

Chapter 10

Substance Use Disorders



Chwen-Yuen Angie Chen and Tiffany I. Leung

I cannot help but believe that David's aloneness, his addiction, was worse for being in the medical profession—and not just because of ease of access, or stress, or long hours, but because of the way our profession fosters loneliness... There is a silent but terrible collusion to cover up pain, to cover up depression there is a fear of blushing, a machismo that destroys us. The citadel quality to medical training, where only the fittest survive, creates the paradox of the humane, empathetic physician like David, who shows little humanity to himself. The profession is full of 'dry drunks' physicians who use title, power, prestige and money just as David used drugs; physicians who are more comfortable with their work identity than with real intimacy. And so it is when one of our colleague is whisked away, to treatment, and the particulars emerge, the first response is 'I had no idea'. ...It is not individual physicians who are at fault as much as it is the system we have created.

– The Tennis Partner, Abraham Verghese, MD

C.-Y. Angie Chen (✉)

Stanford University, Department of Primary Care
and Population Health, Palo Alto, CA, USA

e-mail: chchen@stanfordhealthcare.org

T. I. Leung

Maastricht University, Maastricht, The Netherlands

Maastricht University Medical Center+, Maastricht, The Netherlands

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L. Weiss Roberts, M. Trockel (eds.),

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Overview: Recognizing Substance Use Among Physicians and Its Impact on the Practice of Medicine

Physicians, compared to the general population, tend to lead healthier lifestyles in terms of using less tobacco and adhering more often to preventive care guidelines. However, physicians experience comparable or even higher rates of substance use disorders (SUDs) than the general population (Earley 2014). Physician access and referral to treatment for substance use disorders should be no different than for any other professional or the general population, but, unlike many other professionals, physicians with active substance use disorders are a special population who pose a public health and safety risk similar to airline pilots (DuPont et al. 2009). It would stand to reason that the medical profession would be stalwart toward the research, education, and treatment of addictive disorders especially among its own, and yet acknowledging alcohol and drug use in the physician community seems even more challenging due to the stigma and risk of losing professional licensure. Despite the existence of state physician health programs (PHPs), which have proven to be the gold standard of addiction treatment, with better outcomes for the rehabilitation of impaired physicians than treatment as usual for the general public, sufficient access, resources, and successful re-integration into practice remain inconsistent for the addicted physician, as not all states have a PHP and each program may have a different relationship with the governing licensing board (DuPont et al. 2009).

The minimal recognition of substance use disorders among physicians likely begins with limited education and training in addiction medicine during medical school. This deficit is combined with a deeply ingrained culture of perfectionism and invincibility, coupled with social and professional stigma that tend toward penalizing and ostracizing physicians for mental health and substance use disorders. This scenario is a formidable foe to a vulnerable or impaired physician who desperately needs help. Perceived professional risk to the discovery of substance use disorders among physicians is underscored by

state-to-state variations in the existence of physician health programs and standards set out by licensing bodies. There remain a few states, including California, where there is no formal physician health program at the time of this writing (Federation of State Physician Health Programs 2018).

Under-diagnosis and low rates of referral of addicted physicians to effective treatment create a dangerous ripple effect on patient care and safety, including increased medical errors, under-treatment of substance use disorders, and poor comorbid medical outcomes when impaired physicians continue to practice (DuPont et al. 2009; Pilowsky and Wu 2012; Yoast et al. 2008). In this chapter, the prevalence and characteristics of physicians suffering from substance use disorders, risks for developing these disorders, and the associated consequences of physician substance use disorder will be described across the life cycle of the medical profession, from physicians-in-training to the practicing physician. The culture of the profession and opportunities for improvement will be discussed, including how addiction among physicians has been handled through the various state physician health programs and how policies promoting standardization could be beneficial.

