Substance use disorders in physicians: Epidemiology, clinical manifestations, identification, and engagement

AUTHORS: Lisa J Merlo, PhD, MPE, Scott A Teitelbaum, MD
SECTION EDITOR: Murray B Stein, MD, MPH
DEPUTY EDITOR: Michael Friedman, MD

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INTRODUCTION

Alcohol and other drug use (including prescription drugs) can impair a physician's ability to practice medicine proficiently, putting patients at risk of harm. As a result, substance use disorders (SUDs) in physicians have been the subject of considerable clinical and regulatory attention. In the past, physicians with SUDs were described as "impaired physicians," a term that was also applied to physicians with psychiatric, cognitive, behavioral, or general medical problems with potential to adversely affect their ability to perform specific duties. More recently, the terminology has evolved to "physicians with potentially impairing conditions," to more accurately reflect the reality that not all physicians with a diagnosable SUD demonstrate workplace impairment.

Most of the data published on this subject are limited to physicians in the United States, where treatment of physicians with SUDs is typically overseen by a physician health program (PHP); however, the information may be relevant to other types of clinicians [1,2] and other countries [3-12]. PHPs in the United States, Canada, Australia, and elsewhere provide coordination, monitoring, and expertise in the care of impaired physicians (and sometimes other health care professionals) [13]. The PHP care, combined with participation in high-quality SUD treatment, is associated with high rates of sustained remission and return to medical practice among physicians [14-19].

This topic addresses the epidemiology, clinical manifestations, identification, and engagement of physicians with SUDs. The assessment and treatment of physicians with SUDs are discussed separately. Prescription drug misuse and continuing care for addiction, as well as the epidemiology, pathogenesis, clinical manifestations, assessment, diagnosis, and treatment of specific SUDs, are also discussed separately:

- (See "Substance use disorders in physicians: Assessment and treatment".)
- (See "Prescription drug misuse: Epidemiology, prevention, identification, and management".)
- (See "Continuing care for addiction: Components and efficacy".)
- (See "Continuing care for addiction: Implementation".)
- (See "Risky drinking and alcohol use disorder: Epidemiology, clinical features, adverse consequences, screening, and assessment".)
- (See "Cocaine use disorder: Epidemiology, clinical features, and diagnosis".)
- (See "Stimulant use disorder: Treatment overview".)
- (See "Methamphetamine use disorder: Epidemiology, clinical features, and diagnosis".)
- (See "Cannabis use disorder: Clinical features, screening, diagnosis, and treatment".)
- (See "Cannabis use and disorder: Epidemiology, pharmacology, comorbidities, and adverse effects".)
- (See "Opioid use disorder: Epidemiology, clinical features, health consequences, screening, and assessment".)
- (See "Benzodiazepine use disorder".)

TERMINOLOGY

- **Addiction** – The American Society of Addiction Medicine has defined addiction to alcohol and other drugs as “a primary, chronic disease affecting brain reward, motivation, memory and related circuitry. Dysfunction in these circuits leads to characteristic biological, psychological, social and spiritual manifestations. This is reflected in an individual pathologically pursuing reward and/or relief by substance use and other behaviors” [20]. Specific substance use disorders (SUDs) are discussed separately.

- **SUDs** – The American Psychiatric Association defines SUDs as the presence of two or more of the following symptoms occurring within a 12-month period, including: taking more substance than intended, unsuccessful efforts to cut down, significant time spent using or recovering from the substance, craving, failure to perform major role obligations, continued use despite interference with social/occupational/recreational activities, use in

hazardous situations, use despite significant negative impact on health, tolerance, and withdrawal.

- **Physician impairment** – The American Medical Association defines physician impairment as the inability to practice medicine with reasonable skill and safety to patients by reason of psychiatric or general-medical conditions [21]. SUDs are the most common condition leading physicians to become impaired [22]. Impairment may also refer to mental disorders, physical problems, neurologic problems, infectious issues such as HIV or hepatitis C, or incapacitation from other medical illness.

- **Physician health programs (PHPs)** – State- or provincial-level PHPs, also known as "professional health monitoring programs," in the United States and some other countries coordinate oversight and treatment for physicians with SUDs. (See "Substance use disorders in physicians: Assessment and treatment", section on 'Physician health programs'.)

