RESEARCH

National Survey Exploring Drug Screening in Pharmacy Programs

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Objective. To explore drug screening programs, including requirements, policies, and procedures among pharmacy programs; frequency of drug-related incidents; and types of substances misused by pharmacy students.

Methods. IRB-approved web-based and paper surveys were sent to pharmacy deans, experiential education faculty, and student affairs personnel at 135 US ACPE-accredited and candidate status programs. Descriptive statistics and chi-square test were used to analyze the data, identify relationships and draw conclusions.

Results. Administrators from 98 programs responded (73% response rate). Sixty-one percent reported implementing a urine drug screen requirement for students, with a 10-panel screen as the most common required screen (72%). Ninety-three percent of programs require students to pay for the screen, with costs averaging \$42 per screen. Programs reported an average of 2.2 substance-related events per 100 students annually, with alcohol, marijuana, amphetamines, opioids and benzodiazepines most commonly involved. Schools that do not screen reported twice as many incidents as those that screen.

Conclusion. A drug screening program can deter pharmacy students from inappropriate substance use. The results from this study can assist pharmacy administrators in evaluating the need to institute or enhance a drug screening program at their school or college of pharmacy.

Keywords: drug screen, drug testing, substance abuse, pharmacy policies, experiential education

INTRODUCTION

Substance misuse is a national epidemic that threatens the health and welfare of all communities, resulting in social, economic and health care costs.¹⁻⁴ Substance use disorder (SUD) does not discriminate by age, race, gender, geographic location or income.^{1,4} The Centers for Disease Control and Prevention (CDC) report that drug overdoses have escalated, killing nearly half a million people between the years 2000 and 2014.⁴ One in 10 Americans age 12 or older report current use of an illicit drug, marijuana being the most prominent, followed by non-medical use of prescription pain relievers.¹ Sixty-nine million Americans report binge alcohol use and 17.3 million report heavy alcohol use in the past month.¹ Risk

factors for substance misuse include young age, single status, peer pressure, easy access to illicit drugs, and prescription use (eg, narcotic analgesics for sports injuries, benzodiazepines to combat stressors, and/or stimulants to stay focused). Additional pressures common in college students include Greek life, high-stress lifestyles, and inconsistent sleep patterns.^{1,5-8}

A focused literature search on alcohol and drug misuse in professional programs revealed a plethora of yet more risks for health care students. These include rigorous curricula with heavy workloads, longer than average study hours, expectations for work-related experience, leadership and service activities, high educational debt, burnout, and competition among peers for post-graduate opportunities.⁵⁻¹³ Health care students have an interest in, knowledge of and access to various prescription drugs. Because of their drug knowledge, health care students may have misguided feelings of self-control, and believe that addiction could never happen to them. Alarming

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numbers of health care students report using substances during class, at work and while performing patient care activities.⁵⁻¹³ In 2006, Baldwin and colleagues reported that 9% of health care students claimed recreational drug use in the past year, including those in medicine (12%), dentistry (10%), pharmacy (9%), nursing (9%), and allied health (8%).¹⁰ One-third of the students reported heavy alcohol use in the past two weeks to cope with stressors, and 7% of respondents reported attending class or work under the influence of alcohol and other drugs. Three percent reported providing patient care under the influence.¹⁰

Studies have been conducted on student pharmacists' use of recreation drugs, including surveys of self-reports. Ranges reported in the literature include marijuana (5.9% to 28%), amphetamines (1.2% to 7%), cocaine (0.5% to 13%), sedatives (3% to 9%), and opioids (0.7% to 8%).^{5-7,10-12} One study reported that almost two-thirds of pharmacy students self-reported using a controlled substance at some time without a prescription.¹⁴ Another study found that pharmacy students' use of sedatives (8%), amphetamines (6%), opiates (5%), and non-prescription stimulants such as pseudoephedrine (19%) was elevated relative to other health profession students.⁷ Pharmacy students have reported going to class or work (8%) and conducting patient care activities (2%) while under the influence of alcohol or drugs.¹⁰

Inappropriate substance use poses risks to students, increases liability for training sites and pharmacy programs, and negates interprofessional and public trust. Of primary concern is that substance use by student health care professionals may lead to compromised judgement and skills while providing patient care. Many health care and government organizations have elicited calls to action among health care educators.^{2,10,15,16} Additionally, an increasing number of pharmacy experiential sites require pre-screening for inappropriate drug use. In 2008, a national survey revealed that 12% of experiential pharmacy sites required students to have a pre-experience drug screen.¹⁷ By 2013, this number had reached 45%.¹⁸