Epidemiology: Trends in Substance Use Among Physicians

Substance use disorders (SUDs) are defined along a spectrum of severity ranging from substance misuse, characterized as use for non-intended purposes, risky and hazardous use, to more significant substance dependence that is identified by tolerance, withdrawal, cravings, and a person's recurrent failure to meet home, work, school, or other responsibilities (U.S. Preventive Services Task Force 2013). Physician impairment, on the other hand, is defined as the inability or impending inability of a physician to practice his or her health profession in a manner that conforms to acceptable standards of practice (Baldisseri 2007). According to data collected by state physician health programs (McLellan et al. 2008), substance use disorders are the leading cause of physician impairment, although substance use disorders do not in all

instances lead to impairment. Beyond substance use disorders, physician impairment can also be caused by maladaptive behaviors, process addictions, mental illness, or medical disability including that related to aging.

Approximately 10–12% of physicians develop a substance use disorder with a lifetime prevalence of 7.9%, which is close to the lifetime prevalence in the general population of 8–13%, although under-reporting may be a factor in the physician (Earley 2014). Alcohol is the most commonly misused substance among physicians and especially among those characterized under the physician health programs study by McClellan et al. (50.3%) (McLellan et al. 2008), and some surveys show a higher prevalence of alcohol overuse in surgical specialties (see below). Physicians also experience higher rates of unsupervised prescription drug use, particularly opioids and benzodiazepines. Suicide among physicians is also higher than the general population (Schernhammer and Colditz 2004; Lindeman et al. 1996; Center et al. 2003).

As in the general and physician population, there are more male physicians in treatment than women physicians, with a ratio of as high as seven-to-one, in some surveys (McGovern et al. 1998), likely mirroring the prevalence of addictive disorders in the physician community. However, despite not being in treatment, women physicians are more likely to report problematic drinking by the end of medical school and have substance use disorders later in their career compared to non-physicians (Flaherty and Richman 1993; Bissell and Jones 1976), but women make up only 13% of physicians in PHP treatment programs (DuPont et al. 2009).

Unique risk factors for physicians developing substance use disorders include easier drug access as a physician and the biological effect of the “drug of preference.” As an example, opioid access and use can result in rapidly rising tolerance, leading to increasing opioid diversion, and, consequently, increasing risk of detection of SUD by a colleague (Earley 2014). Also, a physician’s personality traits, such as perfectionist behavior and high-class ranking, are arguably a risk factor for SUD (Bissell and Jones 1976). Compulsive behaviors (Udel 1984) may also contribute to increased risk. The strongest predictor of SUD in physicians is genetic loading, or

a family history of addiction, which is the same for the general population (Flaherty and Richman 1993).

Current evidence on physician impairment and physician substance use most frequently reports substance use disorder prevalence among medical specialties, with five specialties representing most of those with use disorders: anesthesiology, emergency medicine, psychiatry, family, and internal medicine (Earley 2014). Additional studies describe possible associations between specialty and the type of substance used, for example, higher than average risk of alcohol use disorders among dermatologists, surgical specialties, emergency medicine physicians, pathologists, anesthesiologists, family medicine doctors, radiologists, obstetric-gynecologists, and preventive and occupational medicine physicians (Oreskovich et al. 2015). There is a notably higher prevalence of benzodiazepine use among psychiatrists (Oreskovich et al. 2015). State physician health programs (PHPs) are uniquely positioned to be able to collect data on physician substance use disorders because such programs can closely follow physicians from treatment entry through substance monitoring and treatment completion (DuPont et al. 2009; McLellan et al. 2008).

Nonetheless, due to the sensitive nature of physician impairment and general stigma around substance use disorders, data collection and evidence-based studies on these topics are challenging. For example, limitations of studies assessing SUD prevalence among physicians of various medical specialties are primarily in their method of data collection, which frequently includes anonymous convenience sample self-reporting in questionnaires. This may result in a biased view of physician substance use disorders. Additionally, poor quality data and reporting and a lack of critical analysis of available data can lead to under-reporting of physician impairment and its potential causes. This can lead to reduced availability of confidential, compassionate treatment options, overall under-treatment, and insufficient policies toward successful rehabilitation and reintegration of physicians back into practice.