EPIDEMIOLOGY

Prevalence — Research suggests that physicians are as likely as their age-matched peers to have experimented with illicit substances, but are less likely to be current users [23]. Despite this, in the United States, the prevalence of substance use disorders (SUDs) among physicians is similar to that in the general population [23-29]. The lifetime prevalence of SUDs has been estimated at 8 to 13 percent in the United States population [30]. In physicians:

- A study involving 7197 American surgeons (28.7 percent response rate) found that 15.4 percent had a score on the Alcohol Use Disorders Identification Test-C (AUDIT-C) suggesting the presence of an alcohol use disorder [31].

- A study of 7206 American physicians of various specialties (26.7 percent response rate) showed that 21.4 percent had a likely SUD (alcohol and/or other drugs), based on screening with the AUDIT-C and World Health Organization Alcohol, Smoking, and Substance Involvement Screening Test measures [32].

Several studies of United States physicians with SUDs have documented that alcohol is the most common substance of concern in this population; with prescription opioids being the second most common [23,26,27,33-35]. Previous research suggested that rates of prescription drug misuse, notably benzodiazepines and opioids, were higher among physicians when compared with the general population [36].

One retrospective study of physician health program (PHP) medical records of 3604 physicians reported "drug of choice," as follows [23]:

- Alcohol – 25 percent
- Opioids – 25 percent
- Marijuana – 12 percent
- Cocaine – 11 percent
- Sedatives – 10 percent
- Amphetamines – 4 percent
- Inhalants – 1 percent
- Other – 8 percent

Results were similar in a smaller study of PHP-monitored physicians that reported on all substances used by 109 physicians prior to PHP participation [34].

Trends over time — In the past, the prescription drugs misused by physicians were primarily self-prescribed or otherwise obtained through the physician's professional access [36,37]. More recent educational and regulatory efforts to prevent medication diversion and inappropriate prescribing have decreased these behaviors. Unfortunately, the availability of licit and illicit prescription drugs through "pill mills" and "on the street" has increased access these medications for both physicians and their counterparts in the general population [38,39].

The number of physicians assessed and treated for SUD appears to be growing, which may reflect enhanced awareness of the problem and an increased emphasis on risk management. However, multiple barriers to treatment-seeking still exist among physicians with SUD, including stigma and fear of professional and financial consequences [40]. The Federation of State Medical Boards now recommends against inclusion of intrusive questions regarding mental health or addiction treatment on licensure and credentialing applications [41]. This increases confidential access to SUD treatment for physicians, which is associated with greater likelihood of help-seeking [42].

The COVID-19 pandemic has led to increased rates of substance use among physicians [43]. At the same time, it has highlighted the importance of mental health care for the physician workforce. In the United States, for example, passage of the Dr. Lorna Breen Health Care Provider Protection Act is helping to destigmatize and improve mental health treatment access for physicians and other health care workers [44].

Comorbidities — The prevalence of co-occurring psychiatric disorders in physicians with an SUD is high [25,45-47], with estimates from 25 to 75 percent. As examples:

- A study of 99 physicians who completed a diagnostic evaluation by the Florida PHP found high rates of co-occurring psychiatric disorders [48]:

  - Major depressive disorder – 30.3 percent
  - Bipolar disorder – 11.4 percent
  - Antisocial personality disorder – 7.2 percent
  - Generalized anxiety disorder – 7.1 percent
  - Social phobia – 5.1 percent

- A study of 157 physicians referred to the Virginia PHP found that 39 percent were referred for an uncomplicated SUD, 39 percent for a psychiatric disorder without an SUD, and 21 percent had a dual diagnosis of a SUD with a co-occurring psychiatric disorder [47]. The most prevalent comorbid disorders among the physicians with an SUD were:

  - Bipolar disorder – 33 percent
  - Depression – 24 percent
  - Antisocial personality disorder – 9 percent
  - Generalized anxiety disorder – 9 percent

The presence of a coexisting psychiatric disorder was associated with higher risk of SUD relapse among 292 health care professionals enrolled in the Washington PHP [49].

RISK FACTORS

Physicians monitored by a physician health program (PHP) often report initiating and continuing substance use for reasons similar to those reported by the general population [50,51].