Drug screens are one deterrence mechanism and assist in determining the extent of substance misuse within a health care program. They are also controversial and have limitations. A literature review revealed articles on drug screening programs in different health care professions, with one article reporting on implementation of a drug screening program at a pharmacy college, and two articles on student attitudes toward drug screens in the health care professions.¹⁹⁻²² However, no articles were found providing a national overview on drug screening policies and procedures in pharmacy programs. This gap highlights an opportunity to explore and evaluate practices across the

Academy. In this article, a drug-related incident refers to a positive drug screen, positive drug test, or any occurrence where student behavior is of sufficient severity to cause reasonable suspicion, a problematic event, or criminal charges. An incident may occur within or outside of the academic setting.

The objective of this research was to provide a national overview of drug screening policies and procedures in pharmacy programs, experiential site requirements for drug screens, and the frequency and types of incidents known within schools. This information can serve as a foundation to assist health care administrators in evaluating the need to institute or enhance a drug screen program.

METHODS

Based on a 2016 literature search using multiple databases, including Academic Search Premier, Cochrane library, ERIC, IPA, CINAHL, Google Scholar, Medline, and PsycINFO, and key words including drug tests, drug screens, drug use policies, substance abuse, health care professions, pharmacy programs, and experiential requirements, the researchers developed a web-based questionnaire to collect national data on drug screening and testing policies and procedures, experiential site requirements, and substance use incidents. A drug screen was defined to participants as an initial, inexpensive, and quick method to detect use of a drug class; opposed to a drug test, defined as a precise measure to identify specific drugs and confirm positive drugs screens. The survey instrument used skip logic and consisted of 4 to 26 questions, plus six demographic questions. Twelve individuals of differing rank and position from three pharmacy programs pretested the questionnaire. The Purdue University Institutional Review Board deemed the questionnaire exempt. In 2016, an e-mail outlining the purpose of the research and an invitation to complete the web-based questionnaire (Qualtrics Inc., Provo, UT) was sent to deans at 135 pharmacy programs with Accreditation Council for Pharmacy Education (ACPE) accreditation status (pre-candidate, candidate, or full accreditation). Deans were asked to complete the questionnaire or forward the email with the link to the most knowledgeable individual on drug-related incidents and/or drug screening at their school. Reminders were sent to non-responding programs at two-week intervals. After the third email request, a paper copy of the questionnaire was sent to experiential education offices at the remaining non-responding schools. When two individuals responded from one school, only the first responder's data was analyzed. Responses were not linked to individuals or programs but were analyzed collectively. For purposes of

data analysis, a drug screen program was defined as an official written policy with specific procedures requiring regular screening for some or all students, such as prior to admission or randomly throughout the curriculum. The researchers computed descriptive statistics and conducted chi-square tests to analyze the data, identify relationships and draw conclusions (SPSS, v. 24.0, IBM, Armonk, NY). The survey is available upon request to the corresponding author.

RESULTS

Ninety-eight administrators from different schools responded to the questionnaire for a 73% response rate. Of the respondents, 51% identified as experiential education directors, 46% as deans, assistant or associate deans, 18% professors, 9% academic advisors or student affairs personnel, 4% clinical instructors, and 9% reported as other. Respondents could select more than one primary role. The mean class enrollment size was 123 (SD=48, Range: 52-300).

The respondents identified their pharmacy programs as 53% public and 47% private, with location settings described as 51% urban, 21% suburban, 18% rural, 3% inner city and 7% other. Thirteen percent of schools identified as faith-based, 8% as an accelerated program and 18% as a school associated with an academic medical center.

Of the 98 respondents, 61% reported having a current drug screening program in place. Initial motivations to implement a drug screening program included: experiential requirement (69%), PharmD admission requirement (33%), profession integrity (23%), drug abuse and addiction deterrence (16%), one or more specific substance-related events (7%), university requirement (4%), state requirement (3%), or other (3%). Of the schools that did not currently have a drug screen policy, 5% were considering adoption. Those considering adoption, as well as those with no plan for adoption, were provided an opportunity to comment on their rationale. These comments are listed in Appendix 1 and addressed in the discussion section.