However, knowledge gaps remain, such as data on ethnic and cultural variation and extent and etiology of substance use disorders among doctors across the span of their careers, starting in medical school.

Culture of Substance Use in Medical Training

Substance use, particularly alcohol, among medical trainees is a frequent yet also under-reported occurrence, such that the actual prevalence of substance use meeting criteria for a substance use disorder diagnosis is unknown. One study surveyed approximately 5000 medical students from 16 medical schools in the USA, finding that about one-third of students engaged in excessive drinking and binge drinking (Frank et al. 2008).

In many ways, the process of medical training reflects the binging pattern and “use-despite-harm” characteristic of addiction. Binging is analogous to the unhealthy imbalance or integration of work and play: there is a lack of moderation in the way medicine is learned in medical school, where tremendous effort, time, and resources are expended to learn an enormous breadth of information in a limited amount of time. In residency, duty hours still well exceed normal working hours and conditions for the average laborer. As an occupation with high professional expectations, physicians-in-training and practicing physicians seek to prove competence, sometimes by overworking, attempting to meet super-human expectations, and subsequently developing maladaptive behaviors that habituate poor self-care and potential reliance on substances, such as alcohol or prescription drugs, to facilitate self-management. Typical warning signs of overwork, poor self-care, burnout, or substance use disorders, including changes in mood and judgment, may be ignored, despite the concerns of family, friends, or peers.

Case Illustration 10.1

A fourth-year neurology resident at Jackson Health System in Florida drew nationwide attention and outrage in January 2016 after a video was posted to [YouTube.com](https://www.youtube.com), showing her assaulting an Uber driver while intoxicated with alcohol. She apologized later for her actions, noting that she had ended a 2-year relationship that day and her father had been hospitalized in the hours before the

encounter occurred. Her residency was terminated in April 2016 (Alexander 2016; Goldstein 2016).

Discussion Questions:

- What contributing factors could have led to alcohol use for this resident as a measure to cope with the reported circumstances?
- What led to this physician's termination? What alternative, more compassionate options might be possible?
- What role does social media play as it increases potential for public scrutiny and judgment of physicians, their employers, and associated organizations?

In another survey of medical students, of 2046 senior students from 23 US medical schools who responded, 87.5% reported using alcohol in the past month, 10% used marijuana, 10% used tobacco, 2.8% used cocaine, and 2.3% used tranquilizers without a doctor "telling them to" (Baldwin et al. 1991). In the same survey, an additional 1.1% of students reported misusing an opioid other than heroin. The majority of these students reported first using substances, excluding cigarette smoking, either in high school or college. For cigarette smoking, 35.3% of respondents first started smoking during grade school or before and 44.5% started in high school. First use of alcohol or marijuana also usually occurs during high school. However, first use of tranquilizers occurred after starting medical school for 35.9% of seniors who used them.

In this same study, medical school seniors appeared to be more lenient in their attitudes toward colleagues who used alcohol and marijuana occasionally, compared to colleagues who used other drugs such as cocaine, tranquilizers, amphetamines, psychedelics, and opiates (Baldwin et al. 1991). However, students also tended to endorse harsher consequences, such as suspension or expulsion, instead of treatment or counseling if they perceived that their colleagues were impaired by such use.

Less is known about the use of substances, especially prescription stimulants, among medical students and residents with the intention of enhancing cognitive or academic performance. The use of stimulants, whether prescribed or misused, in this manner is a well-known and concerning phenomenon among undergraduate students, with past years' use prevalence rates of up to 2–11% (Ponnet et al. 2015). Medical students and residents train toward an occupation with high professional expectations and accompanying tendencies toward perfectionism; the use of performance-enhancing substances has an unknown effect on learning, development of new skills, and longer-term consequences, such as increasing risk for or enabling the use of other substances (Rose and Curry 2009).

