobacco, alcohol, and marijuana use in pediatric settings. • Can be self- or interview-administered
CRAFFT	Car, Relax, Alone, Friends/Family, Forget, Trouble • The CRAFFT is a good tool for quickly identifying problems associated with substance use.
GAINNS	Global Appraisal of Individual Needs • Assesses for both substance use disorders and mental health disorders • Alcohol Use Disorders Identification Test • Assesses risky drinking
AUDIT	Alcohol Use Disorders Identification Test • Assesses risky drinking • Not a diagnostic tool

S2BI positive recommended actions

- Assess further through a clinical interview using questions from the CRAFFT as a guide. Consider making a diagnosis using the Diagnostic and Statistical Manual, Fifth Edition (DSM-5) Substance Use Disorder criteria.
- Conduct a brief intervention using, for example, the OARS framework (for opioid use) or other motivational interviewing techniques (see references for specific resources).
- Provide normative feedback, advice, and facilitate goal setting by the patient regarding cutting back or abstinence.
- Target the brief intervention at the patient's accepting a referral to counseling for SUD.
- Ask if the parents know about the substance use and ask permission to discuss the referral with them. If the patient refuses, monitor whether he or she is able to complete a referral on his or her own without assistance.
- Arrange for follow-up within a month to see if the patient has accessed services.

Adolescent autonomy and substances

- Greater decisional autonomy and rights to privacy than in many other medical circumstances
- Adolescence is a particularly vulnerable time for stigmatization and peer isolation
- Trauma patients are frequently unconscious or otherwise incapacitated

Relational Ethics

- Stems from the belief that all individuals are the product of their relationship environments
  - Evaluation of ethics have to pay attention to these
- Family of origin – vertical relational ethics
- Peer groups – horizontal relational ethics
  - Possibly more important in adolescent
- Relational variables are strongly linked to illicit substance use
  - Peer influences
  - Bullying
  - Status of patient in peer communities

Stigma and discrimination stemming from a positive screen

Level of Stigma	Example
Individual	Negative thoughts, feelings, and diminished self-image resulting from identification with the stigmatized group and anticipation of rejection from the larger society
Interpersonal	Parental and potentially peer relationships can be compromised
Organizational	Loss of trust in the physicians and reluctance to participate in rehabilitative program with substance abuse specialists.
Community	Prejudice against positive screened patients. Need for strict confidentiality
Public Policy	Potential for criminalization and discrimination

Stangl AL, Earnshaw VA, Logie CH, van Brakel W, L CS, Barre I, et al. The Health Stigma and Discrimination Framework: a global, crosscutting framework to inform research, intervention development, and policy on health-related stigmas. BMC Med. 2019;17(1):31.

What is the legal framework?

Legal framework

- Federal law: 42 C.F.R. Part 2
  - Was first promulgated in 1975 to address concerns about the potential use of Substance Use Disorder (SUD) information in non-treatment based settings such as administrative or criminal hearings related to the patient. Part 2 is intended to ensure that a patient receiving treatment for a SUD in a Part 2 Program does not face adverse consequences in relation to issues such as criminal proceedings and domestic proceedings such as those related to child custody, divorce or employment. Part 2 protects the confidentiality of SUD patient records by restricting the circumstances under which Part 2 Programs or other lawful holders1 can disclose such records.
- Iowa Code: Chapter 125
  - Minor has the right to enter into substance abuse treatment without parental consent
  - No disclosure to parents without consent
  - Physicians should show discretion with divulging information regarding substance abuse to parents of minors

Divulging testing information to law enforcement

- Protection of privacy is a basic tenet of the physician mandate
- Drug testing results fall under Personal Health Information (PHI) and hence protected by HIPAA
- Physicians can generally provide clinical information to LE if:
  - Patient consents to information release
  - The law mandates that such information is released
    - Mandatory child reporting
    - Mandatory reporting of injury or gunshot
      - Iowa Code 147.111 Report of treatment of wounds and other injuries
    - Driver of vehicle Oregon (ORS 676.260) or Vermont (23 V.S.A. § 1203b)
    - On request - North Carolina (NC Gen. Stat. § 20-16.2 (2021).
  - Under subpoena or court order

Legal requirements for court order

A court may authorize the use and disclosure of patient records, or testimony relaying the information contained in those records, for the purpose of conducting a criminal investigation or prosecution of a patient only if the court finds that all of the following criteria are met:

(1) The crime involved is extremely serious, such as one which causes or directly threatens loss of life or serious bodily injury including homicide, rape, kidnapping, armed robbery, assault with a deadly weapon, and child abuse and neglect.