Most accelerated programs (86%), faith-based (75%), and private programs (71%) drug screen their students, whereas only 44% of public pharmacy schools have drug screening programs in place. Most programs (69%) do not drug screen any faculty or staff members. A few schools (17%) drug screen clinical faculty members who have a practice site. Only 3% of schools drug screen all pharmacy practice faculty and 2% drug screen all faculty members within the school. Of schools with a program in place, over half (56%) reported having a drug screening program for more than 5 years; 22% for 2-5 years, 13%

implemented a program within the last two years, and 9% of respondents did not know when their program was established.

Drug screening and testing policies and procedures generally originate within the professional pharmacy program (85%), with only 8% of schools stating that the university mandates drug screens. A few schools (6%) stated that policies are determined by a larger multi-discipline college or university-level entity, rather than the professional pharmacy program. Table 1 describes specifically which professional program entities determine drug screening and testing policies, oversee procedures (eg, confirms completion and acts on results), and where the screening and testing is completed.

Offices of experiential education, followed by offices of student services/affairs, are the primary entities involved in determining drug screening policies and overseeing procedures. Most experiential institutional-based rotation sites (68%) now require drug screens for students entering their facilities. Over one-third (36%) of community pharmacy rotation sites and 22% of other sites require drug screens.

All schools with drug screen programs reported that urine is the primary specimen used in screening students. Schools most commonly require a 10-panel drug screen

Table 1. Drug Screening Procedures Within the Pharmacy School

Procedure (n)	N (%) ^a
Determines drug screening policies (72)	
Drug screening/testing task force/committee	3 (4.2)
Other faculty committee or department	7 (9.7)
Dean's office	37 (51.4)
Experiential education office	56 (77.8)
Office of student services/affairs	52 (72.2)
Other	8 (11.1)
Oversees drug screens (73)	
Drug screening/testing task force/committee	2 (2.7)
Other faculty committee or department	2 (2.7)
Dean's office	10 (13.7)
Experiential education office	53 (72.6)
Office of student services/affairs	46 (63.0)
Other	6 (8.2)
Conducts the drug screen (72)	
Outside entity, eg, Certiphi Screening, Inc. through PharmCas	65 (90.3)
University facility, eg, university health center	9 (12.5)
Completed through experiential site	7 (9.7)

^a Participants allowed to select multiple options, therefore percentages do not add to 100

(72%), with 11% of schools using an 8-panel and 7% of schools using a 5-panel. Ten percent of schools noted that the type of panel varies depending on site requirements. No program reported routinely breathalyzing students or using hair, blood, sweat or saliva to screen students.

Most schools (58%) reported that students pay for their drug screen at the time of occurrence. Over one-third (35%) said screens are paid for by students through course fees. Less frequently, pharmacy programs (21%) or universities (1%) absorb the cost. Some participants selected two responses, eg, course fees plus pharmacy program. The average cost of a drug screen was \$42.00 (n=36, SD=18.96, 95% CI +7.29). Table 2 describes the various points in time when drug screens were conducted, with prior to IPPE (57%) and prior to APPE (68%) rotations being most common.

The consequences for refusal or failure to complete a drug screen by the required date include “treated as a positive result” (39%), “delayed progression” (37%), or “allowed additional time to complete the screen” (34%). Less frequent consequences include “determined on individualized basis” (8%), “dismissal from program” (6%), or “more frequent drug screening” (3%). Of the 34 schools that drug screen prior to admission to the professional program, the consequences of a confirmed positive test include “denied admission” (40%), “deferred admission” (27%), “admitted with special conditions” (18%), and/or “determined on an individualized basis” (5%).

The two most commonly reported consequences of a positive drug screen for currently enrolled students were “referral to a pharmacy recovery network” (58%) and “continued enrollment under special conditions” (38%) (Table 3).