Physicians in general — Some factors are unique to physicians; for example, physicians may have greater access to prescription drugs compared with nonphysicians. Burnout, though not unique to physicians has also been associated with substance use [32]. However, research findings on the association between work-related stress and substance use have been mixed [52,53].

Factors associated with professional success (ie, strong drive for achievement, conscientiousness, and tendency to deny personal problems) may make physicians more susceptible to mental health problems [54]. The culture of medicine has been faulted for promoting attributes that interfere with physician wellness and discourage physicians from obtaining clinical care. For example:

- Doctors are trained and conditioned to be self-reliant and self-sufficient; they are more likely to attempt to treat themselves than are members of the general population [23,55].

- The ability to perform under stress and despite personal difficulties is a hallmark of the profession. Physicians are taught to place their own needs secondary to others'. As an example, in an anonymous survey of 280 attending physicians and 256 advanced practice clinicians at a major children's hospital, more than 80 percent came to work even when physically ill in the last year due to a sense of obligation to patients and colleagues, as well as fear of ostracism [56].

- Confidence in understanding medications may contribute to self-medication and underestimating consequences of unsupervised or nonmedical use of prescription drugs [55,57].

- Professional arrogance can lead to difficulty taking directions or input from others. Physicians often have sophisticated denial with elaborate justification and rationalization, making intervention more difficult. Many physicians have difficulty admitting that the clinical care they provide has been impaired.

- Gender may also be a factor; research suggests that female physicians with SUD are not referred for treatment as frequently as male physicians [58,59]. However, in our clinical experience, female physicians often have more severe SUD and/or more severe psychiatric comorbidity at the time of referral.

Clinical specialties — Substance use disorders occur in physicians across medical specialties, though at a higher rate among physicians in anesthesiology, emergency medicine, psychiatry, and family practice [25,27,29,60-67]. Multiple studies suggest that pediatricians have the lowest rate of SUD.

Research suggests that use of specific drug classes may vary across medical specialties. Emergency medicine residents reported higher rates of current cocaine use compared with other specialties [68]; rates of marijuana use were higher among physicians in emergency medicine, family practice, anesthesiology, and psychiatry [29,68]. Psychiatrists have been reported to have a higher rate of benzodiazepine misuse [29]; female surgeons have been reported to have a higher rate of alcohol use compared with other female physicians [69].

Anesthesiologists appear to be more likely than other physicians to use drugs intravenously, and to use opioids and propofol nonmedically [70,71]. Anesthesiologists generally have greater proximity and access to these medications [70,72]. Fentanyl has been the most commonly misused controlled substance among anesthesiologists [73] since long before illicit fentanyl

became widely available. It has also been hypothesized that anesthesiologists' exposure to aerosolized substances like fentanyl in the operating room may influence future opioid use [35,52,53,74]. Specifically, secondhand exposure to operating room gases has been postulated as leading to unintended neuronal sensitization, with an increased risk for developing an opioid use disorder and for relapse [75]. (See "Substance use disorders in physicians: Assessment and treatment", section on 'Medication for opioid use disorder'.)

CLINICAL MANIFESTATIONS

Clinical features of substance use disorder (SUD) in physicians include manifestations of specific SUDs, discussed separately, as well as symptoms observed across substances, including those described below [76].

- Changes in mood/affect – eg, mood swings, depression, blunted affect, irritability, appearing overwhelmed
- Decreased productivity – eg, tardiness, absenteeism, frequent breaks, missed appointments
- Increased mistakes – eg, medical errors, charting errors, forgetfulness
- Inconsistent hours – eg, rounding at variable times, unexplained disappearances, taking extra shifts (especially at night)
- Complaints from patients, colleagues, supervisors, or lawsuits
- Evidence of diversion – eg, missing/broken vials, failure to document appropriately, extra attention to patients receiving controlled medications, inappropriate prescribing
- Deterioration in appearance – eg, disheveled, poor hygiene, wearing long sleeves in hot weather
- Deterioration in physical health – eg, flu-like symptoms, appearance of oversedation, bloodshot/watery eyes, weight loss/gain, lack of coordination, or tremors
- Changes in social interaction – eg, social withdrawal, increased conflicts, excessive drinking at events, inappropriate behavior

Addiction is a progressive disease, and the earliest symptom is often discord in a primary relationship. Isolation and avoidance of peers and friends is common. Physicians with SUDs

suffer emotionally and may exhibit signs of depression, irritability, mood swings, and disillusionment.