The relative lack of attention to substance use disorders as part of the medical school curriculum also contributes to the problem of SUD among medical trainees. This also results in inadequate preparation of future physicians in diagnosing and treating substance use disorders. One paper reported that although 54% of first-year students surveyed thought it was highly relevant to screen for substance use disorders, by the time they graduated, only 46% thought it was highly relevant (Frank et al. 2008). Medical schools provide little in the form of education to inform students' attitudes and behaviors regarding the relevance of substance use disorder counseling and treatment (Frank et al. 2008). Unfortunately, another study done in Massachusetts found that even after students graduate from medical school and advance in their training, perceived preparedness and willingness to treat SUD only decrease (Back et al. 2018). This is a missed opportunity for teaching about a potentially high-impact public health topic that is also relevant to physicians' self-care and care of peers (Brown et al. 1995).

Along with public outcry in response to the opioid epidemic in the early 2000s, medical education has also developed a growing recognition and urgency to train physicians in addiction medicine. For example, the governor of Massachusetts launched a collaborative effort in 2015 with the Massachusetts Medical Society and the Massachusetts Department of Public Health to develop a series of ten core competencies relevant to prescription drug misuse that each of the state's 3000 medical students will learn (Governor's

Medical Education Working Group on Prescription Drug Misuse 2015; Antman et al. 2016). A group of the core clerkship directors in Massachusetts—including those in family medicine, medicine, obstetrics-gynecology, pediatrics, psychiatry, and surgery—have already begun to incorporate subsets of the competencies into their curricula.

In another example of medical education development in addiction medicine, the Warren Alpert Medical School of Brown University collaborated with the Rhode Island Department of Health to develop a 4-year integrated addiction medicine curriculum for medical students (McCance-Katz et al. 2017). In addition to at least 3 hours of didactics on SUD in the pre-clinical years, students must also perform a drug and alcohol screen on at least five patients per year for each of the 4 years of medical school. If the patients screen positive, they should then be able to perform brief intervention and referral to treatment (SBIRT) when appropriate. Additional case-based learning and clinical skills assessment are done in the clinical years.

To prevent the propagation of unhealthy lifestyles begun during medical training, dedicated curricula on addiction medicine, a growing number of addiction specialist role models, and even a change in how healthy behaviors are perceived for physicians-in-training are all necessary and in turn will improve patient care.

Addiction in Medical Practice: Affecting the Clinician and Affecting Care

Addressing substance use disorders in a routine outpatient visit can be challenging due to limited resources (Polydorou et al. 2008). Visit time is brief and a great deal of mandated screening questionnaires and related activities must occur in a short period of time. Physicians in clinical practice do not typically screen and counsel on substance use disorders as they do on tobacco (Pilowsky and Wu 2012). Additionally, there is a notable lack of insurance coverage to reimburse treating physicians for providing substance use screening and counseling, whether the patient is a physician or not.

Alcohol and drug screening in primary care is inconsistent. In a national survey conducted in 2000 by the National Center on Substance Abuse at Columbia University, of 648 primary care physicians and 510 adults receiving treatment for substance use in 10 treatment programs, a majority of patients (53.7%) reported that their primary care physician did nothing about their substance abuse; 43% reported that their physician never diagnosed it; and 10.7% believed their physician knew about their addiction and did nothing about it (National Center on Substance Abuse 2000). Only approximately 20% of primary care physicians considered themselves “very prepared to identify alcohol or drug dependence.” In comparison, approximately 80% reported feeling very comfortable diagnosing hypertension and diabetes. Even though unhealthy alcohol use and follow-up are part of the Healthcare Effectiveness Data and Information Set (HEDIS) 2018 measures (National Committee for Quality Assurance 2018), alcohol and drug screening is done in only an estimated 14–43% of visits by family physicians or pediatricians (Millstein and Marcell 2003). Universal screening for risky alcohol use and other substance use, including cannabis and prescription drug misuse, is still not standard practice, despite a grade B recommendation from the US Preventive Services Task Force on alcohol screening and counseling (U.S. Preventive Services Task Force 2013) and a grade I recommendation for illicit drug use screening (U.S. Preventive Services Task Force 2014), which includes the non-medical use of prescription drugs.