Academic consequences and probationary status for a confirmed positive test were most commonly determined within the pharmacy program itself (94%)

Table 2. Drug Screen Timing (n=72)

Timing	Frequency ^b
	N (%)
Prior to admission	34 (47.2)
Prior to IPPE	41 (57)
Prior to APPE	49 (68.1)
Every semester	0
Annually	23 (31.9)
Randomly (all students)	8 (11.1)
On reasonable suspicion	21 (29.2)
Others ^a	16 (22.2)

^a Others include site requirement, twice in the advanced practice year

^b Participants allowed to select multiple options, therefore percentages do not add to 100

Table 3. Consequences of a Positive Drug Screen for Enrolled Pharmacy Students

Consequence (n=64)	Frequency
	N (%) ^a
Dismissed from program	11 (17.2)
Enrollment suspended pending a series of negative screens	9 (14.1)
Enrollment suspended pending evaluation and beginning of treatment	12 (18.8)
Enrollment suspended pending complete evaluation and treatment	18 (28.1)
Didactic enrollment continued, experiential enrollment suspended pending a series of negative screens	19 (29.7)
Enrollment allowed under special conditions	24 (37.5)
Referral to a pharmacy recovery network	36 (57.8)
Determined on individualized basis	11 (17.2)
Reported to board of pharmacy	4 (6.3)

^a Participants allowed to select multiple options, therefore percentages do not add to 100

compared to university intervention (24%). The office of student services/affairs (70%), the dean’s office (66%), and/or the experiential education office (46%) were the entities most commonly involved in determining academic consequences. A few schools reported using a faculty committee, a drug screening/testing taskforce, and/or a student panel.

Student compliance with rehabilitation and monitoring is primarily overseen by the office of student services/affairs (54%), the dean’s office (28%), a pharmacist recovery network program (28%), and/or the experiential education office (23%). Less frequent responses included a board of pharmacy, a community-based support services, and/or a pharmacy committee. When asked which professional program entities are aware of and/or notified of positive test results, responses included the experiential education office (82%), office of student services/affairs (73%), dean’s office (60%), the student’s assigned experiential preceptors (13%), or other (12%). In addition to entities within the professional pharmacy program, the state board of pharmacy (40%), university dean of students (34%), pharmacist recovery network (30%), collegiate counseling/support services (11%), and law enforcement (4%) were routinely notified.

Seventy-eight of the 98 survey respondents reported that they were personally aware of drug-related incidents occurring within their programs, with an average of 2.7 (SD=3.3) alcohol and drug-related incidents on an annual basis (average class size of 123). Each reported incident could involve multiple substances, with the most commonly involved substances being alcohol (80%),

marijuana (61%), and amphetamines (42%), opioids excluding heroin (27%), benzodiazepines (14%), heroin and cocaine (each 8%), and ecstasy and barbiturates (each 3%). There were no reports of incidents involving phenylcyclidine, methaqualone, LSD, GHB, or bath salts.

The number of total drug- and alcohol-related incidents reported annually was compared between programs that drug screen students and those that do not. Schools that drug screen students reported less than half the number of total incidents ($M=1.9$, $SD=2.1$) compared to schools that do not drug screen students ($M=4.0$, $SD=3.8$), $p<.01$. Additionally, schools that drug screen students without testing for alcohol reported significantly fewer alcohol-related incidents ($M=1.1$, $SD=1.3$) than did schools without a drug screening program ($M=3.0$, $SD=2.8$), $p<.001$.

All participants ($n=98$) regardless of whether they have a drug screen policy or not, were asked, "In your professional opinion, do you feel that random drug screening deters pharmacy students from substance misuse?" The responses were "yes" (75%) and "no" (25%). Participants were then provided an opportunity to make open-ended comments explaining their response. This was not a required field and there were not enough comments for analysis, but the respondents' remarks are summarized in Appendix 1.

DISCUSSION

Pharmacy school administrators reported an average of 2.2 incidents per 100 enrolled students annually. These involved situations where student behavior was of sufficient severity to cause reasonable suspicion, a problematic event, or criminal charges. In contrast, self-reports of illicit and/or prescription drug misuse range around 10% for students in health care programs, indicating that program administrators are unaware of the majority of misuse.¹⁰ A 2014 study by McCabe and colleagues found that approximately 20% of all college students reported misuse of at least one class of prescription medications and that the trend is increasing.²³ Likewise, drug diversion and misuse among health care workers has risen substantially in recent years, with some research revealing higher misuse among health profession students than with their college peers.^{1,6,8,12,13,16,24}

Defining the extent of the problem is difficult. Program administrators may be reluctant to broach this issue for fear of tarnishing their school's reputation or being ill-prepared to address the complex needs of students with substance abuse disorder. As the entity responsible for preparing students to be drug experts and providers of pharmaceutical care, pharmacy programs must hold their students accountable for the responsibilities and

privileges of professional licensure. Student pharmacists take an oath to protect humanity, apply their skills to the best of their ability, and vow to hold themselves to the highest principles of the profession. They take these oaths voluntarily with full realization of the responsibility with which they are entrusted.²⁵ Fear of reprisal and shame may discourage students from seeking help.