With progression of the SUD, there is an increasing impact on social life, health, and finances. Excessive spending is common. Legal issues may ensue, such as arrests, domestic violence, and charges of driving while under the influence [77]. Spiritual problems may exist, although these are seldom identified until the physician undergoes a formal evaluation by an addiction specialist. Physicians with SUDs engage in actions contrary to their values; thus, shame is often present, and a pervasive pessimism may arise.

Studies of physician participants in physician health programs (PHPs) show small but significant rates of suicide and lethal overdose [78,79]. A study conducted by the Colorado PHP demonstrated that suicidal ideation, reported by 4 percent of participants, was associated with experiencing multiple stressors and lack of personal supports [80]. A separate report by the General Medical Council in the United Kingdom suggested that physicians may be at increased risk for suicide while undergoing investigation of their fitness-to-practice medicine [81]. (See "Suicidal ideation and behavior in adults", section on 'Physicians and nurses'.)

Substance-related cognitive impairment may result in poor judgment, impulsivity, and difficulty modulating affect. Clinical performance is often the last thing to be impacted, so evidence of work-related impairment suggests a severe SUD. As an example, in a 2017 report of 124 physicians referred to the Colorado PHP due to concerns of cognitive impairment/decline, 9 percent were diagnosed with an SUD [82].

Denial is often prominent in individuals with SUDs. Physicians are adept at being able to "suit up" (ie, look well and function as if well). Even a significantly depressed physician with advanced addiction will often attempt to minimize symptoms.

COURSE OF ILLNESS

The pattern of substance use disorder (SUD) development in physicians is similar to the general population [50], but the length of time before recognition of an active SUD may vary, depending on the substance used. Alcohol use disorders may progress for more than 15 years before the physician or their associates recognize the need for treatment; whereas intravenous fentanyl use may cause observable consequences within a few months to one year.

Physicians who develop SUDs often begin to use alcohol excessively and/or use illicit drugs prior to medical school [83-85]. Research involving a survey of 105 health care professionals (51

percent physicians) participating in a physician health program (PHP) found high rates of regular use before medical (or other professional) school for:

- Tobacco – 73 percent
- Alcohol – 90.4 percent
- Other drugs – 64.4 percent

Occupational risk factors for developing a SUD may be evident as early as medical school. As an example, an anonymous survey of 4402 United States medical students found that [86]:

- 34.5 percent believed it was acceptable to self-prescribe antibiotics.
- 57.7 percent believed it was acceptable to prescribe for a spouse.
- Students suffering from burnout were more likely to find these prescribing behaviors acceptable and less likely to believe that they have a responsibility to report impaired colleagues.
- Medical students with Alcohol Use Disorders Identification Test-C scores suggesting an alcohol use disorder (32.4 percent) were less likely to believe they had a responsibility to report a colleague impaired by alcohol/drugs.

IDENTIFICATION AND ENGAGEMENT

Recognition — Reports to physician health programs (PHPs) come from many sources, including patients, families, hospital staff, coworkers, peers, and the legal system. Colleagues who suspect that a physician is misusing psychoactive substances should not attempt to establish or confirm a diagnosis. This will likely require a comprehensive multimodal assessment, and should be left to a professional evaluator. Instead, it is important for colleagues to note and document the behaviors and events that indicate possible substance misuse. Collateral informants (ie, colleagues, administrators, and family members) should record details of aberrant behaviors, performance deficiencies, and psychosocial problems. Detailed firsthand observations are more useful to the evaluator than vague or generalized assertions.

Responsibilities of colleagues — Reporting a colleague or friend with a suspected substance use disorder (SUD) to a PHP or medical board can be uncomfortable, and research suggests that many physicians are reluctant to report a colleague, even one they suspect is impaired or incompetent [87,88]. They may wish to avoid confrontation, or may fear causing harm to the physician's career and/or reputation.