In the special situation where the patient is a physician, honest and open substance use disorders screening may also be hampered by stigma associated with this condition in the medical profession. Substance use disorders pose a significant public health issue, and when occurring in a physician, there are added professional concerns. SUD screening is warranted in physicians with any active disease who would benefit from appropriate and confidential treatment.

In addition to practical limitations and cultural stigma of SUD in physicians, the treating physician’s practice patterns can be influenced by personal beliefs and values, a phenom-

enon observed in other healthcare scenarios. If health experts, including physicians, engage in drinking behaviors similar to the populations they serve, this cognitive dissonance could contribute to a reduced sense of necessity to perform SUD screening and discuss the health risks of alcohol use. For example, only 13% of UK participants responded without prompting that there is a link between alcohol and cancer (Burki 2016), even though the association has been documented as early as 1903 (Newsholme 1903). With prompting, 50% of surveyed participants identified a link between alcohol and cancer (Burki 2016). In fact, women who drink between 70 and 140 g of alcohol per week (or approximately 7–14 drinks per week) have a 5% increase in risk of all cancers and a 13% increase in risk of breast cancer, compared with those drinking less than 20 g per week (or approximately two drinks per week). In addition to heightened cancer risks with higher alcohol use, suicide risk is significantly increased among people with mood disorders or schizophrenia and comorbid alcohol or substance use disorders.

As a profession, the American Board of Medical Specialties has only recently, in 2016, recognized addiction medicine as a board-certifiable clinical subspecialty. This represents a significant formal acknowledgment by the medical profession that addiction medicine is an important clinical and public health domain. Additionally, this presents greater opportunities to address training gaps and potentially complex cognitive scenarios in SUD screening and discussion.

Physician Suicide and Substance Use Disorders

Alcohol use and suicide have been extensively studied in the general population, with a strong association found between the two, especially as they relate to aggression and impulsivity (Sher 2006; Brady 2006). This association is especially concerning for physicians, as the logical conclusion might be that because physicians have higher rates of substance use disorders, particularly alcohol use, then they might also experience proportionally

higher rates of suicide, although this has yet to be confirmed in observational studies of physician suicides. One paper published in 1986 performed a psychological autopsy, reconstructing risk factors for suicide as an investigative process in the setting of deaths due to suicide among US physicians, and concluded that mood and substance use disorders were among the key risk factors (Council on Scientific Affairs 1987). In McLellan et al., of 904 physicians enrolled in 16 state physician health programs, all had substance use disorders, and 22 had died as a result of failing to complete a monitoring contract; 6 of these deaths were due to suicide (McLellan et al. 2008).

Little is known regarding how substance use disorders contribute to physicians' plans, attempts, or death by suicide and whether substance use disorders are a major contributor at the time of death. An individual case study of a physician suicide describes 1 physician's career-long SUD patterns (Johnston 1979), and another case series describes the outcomes of 36 British physicians with alcoholism, which included 5 deaths by suicide (Murray 1976). However, such cases are not nearly enough to provide sufficient details of the complex relationship between SUD and suicide among physicians.

Individual physicians, advocates, and members of the academic community are calling attention to physician suicide independent of commonly published academic literature (Wible 2016; Myers 2017). Stigma associated with substance use disorders, especially among physicians, interferes with access to timely, non-judgmental, confidential, and rehabilitative treatment. Furthermore, reliable study of physician suicide events is hampered by numerous factors, including stigma, lack of standardized postvention processes (interventions conducted after a suicide largely supporting the bereaved family, friends, peers, and professionals), and lack of investigation as a public health imperative.

With further investigation and collection of supporting data, understanding the link between physician SUD and suicide would provide insights into impactful opportunities for intervention. Addiction is a treatable condition, and if physician suicide can be prevented with timely and effective addiction treatment, then further program funding and development could be justified in support of such effective interventions.