(2) There is a reasonable likelihood that the records or testimony will disclose information of substantial value in the investigation or prosecution.

(3) Other ways of obtaining the information are not available or would not be effective.

(4) The potential injury to the patient, to the physician-patient relationship and to the ability of the part 2 program to provide services to other patients is outweighed by the public interest and the need for the disclosure.

(5) If the applicant is a law enforcement agency or official, that:

(i) The person holding the records has been afforded the opportunity to be represented by independent counsel; and

(ii) Any person holding the records which is an entity within federal, state, or local government has in fact been represented by counsel independent of the applicant.

Iowa Statute - Report of treatment of wounds

147.111 Report of treatment of wounds and other injuries.

1. A person licensed under the provisions of this subtitle who administers any treatment to any person suffering a gunshot or stab wound or other serious injury, as defined in section 702.18, which appears to have been received in connection with the commission of a criminal offense, or a motor vehicle accident or crash, or to whom an application is made for treatment of any nature because of any such gunshot or stab wound or other serious injury, as defined in section 702.18, shall at once but not later than twelve hours thereafter, report that fact to the law enforcement agency within whose jurisdiction the treatment was administered or an application for treatment was made, or if ascertainable, to the law enforcement agency in whose jurisdiction the gunshot or stab wound or other serious injury occurred, stating the name of such person, the person's residence if ascertainable, and giving a brief description of the gunshot or stab wound or other serious injury.

Conscientious Objection

In certain circumstances, a law enforcement officer may ask the physician to physically obtain evidence from the patient. Here judgment matters and can put the physician in conflict with the law:

- Patients have the right to refuse examinations or tests which affect their bodily integrity eg. bullet removal for evidence.
- Physicians who refuse to perform invasive testing or any procedure that they believe is not in their patient's best interests can legitimately refuse.
- If evidence is obtained after patient refusal without a warrant, the US Supreme Court determined obtaining the specimen in those circumstances violated the patients' Fourth Amendment constitutional protection against unreasonable search and seizure and therefore made the evidence inadmissible.

Breakout #2 -Case Discussion

- A 16-year-old male is admitted to UIHC with a GSW of the abdomen. He is accompanied by law enforcement. The injury was sustained during an alleged drug deal. He is hemodynamically stable and is being prepared for laparotomy. Routine urine drug and Cannabis screening as well as BAL are already drawn. The law enforcement officer requests the following:
  - Access to the patient to obtain a statement
  - Access to the patient and the required personnel in order to obtain a forensically secure blood and urine specimen collection to test for illicit drugs.
  - That the surgeon retrieve the bullet for forensic purposes and calls the officer when ready for collection.

How do you believe the clinicians attending the patient should respond?

Can adolescent drug use reasonably be considered a treatable condition?

Target pop	Author, year Study name	Recruitment method	Screener	Substance use eligibility criteria	Screen pos, %	n rand	FU, mos	FU, %*	Baseline substance use-related characteristics (mean, sd)
Adolescents	D'Amico, 2018[78]	Primary care visit	NIAAA SG	Any past-year drinking ≥1 day (for 12-15 yrs), ≥6 days (for 16-17 yrs), or ≥12 days (for 18 yrs)	18.7	294	3, 6, 12	80.3	Cannabis use in past 12 months: 77% Cannabis use disorder: 38.4%
	Mason, 2015[96]	Primary care visit	CRAFFT	CRAFFT score of 2 or 3 (at risk for substance use disorder)†	15.8	119	1, 3, 6	98.3	Cannabis use in past 30 days‡: 1.4 (1.3) Intentions to use cannabis in next 90 days§: 1.9 (1.3)
	Walton, 2013[107] Project Chill	Primary care visit	Add Health	Any cannabis use in past year	25.8	328	3, 6, 12	83.8	Cannabis use in past 90 days‖: 3.2 (1.9)