Our results revealed a common lack of communication between administrative arms in pharmacy schools regarding this issue. Over 40% of the time, the dean's office was unaware when positive drug screens were detected. Likewise, the office of student affairs/services was uninformed of incidents about one-third of the time. Experiential education was the most informed entity (in over 80% of reported incidents), but the students' preceptors were rarely notified before sending a student with known misuse to a site. Without a central reporting area and sharing of information among school administrators, multiple offenses go unrecognized, putting the student's right to privacy before that of the public they serve and protect. Schools reported notifying the state board of pharmacy 40% of the time, university administrators 34%, counseling/support services 11%, and law enforcement in 4% of cases. When drug use is unknown, ignored or dismissed by school administrators, students may be less likely to use university or community resources that could help prevent progression to substance abuse disorder.

Urine was the only type of specimen used in screening programs. Urine screening can detect recent drug use, but does not indicate impairment at the time of the test. Saliva testing is one alternative that is useful for "on-duty" situations, as it mirrors drug content found in blood. Hair testing, another alternative, may detect drug use for up to three months.²⁶ Each specimen type has advantages and disadvantages, which are beyond the scope of this article. No schools reported breathalyzing students for alcohol use during school or patient care activities, even though low concentrations of alcohol are capable of affecting student performance. Alcohol can be undetectable by a breathalyzer while still present and detectable in blood and urine.²⁷ Schools should consider this information since our study results showed that the most frequently reported incidents involved alcohol.

In general, schools reported a relatively tough approach to positive drug screens prior to admission, with 40% denying and almost 30% deferring admission. This is in stark contrast to a 17% dismissal rate for similar offenses once admitted to a professional program (Table 3). Likewise, there was little consistency in the consequences used by schools for student refusal or failure to complete a drug screen. Once a positive screen was confirmed by

testing, most offenders were referred to a pharmacy recovery network, where professionals such as counselors or addiction specialists determine the extent of the drug use problem and make recommendations. In many states, when health care students admit to an addiction and successfully complete a treatment program, they may continue to hold a pharmacy license.²⁸

The Joint Commission (JCAHO), which accredits hospitals and health care organizations, requires students who provide patient care, treatment, and services, to follow the same regulations and policies of the institutional site, which includes drug screens.²⁹ The Drug Free Workplace Act requires organizations to publish a policy concerning controlled substances and notify employees of that policy, establish a drug-free awareness program, and impose a penalty or require participation in a rehabilitation program for employees with workplace drug convictions.³⁰ Many professional health care programs do not have similar regulations in place for students or for faculty. Our study discovered that 70% of pharmacy programs do not require faculty members to be drug screened, and of those that have a screening policy for students, some have not implemented their policy.

Pharmacy experiential education is increasingly affected by the Drug Free Workplace Act of 1988 and the JCAHO statement regarding student drug screen requirements.²² A Butler and Purdue University study revealed a 33% increase in the number of sites requiring drug screens (from 12% in 2008 to 45% in 2013).¹⁸ This study revealed that 68% of institutional sites and 36% of community sites now require drug screens prior to a rotation. The primary motivating factor for implementation of a drug screening program was “experiential site requirement” and the most common times that drug screens are conducted were prior to experiential rotations. Unfortunately, drug screening prior to an anticipated event (eg, experiential rotation) is unlikely to detect student misuse.