Helping the Addicted Physician: Fostering a Culture of Wellness

A culture of wellness is defined as “a set of normative values, attitudes, and behaviors that promote self-care, personal and professional growth, and compassion for colleagues, patients, and self” (Bohman et al. 2017). To fully embrace the concept of compassion for colleagues, the medical community, especially policy-making or professional organizations, as well as healthcare organizations who employ physicians, should foster a culture that destigmatizes addiction and mental health disorders, encourages help-seeking behaviors in times of acute stress, and enables the development of healthy and sustainable behaviors (see Chap. 2).

Fully embracing and developing a culture of wellness requires a multi-faceted approach that combines individual-level interventions with those implemented at the level of an institution or healthcare organization in education and policy reform. For example, an organization could implement peer support programs to support physicians and trainees after critical or traumatic events. Or, a residency program could implement a compassionate postvention program in the wake of a colleague’s suicide (Center et al. 2003; American Foundation for Suicide Prevention 2018). Policymaking could include prohibiting degrading working conditions, such as excessive duty hours for residents, improving state licensing procedures to reduce the stigma of mental health conditions and substance use disorders, and increasing support for the compassionate, non-punitive rehabilitation and re-integration of physicians into the workforce.

Such reforms would create a cultural context that enables physicians-in-training and physicians in practice to readily seek guidance and treatment in any difficult circumstance, including those concerning substance use. Additionally, in earlier stages of the physician career pipeline, an emphasis on a healthy relationship with substances such as alcohol or prescription drugs should involve de-normalizing routine reliance on substances as stress reliever and avoiding a binge use pattern.

The hidden curriculum, the implicit positive and negative messages conveyed to learners through medical educators' actions and speech (Lehmann et al. 2018), may exacerbate stigmatization of substance use disorders. The manner in which we either normalize substance use or judge the difficulty of treating patients with addiction, for instance, may inadvertently influence whether a trainee or practicing physician feels safe from retribution or punishment when considering voluntary self-disclosure or even feeling willing to seek help. For example, if self-care is implicitly perceived as weakness, then the risk for burnout in a vulnerable physician may be high. An environment that is too rigid to allow for self-care, such as those where an organization's infrastructure is built upon a false culture of strength and peak performance, may even create sources of difficult-to-navigate stressors.

To reveal the hidden curriculum of any training institution, the American College of Physicians recommends the following (Lehmann et al. 2018): (1) allowing for time dedicated to guided reflection, (2) encouraging explicit conversations about uncomfortable or emotionally challenging experiences, and (3) using challenges as a way to continuously improve systems and culture. A culture of compassion and reflection that is integrated into the character and culture of an institution is essential to foster the necessary environment that would optimally support physician colleagues with a substance use disorder. Physicians would be proactively and positively encouraged to seek treatment and long-term counseling, as well as gradual re-integration into the workforce. Suspension or expulsion from training or practice (Baldwin et al. 1991) seems to be the antithesis of a compassionate culture of wellness.

Case Illustration 10.2

A former dean of the University of Southern California's Keck School of Medicine, who held that position for over a decade, resigned from the position 3 weeks after a female companion overdosed in March 2016. Investigative reporting by the *Los Angeles Times* revealed videos that suggested a long-standing pattern of behaviors consistent

with substance abuse and addiction (Pringle et al. 2017). It was reported that in one video, for example, he is shown, dressed in a tuxedo, with an orange pill on his tongue and says “Thought I’d take an ecstasy before the ball.” He then swallows the pill.

Discussion Questions:

- Was this physician impaired?
- What is the responsibility of peers and colleagues of the addicted physician? Professional organizations to which the physician belongs? A primary care provider for the addicted physician?
- What is the responsibility, if any, of the employer in this situation in facilitating rehabilitation? If none, why?
- Are SUD-associated behaviors the result of bad judgment?
- Should physicians with SUD be punished for their behavior? What role does termination as a form of punishment play?
- In resigning a position of authority after a sentinel event, does this indicate some level of individual recognition of the severity of SUD?
- How does media coverage contribute to a physician’s public humiliation? Is such coverage warranted in response to such behaviors?