Target pop	Author, year	Target subs	Int arm	Intervention	Intensity category*	Brief description	Setting	CBT	ME	MI	PNF	Refer	Provider	CG
Adolescents	D'Amico, 2018[78]	Cannabis, Alcohol	IG1	In-person brief intervention	Extended single	One 15-20-min individual counseling session	Primary care			X	X		Trained facilitator	UC
	Mason, 2015[96]	Alcohol, all drugs	IG1	Peer network counseling	Extended single	One 20-min individual counseling session	Primary care		X	X	X		Mental or behavioral health specialists	AC
	Walton, 2013[107]	Cannabis	IG1	In-person personalized feedback	Very brief†	One personalized feedback session (min NR)	Primary care			X	X		Mental or behavioral health specialists	UC
		Cannabis	IG2	Computer-based personalized feedback	Very brief†	One computerized feedback session (min NR)	Primary care			X	X		Self-directed	UC

Patnode CD, Perdue LA, Rushkin M, O'Connor EA. U.S. Preventive Services Task Force Evidence Syntheses.
Screening for Unhealthy Drug Use in Primary Care in Adolescents and Adults, Including Pregnant Persons: Updated Systematic Review for the US Preventive Services Task Force. Rockville (MD): Agency for Healthcare Research and Quality (US); 2020.

Author, year	Outcome	Scale range*	Recall (mo.)	Arm (subgrp)	FU	IG n	IG BL mean (sd)	IG FU mean (sd)	IG % mean change (sd)	CG n	CG BL mean (sd)	CG FU mean (sd)	CG mean change (sd)	Study-reported between group difference†	Study-reported p-value
D'Amico, 2018[78]	Cannabis use frequency	NA	3‡	IG1	3	153	10.02 (8.51)	6.38 (8.05)	NR	141	9.51 (8.31)	5.95 (7.58)	NR	0.00	0.99
					6	153	10.02 (8.51)	6.13 (7.9)	NR	141	9.51 (8.31)	5.07 (6.83)	NR	0.11	0.35
					12	153	10.02 (8.51)	6.76 (8.37)	NR	141	9.51 (8.31)	5.21 (7.35)	NR	0.14	0.23
	Number of times used cannabis on days used	NA	3‡	IG1	3	153	1.54 (1.15)	1.34 (1.16)	NR	141	1.51 (1.15)	1.22 (1.1)	NR	0.09	0.41
					6	153	1.54 (1.15)	1.14 (1.16)	NR	141	1.51 (1.15)	1.18 (1.16)	NR	-0.04	0.73
					12	153	1.54 (1.15)	1.18 (1.2)	NR	141	1.51 (1.15)	1.06 (1.16)	NR	0.05	0.64
Mason, 2015[96]	Cannabis use days	0-7§	1	IG1 (Males)	3	15	1.59 (NR)	1.43 (NR)	NR	20	1.11 (NR)	1.26 (NR)	NR	NR	NR
				IG1 (Females)		44	1.06 (NR)	1.10 (NR)	NR	40	1.78 (NR)	1.40 (NR)	NR	NR	NR
				IG1 (Males)	6	15	1.59 (NR)	1.28 (NR)	NR	20	1.11 (NR)	1.44 (NR)	NR	0.37	NR
				IG1 (Females)		44	1.06 (NR)	1.13 (NR)	NR	40	1.78 (NR)	1.28 (NR)	NR	NR, NS	NR
Walton, 2013[107]	Cannabis use frequency	0-6‖	3	IG1	3	118	3.14 (1.86)	2.37 (2.13)	-24.5 (≤0.01)	110	3.25 (1.87)	2.09 (2.06)	-35.7 (≤0.01)	-0.18 (0.13)	0.16
				IG2		100	3.06 (1.90)	2.05 (2.25)	-33.0 (≤0.01)	110	3.25 (1.87)	2.09 (2.06)	-35.7 (≤0.01)	-0.08 (0.15)	0.57
				IG1	6	118	3.14 (1.86)	2.40 (2.11)	-23.6 (NR)	110	3.25 (1.87)	2.04 (2.10)	-37.2 (NR)	0.25 (0.14)	0.08
				IG2		100	3.06 (1.90)	1.96 (2.05)	-35.9 (NR)	110	3.25 (1.87)	2.04 (2.10)	-37.2 (NR)	0.08 (0.16)	0.62
				IG1	12	118	3.14 (1.86)	2.63 (2.20)	-19.1 (NR)	110	3.25 (1.87)	2.14 (2.21)	-31.1 (NR)	0.15 (0.14)	0.28
				IG2		100	3.06 (1.90)	2.04 (2.20)	-32.7 (NR)	110	3.25 (1.87)	2.14 (2.21)	-31.1 (NR)	-0.03 (0.16)	0.85
	Other drug use frequency	0-6‖	3	IG1	3	118	0.47 (1.29)	0.26 (0.92)	-44.7 (≤0.05)	110	1.16 (2.71)	1.18 (4.13)	1.7 (NR)	0.61 (0.39)	0.12
				IG2		100	0.86 (3.01)	0.16 (0.62)	-81.4 (≤0.05)	110	1.16 (2.71)	1.18 (4.13)	1.7 (NR)	1.82 (0.68)	<0.01
				IG1	6	118	0.47 (1.29)	0.26 (0.93)	-44.7 (NR)	110	1.16 (2.71)	1.19 (4.64)	2.6 (NR)	-0.48 (0.42)	0.255