Drug screens are controversial for many reasons. When respondents were provided an opportunity to provide additional comments regarding drug screen issues, they cited logistical issues, such as how to address false positives, drugs that are prescribed but misused, and synthetic substances that are undetectable on drug screens. Additional reasons cited included inconvenience, time and expense to students and administrators, complexity of comorbid mental health issues, unfamiliarity with best practices, unwillingness to look for problems and/or micromanage students’ personal lives, and the need to hold faculty equally accountable. In contrast, many school administrators made a case for drug screening students, highlighting the public’s health and welfare over individual student rights. They noted the importance of ensuring

optimal judgement and skills during patient activities, the responsibility to protect the well-being of students while in their charge, the importance of discouraging behaviors that could result in substance use disorder, and protection of the integrity of the school’s program and the profession of pharmacy. Also mentioned were requirements to uphold affiliation agreements with experiential practice sites, compliance with laws and regulations regarding illegal activities, and the practicality of preparing students for drug screens upon employment. Some commented that it sends a strong message to students that this is an important professional issue. This seems to be the case based on our study results, since schools that drug screen students without testing for alcohol reported significantly fewer alcohol-related incidents than did schools without a drug screening program.

Over 75% of college administrators who responded to the survey believed that randomly screening students deters substance misuse, but only 11% reported that their schools screen randomly. The term “random” was intentionally not defined to participants, rather they were asked to elaborate on the frequency, timing, and student selection process of their screening program. Only one school screened all students in all years of the program with the timing and number of screens per student being truly random. Other variations of “random” included screening all or some students once a year, and screening upon reasonable suspicion. These results beg the question, “How should random be defined?” when inconvenience and cost are indeed considerations. Schools should carefully consider their motivations when implementing a drug screen program, as well as the method(s) that will best achieve the desired result.

Many schools and organizations have responded to the national epidemic of drug abuse by enhancing their curricula on substance abuse but few have responded with enhanced measures to deter substance misuse among their own students.^{15,16,31} AACP recommends that schools drug screen students upon initial, conditional acceptance to the PharmD program and places emphasis on patient safety, professional integrity and public trust, and reassurance that the student is capable of completing a rigorous curriculum.^{32,33}

This research had several limitations, most notably that 27% of the schools did not respond to the questionnaire. There was risk of response and social desirability bias, and the questionnaire may not have been completed by the most knowledgeable or informed person(s) regarding this issue at the school. There may have been misinterpretation of questions and relatively few schools provided comments, negating the possibility for qualitative assessment of recurring themes. The fact that some

schools indicated that they have a drug screening policy, but do not enforce it, may have also confounded the results.

CONCLUSION

The objective of this study was to explore drug screening requirements, policies, and procedures among pharmacy programs, frequency of drug-related incidents, and types of substances misused by pharmacy students. The types of substances misused by students as reported by administrators in this study aligns with both state and national data. The results of this study clarify several aspects regarding drug screens but also emphasize how little we know about others, such as the depth and breadth of drug misuse among pharmacy students. The questions posed to our profession in a 2009 issue of the *Journal* by former AACP President Dr. Jeffrey Baldwin entitled, *The Addicts Among Us*, are still significant today.³⁴ These results will assist professional health care program administrators in evaluating their need to institute or enhance a drug screening program.

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Appendix 1. Respondent Comments Regarding Drug Screening Pharmacy Students

Reasons cited among schools for contemplating institution of a student drug screen policy

- "We've had student positives for illicit substances as part of experiential site requirements. By screening we can intervene earlier and offer help to students who are struggling with a substance use disorder."
- "We are increasingly being asked by experiential sites to drug screen students."
- "Substance abuse is on the rise in our college."
- "We want to deter students from using, help those that are, and protect our profession."

Reasons cited among schools for not intending to drug screen students

- "Each rotation site has different requirements for drug testing and how recently they must be obtained, so we defer this testing to the sites to save time and money."
- "Students already complete a variety of clearances and checks for admission and drug testing is required by our Board of Pharmacy for intern licenses."
- "Expense; we only drug test upon reasonable suspicion due to costs."
- "Our university legal counsel indicated that we cannot randomly drug screen students unless required by an experiential site."
- "Our university prefers the 'don't ask, don't tell' approach."

Reasons cited by any respondent for the belief that drug screens deter misuse

- "Students need a reason to say no and drug screens give them that reason."
- "Drug screening tells students that this issue is important to us."
- "Recreational users are more likely to abstain when schools have a drug screen program, but students who have a substance use disorder will not likely abstain despite consequences."
- "Students will be less likely to use drugs if they know they can be screened randomly at any time, while non-random drug screens are highly ineffective in detecting use."
- "Drug screens deter use only if truly random, frequent, comprehensive, and conducted in a quality manner."
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