A culture of wellness regarding physician substance use disorders also must include educating the general public and policymakers regarding the need for SUD treatment among physicians. Otherwise, those outside the medical community may falsely continue to adopt policies that shame or criminalize physicians with SUD or otherwise discriminate against them for their condition. It is commonly forgotten that physicians are patients too. And while the safety and protection of their patients are also a priority, especially when physicians’ licenses or credentials may be under surveillance during SUD

treatment and rehabilitation, such protection should not also bluntly disregard the wellbeing, privacy, and life of the individual physician.

Prevention and Treatment for Physicians at All Stages

Early intervention is the most effective method to prevent the development of progressive substance use disorders among physicians throughout their careers. In medical school and residency, early intervention starts with de-normalizing alcohol as a tool to manage stress, mood, and sleep and as a socially acceptable and frequent activity for cultural assimilation into the medical trainee community. Health behavior change typically begins with awareness and pre-contemplation of changing behavior; however, failing to identify abnormal patterns of alcohol and substance usage early in medical training is problematic as a public health issue in the medical community. It seems that much of the experimentation and habituation to alcohol and cannabis use for medical students starts even earlier than medical school or undergraduate studies, and that initiation begins as early as high school (Baldwin et al. 1991); if this is the case for vulnerable matriculating medical students, then orientation provides one of the best times to educate an incoming class on the concepts of risky substance use along with reminders of self-care.

Comorbid conditions in physicians, including thought and mood disorders, post-traumatic stress disorder, and pain syndromes, can contribute to the development of addiction as well, similar to the general population (Earley 2014). In 2009, the University of California, San Diego School of Medicine, launched a Suicide Prevention and Depression Awareness Program that sought to broadly reach all levels of trainees and faculty, including pharmacy students, to anonymously and confidentially screen, assess, refer, and later educate on the topic of depression and suicide prevention (Moutier et al. 2012). Of the 374 respondents, 67% met criteria for moderate

risk and 27% met criteria for high risk of suicide. Although the screening included a survey of drug and alcohol use, it is unclear from this 2009 publication how much emphasis or association was given to alcohol and drug use contributing to suicidal risk. What we can glean from this initiative is that it may be the first of its kind to perform such an intervention regarding physician suicide and similar programs could be tailored for substance use disorders.

A culture of wellness that is willing to recognize these vulnerabilities can potentially develop more compassionate assistance programs for physicians to seek guidance or referrals, accommodating the unique needs and traits of physicians with SUD. In undergraduate medical education, additional opportunities exist to incorporate educational activities for medical students about SUD and its physiological, clinical, and social consequences, as well as highlight uniquely vulnerable populations and associated ethical and legal issues, such as SUD among physicians. Such community introspection, folded into standard medical education, could provide an integrated educational and cultural framework for further prevention and management of physician SUD throughout the medical professional life cycle. As an example, basic sciences education on SUD could be emphasized during the first 2 years of medical school in core neurobiology and related coursework. Practical aspects of healthy substance use behaviors could be included as part of a student life handbook and orientation, which is a standard in college orientations as well. Subsequent curricula on student wellbeing can later reinforce concepts and incorporate clinical knowledge, behavior, and skills as part of psychiatry and primary care clerkships.

Finding Help: Physician Health Programs

The first state physician health program was established in New Jersey in 1982, responding to an initiative by the American Medical Association in 1973 to address specialty

care and supervision over the addicted physician in need of help and to protect the public (Candilis 2016). Referrals to a state physician health program (PHP) comprised of self-referrals, clinical colleagues, state licensing boards, hospital medical staff, treatment providers, medical schools, law enforcement, family members, attorneys, and other PHPs. For example, physicians may voluntarily seek treatment if they find that their substance use has resulted negative consequences, and compensatory behaviors can no longer hide such consequences. In approximately 14% of cases, hospitals have well being committees that will refer to a state's PHP. Since the first New Jersey PHP established over 35 years ago, every state but four (California, Delaware, Nebraska, and Wisconsin) as of 2018 had some form of PHP that can refer a physician to treatment and be the clearing-house to monitor treatment adherence. The intention is that the PHP can serve as a neutral third party that evaluates and determines the readiness of a physician to safely re-integrate back into the clinical setting. The primary aim of the PHP is to ensure that the physician is not impaired and can return to work without compromising patient safety. PHPs do not themselves provide formal addiction treatment but act instead like case managers and monitors.