However, this "conspiracy of silence" has the potential to cause further harm by allowing the physician to continue practicing while impaired. Physicians share a duty to patients, their afflicted colleague, and their profession to promptly address substance misuse in a fellow physician. Specific potential ramifications of not intervening include [89]:

- Putting the physician's patients at risk of harm
- Subjecting themselves to potential professional or legal sanctions
- Delaying the physician's entry to treatment
- Increasing the negative long-term impact of the SUD on the physician's family and career

Nearly all states in the United States have legal requirements for physicians to report impaired colleagues to the state medical board or PHP [90]. The majority of United States physicians responding to a national survey indicated they would report (or have reported) another health care professional for impairment [87]. A national survey of 1685 Dutch physicians (47 percent response rate) indicated that 97 percent intend to act upon presumption of SUD in a colleague; however, of the 29 percent who have suspected a colleague suffered from an SUD, only 65 percent actually took action [91]. Reporting impaired colleagues is mandatory in Australia [92].

Many states and some countries allow for anonymous reporting. PHPs are available to provide advice about reporting upon request. In some states, the threshold for reporting has been lowered to include physicians who are misusing substances but have not yet manifested impaired work performance. The reporting requirements of these "low threshold" states are meant to prevent physician impairment.

Research involving an anonymous survey (n = 1685 Dutch physicians; 47 percent response rate) and 21 interviews (n = 10 Dutch physicians with SUD, n = 4 collateral informants, and n = 7 PHP staff members), confirmed that individual factors (eg, fear, embarrassment, lack of awareness) create barriers to help-seeking among physicians with SUD [93]. However, intervention from the physician's social network (eg, offering support and/or confrontation without judgment) was described as an important facilitator of accessing care. Support or confrontation offered by a professional colleagues (ie, peer, supervisor, employer) was noted as a more powerful facilitator than intervention from personal contacts (ie, partner, family member, friend).

Screening for drug use — Routine random drug testing of physicians may be an effective component of both prevention and early intervention. Mandatory testing is performed in other professions where public safety is an issue, such as transportation. Some experts suggest random drug testing of physicians, with initial application in the high-risk fields of anesthesiology, surgery, and emergency medicine [94]. Others suggest testing of all physicians, although it remains a controversial recommendation resisted by many organizations

representing physicians [95]. For-cause testing following an adverse event has been considered but discouraged [96].

Family members — Shame, fear of harming the person with an SUD, or fear of the adverse impact on their own lives (eg, loss of income) can lead family members to deny a problem when asked by clinicians or others.

The family of the physician with an SUD is affected when the relationship that develops between the physician and the drug takes precedence over the relationships with spouse, children, and parents. The emotional and physical health of family members is compromised. Family members are often left to themselves dealing with day-to-day stressors, financial issues, and shame. Children of parents or caregivers with an SUD often have significant psychosocial issues, including a predilection for drug use [97].

Intervention — Resistance and denial are common characteristics of severe, impairing SUDs. Some physicians with active SUDs will enter treatment on their own initiative, and others will do so after receiving feedback from a family member or colleague. However, the remainder will resist acknowledging that they have a problem and may benefit from a formal intervention.

Intervention is the process of presenting facts to a person with a substance-related problem about their behavior in a way that raises awareness, lessens denial, and motivates the person to make changes – often to receive a professional assessment followed by treatment. The aim is to help the physician accept professional care with sensitivity to their profession, employment, licensure, and desire for anonymity.

Participants in an intervention describe to the physician specific, observable problem behaviors and incidents that have led to their concern about impairment [97]. A script can be helpful. They should be kind and empathic, express positive regard for the physician's abilities, and avoid accusations, blame, arguing, or negotiating. An intervention should have a specific plan of action, typically identifying the preferred setting for professional assessment and treatment, and providing transportation to ensure a safe transition. Participants in the intervention should insist that the action be immediate.

Intervention participants may include the physician's colleagues, friends, staff, and/or family. The intervention leader should be an experienced professional who is familiar with the intricacies of the physician's role. The leader should not be the physician's friend, close colleague, or employer – relationships that might compromise the person's objectivity. They should identify the other participants and educate them on the procedures. They should all share the belief that the intervention is needed and agree on a plan, as one participant who is opposed or ambivalent at an intervention can sabotage the process.