No consistent effect of the interventions on rates of self-reported or biologically confirmed drug use or other risky behaviors such as alcohol use or risky sexual behaviors at 3 to 12 months follow up. Frequency and quantity of drug use generally decreased, and rates of abstinence increased in both intervention and control groups with no statistically significant between-group differences detected.

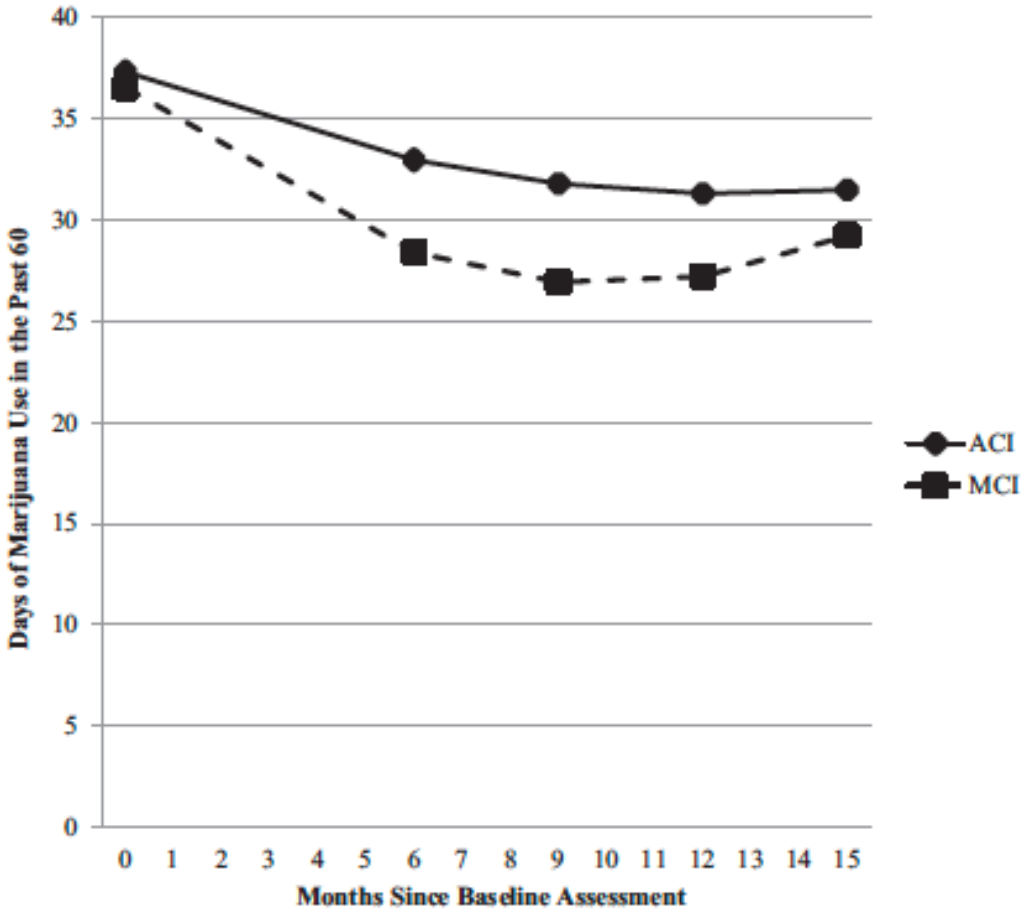


Figure 2. Mixed effects model estimates of days of marijuana use. MCI = motivational check-in; ACI = assessment-only check-in.

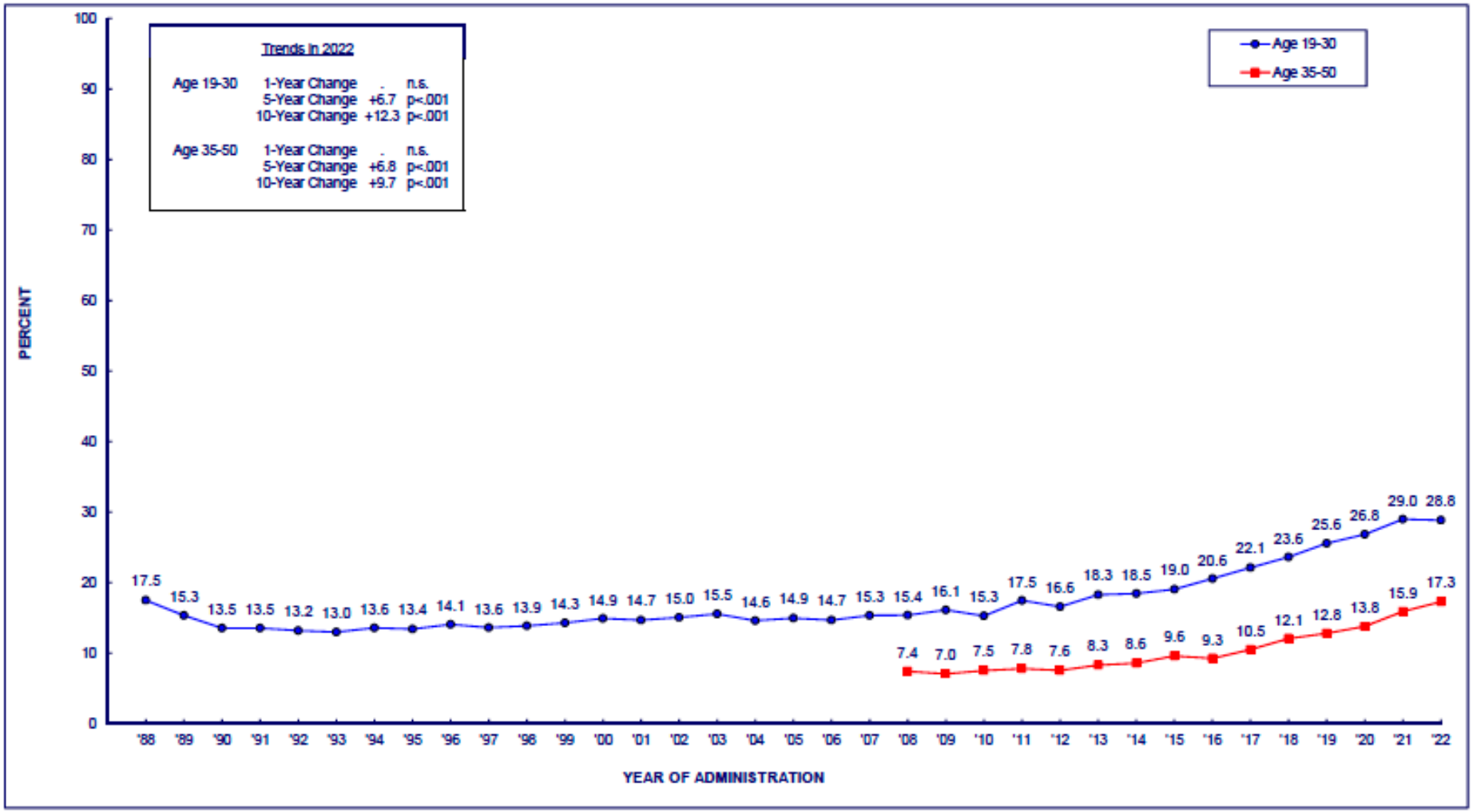
Walker DD, Stephens RS, Blevins CE, Banes KE, Matthews L, Roffman RA. Augmenting brief interventions for adolescent marijuana users: The impact of motivational check-ins. J Consult Clin Psychol. 2016;84(11):983-92.