With that said, PHPs enter into a signed contract with a participating impaired physician and closely follow that physician from treatment entry at a specialty treatment site to treatment completion. Then, the PHP continues drug monitoring and relapse prevention evaluations for an average of 5 years before PHP oversight ends. Most PHPs provide general addiction education programs: they mandate some form of mutual help such as Alcoholics Anonymous, Narcotics Anonymous, or Caduceus Meetings; document drug monitoring results (urine toxicology, breathalyzer, hair follicle, etc.); document workplace surveillance; coordinate care with treatment facilities; and communicate with licensing boards, hospitals, and malpractice carriers.

PHPs can improve physician outcomes and successfully facilitate rehabilitation toward re-integration into the workforce. In a study by McLellan et al., of the 647 physicians from

16 PHPs who were monitored for 5 years, 81% had negative urine toxicology results throughout their monitoring, and 95% of the 515 who completed their monitoring contract had returned to either licensed clinical or non-clinical work (McLellan et al. 2008). This study found that PHPs can provide a safe, confidential, and effective role in helping rehabilitate addicted physicians while ensuring patient safety. However, this was a limited study that is not indicative of all national programs, as these programs are not standardized, and there is a paucity of evidence to describe which PHP monitoring and treatment components are effective. Such data would support the development of standardized, evidence-based program criteria. However, as it stands, PHPs are already unique in that their outcomes are vastly better than the substance use treatment provided to the general public, with some reported abstinence rates of 78% over 11 years (DuPont et al. 2009).

Physicians have much to lose in undergoing treatment and rehabilitation, and are therefore often highly adherent, driven by nature to perform well in an effort to regain work status or licensing. Therefore, it is unclear if physicians do better in any treatment modality, whether it is PHP monitoring or addiction treatment as usual, because stakes are higher.

As a medical community, it is imperative that we promote non-punitive, confidential, and nationally standardized PHPs where referral is robust and physicians can be assured that treatment is accessible long before patient harm and other similar consequences may force a physician to lose their license and career.

Key Points to Remember

1. A foundational understanding of the neurobiology of addiction as a core component of medical knowledge and clinical skills is necessary for physicians-in-training and practicing physicians to approach SUD as a pathophysiology, rather than as solely an error of poor judgment. Currently, there may be a fleeting acceptance

that addiction has a basis in a physiologic dysfunction, but there is still an overall lack of understanding and embrace in both personal practice and clinical practice with patients on how addiction affects us.

2. Knowledge of the diagnostic criteria for substance use disorder, which lies on a spectrum of disease from mild to severe, is important, as there are many junctures in which intervention may stave off worsening development of the disorder.
3. SUD is prevalent among physicians, who are not immune and may in fact be particularly vulnerable to addiction. Known prevalence may actually underestimate reality, but knowing true prevalence may keep the medical community vigilant in addressing the problem of SUD among physicians. However, we cannot know true prevalence until the risk for punitive action against physicians is removed, so that physicians can seek addiction treatment without stigma or fear of career-breaking consequences.
4. Physicians are uniquely vulnerable and at risk for SUD, and a thorough understanding of these risks and considerations would prepare each physician, as a treating physician or as teachers and role models for medical students, to be able to detect triggers for development of SUD. Physicians-in-training, including medical students and residents, as well as practicing physicians should have access to a safe haven to discuss SUD concerns.
5. Knowledge of the treatment and resources available are critical: cognitive behavioral, non-pharmacologic and medication assisted therapies to ameliorate withdrawal syndromes and facilitate relapse prevention should be taught and made accessible to physicians and the population at large.
6. Physician Health Programs should exist in all states as a confidential, non-punitive, and if possible standardized with an emphasis on healthy re-integration of the physician back into the work force.

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