The style, setting, and urgency of an intervention should be customized to the physician based on such factors as the level of suspected impairment, the severity of the SUD, concern for imminent danger to the physician or their patients, and input from a PHP. Mornings may be the best time to schedule the intervention, when there is the least likelihood of physician intoxication.

Many physicians with active SUDs who are subject to an intervention will agree to the plan for a professional assessment and treatment. However, because physicians work in a safety-sensitive occupation, a firmer approach may be needed if the physician refuses. The consequences of not following through with the plan (ie, loss of medical license and/or clinical position) should be made clear to the physician. Involvement with a PHP may be helpful in posing these potential consequences.

Concerns have been raised regarding the ethics of this “beneficent coercion” by PHPs who require physicians to be evaluated and/or treated for SUD to prevent reporting to the licensing board [98]. The overriding factor, however, is that treatment is essential when the physician manifests impairment and is a potential danger to their patients or to themselves.

Participants in the intervention should be prepared that the physician might respond with resistance, anger, and possible threats of legal action. Such responses should never be a barrier to proceeding. In our clinical experience, physicians’ initial response of anger is often replaced with gratitude as the physician progresses in recovery. Getting a physician into treatment often has lasting benefits [58,99,100]. (See "Substance use disorders in physicians: Assessment and treatment", section on 'Outcomes of physician health programs'.)

SOCIETY GUIDELINE LINKS

Links to society and government-sponsored guidelines from selected countries and regions around the world are provided separately. (See "Society guideline links: Opioid use disorder and withdrawal" and "Society guideline links: Benzodiazepine use disorder and withdrawal" and "Society guideline links: Alcohol use disorders and withdrawal" and "Society guideline links: Stimulant use disorder and withdrawal" and "Society guideline links: Cannabis use disorder and withdrawal".)

SUMMARY AND RECOMMENDATIONS

- **Terminology** – Physician impairment refers to the inability to practice according to accepted standards as a result of a medical or psychiatric issue, most prominently due to a

substance use disorder (SUD). Physician health programs are state or provincial-level physician health monitoring programs (PHPs) that coordinate oversight of treatment for physicians with SUDs (See 'Terminology' above.)

- **Epidemiology** – In the United States, physicians have similar rates of SUD as the general population, but higher rates of prescription drug misuse. Alcohol is the most frequently misused drug among physicians treated in PHPs. (See 'Epidemiology' above.)

- **Risk factors**

  - **Physicians in general** – Some factors are unique to physicians; for example, physicians may have greater access to prescription drugs compared with nonphysicians. Burnout, though not unique to physicians has also been associated with substance use. Factors associated with professional success may make physicians more susceptible to mental health problems. The culture of medicine has been faulted for promoting attributes that interfere with physician wellness and discourage physicians from obtaining clinical care. (See 'Physicians in general' above.)

  - **Clinical specialties** – Substance use disorder occur in physicians across medical specialties, though at a higher rate among physicians in anesthesiology, emergency medicine, psychiatry, and family practice. Multiple studies suggest that pediatricians have the lowest rate of SUD.(See 'Clinical specialties' above.)

- **Clinical manifestations** – Manifestations of SUDs in physicians include changes in mood/affect; decreased productivity; increased mistakes; inconsistent hours; complaints from patients, colleagues, or supervisors; lawsuits; evidence of diversion; and deterioration in the physician's appearance and physical health. (See 'Clinical manifestations' above.)

- **Responsibilities of colleagues** – Nearly all states in the United States have legal requirements for physicians to report impaired colleagues to the state medical board or PHP. Many states and some countries allow for anonymous reporting. In some states, the threshold for reporting has been lowered to include physicians who are misusing substances but have not yet manifested impaired work performance. The reporting requirements of these "low threshold" states are meant to prevent physician impairment. (See 'Responsibilities of colleagues' above.)

- **Intervention –** Intervention is the process of presenting facts about the impaired physician's behavior to them in a way that lessens denial and encourages treatment entry. Some physicians with active SUDs will enter treatment on their own initiative, and others

will do so after receiving feedback from a family member or colleague. However, the remainder will resist acknowledging that they have a problem and may benefit from a formal intervention. Successful intervention requires careful preparation and an experienced leader. (See 'Intervention' above.)

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