Conclusions

- Illicit drug and alcohol use are independent predictors for risk of injury and re-injury
  - Marijuana poses specific risks for adolescents
- Testing for alcohol and illicit substances in severely injured adolescents is ethically justified
  - Confidentiality is paramount
  - Effective referral and follow up for identified patients
    - Challenging
  - Health Care workers need to develop the tools to engage our patients directly
- Familiarity with your legal landscape

Appendix Materials

MARIJUANA
Trends in 30-Day Prevalence among Respondents of Modal Ages 19 through 50, by Age Group



Patrick, M. E., Miech, R. A., Johnston, L. D., & O'Malley, P. M. (2023). Monitoring the Future Panel Study annual report: National data on substance use among adults ages 19 to 60, 1976-2022 (PDF). Monitoring the Future Monograph Series. Ann Arbor, MI: Institute for Social Research, University of Michigan.

Substance Screening Type, Frequency, and Results

Screening Type	Frequency Administered *n* (%)	Positive Results *n* (%)
Biologic test		
Urine drug screen	77 (25.7)	25 (32.5)[a]
Serum drug screen	0	N/A
Blood alcohol concentration	80 (26.7)	11 (13.8)
Validated questionnaires	79 (26.3)	11 (13.9)

Mello MJ, Becker SJ, Spirito A, Bromberg JR, Wills H, Barczyk A, et al. Screening Adolescent Trauma Patients for Substance Use at 10 Pediatric Trauma Centers. J Trauma Nurs. 2020;27(6):313-8.

DEA Drug Schedule

- Schedule I: defined as drugs with no currently accepted medical use and a high potential for abuse. These are considered the most dangerous drugs of all the drug schedules with potentially severe psychological and/or physical dependence.
- Schedule II: defined as drugs with a high potential for abuse, with use potentially leading to severe psychological or physical dependence. These drugs are also considered dangerous.
- Schedule III: defined as drugs with a moderate to low potential for physical and psychological dependence.
- Schedule IV: defined as drugs with a low potential for abuse and low risk of dependence.
- Schedule V: defined as drugs with lower potential for abuse than Schedule IV and consist of preparations containing limited quantities of certain narcotics. Schedule V drugs are generally used for antidiarrheal, antitussive, and analgesic purposes.

Unites States Drug Enforcement Administration

Trauma Team Activation and Alert Guidelines*

Definitions:

Adults: *≥19 years of age or older (**#6003** Smart Web)* ***Pediatrics***: *0-18.99 years of age (**#6004** Smart Web)*

If you answer "yes" to any of the following criteria, notify the trauma team utilizing the appropriate paging group above.

Criteria for Trauma Activation

1. Glasgow Coma Score ≤ 13
2. Systolic BP less than 90 mmHg OR (Age specific hypotension in children--- See normal pediatric vital signs box) OR (SBP < 110 in pts ≥ age 65 yrs. with multi-system injuries)
3. Heart Rate >120 (or Age specific tachycardia in children---See normal pediatric vital signs box)
4. RR < 10 or > 29 breaths per minute or Need for Ventilatory Support (both bag-mask & intubation). *(<20 breaths per minute in an infant aged < 1 yr)* or Age specific abnormals in children--- See normal pediatric vital signs box)
5. Patients receiving blood to maintain vital signs
6. Penetrating injuries to head, neck, or torso*
7. Chest wall instability or deformity (e.g. flail chest)
8. Combination trauma with burns/electrocutions (also page burn 6099)
9. Bil. Femur fxs due to high energy mechanism
10. Pelvic fractures with hemodynamic instability (otherwise Alert)
11. Limb paralysis (acute spinal cord injury); not isolated numbness
12. Amputation proximal to wrist or ankle
13. Crushed, degloved, mangled or pulseless extremity*
14. 3 or more patients at same time

Transfers From An OSH:

If patient meets Activation Criteria – Page Activation

Page a Trauma Consult for stable patients (19 yrs & older) that meet Alert criteria (decided by ED/Trauma faculty taking transfer call).

Criteria for Trauma Alert

1. Falls:
   - -Adults: greater than 10 feet (One story is equal to 10 ft)
   - -Children (Age < 15): greater than 10 feet, or 2 or 3 times the height of the child
2. High Risk Auto Crash:
   - -Intrusion, including roof: > 12 inches occupant site; >18 in. any site
   - -Ejection (partial or complete) from auto
   - -Death in same passenger compartment
   - -Vehicle telemetry data consistent w/high risk of injury
3. Auto vs pedestrian/bicyclist, other motorized transport methods - thrown, run over, or with significant impact (>20 mph)
4. Motorcycle crash greater than 20 mph
5. Penetrating injuries to extremities proximal to elbow or knee (unless hemodynamically unstable then Activation)
6. Pediatric pt. (0-18.99 yrs of age) with penetrating perineal injury
7. Geriatrics (≥65 yrs of age)
   - -Documented/suspected multisystem injury on anticoagulants (Plavix, Coumadin, etc) excluding aspirin
   - -*If declining GCS, ≤13, consider activation*
8. Pregnancy:
   (Regardless of gestational age, notify OB Service Group #6777 with the trauma team. Include Estimated Gestational Age when known.) *If delivery occurs/imminent will need to also page Code Delivery #6785
   *Consider upgrade to activation if there is concern for placental abruption or significant vaginal bleeding
9. Injuries consistent with probable admission to the Trauma Team

*** Points of Clarification:**

1. Hangings are not typically seen by the Trauma Team.
2. Isolated trauma distal to the elbow (i.e. self-inflicted wrist lacerations, window punchers, agricultural equipment) with or w/o arterial, venous, nerve or soft tissue injuries are not Trauma Team Activations **unless they meet physiologic criteria.**
3. One story fall is equal to 10 feet

--Please consult w/Trauma surgeon on call if there are questions or concerns about patients in these subgroups.

Normal Pediatric Vital Sign Ranges

	RR	HR	Systolic BP Lower limit
Infant (<1 yr.)	30-60	100-160	>60 (or strong pulse)
Toddler (1-3 yr.)	24-40	90-150	>70 (or strong pulse)
Preschool (4-5 y)	22-34	80-140	>75
School Age (6-12y)	18-30	70-120	>80
Adolescent (12-20y)	12-20	60-100	>90

Revised 5/2012, 2/2014, 4/2014, 8/2014, 7/2015, 10/2016, 1/2017, 7/2017, 6/2018, 10/2019, 6/2020, 7/2020, 9/2021, 12/2021