Substance use disorders in physicians: Assessment and treatment

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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 assessment, treatment, and oversight of physicians impaired by SUDs. The epidemiology, clinical manifestations, identification, and engagement of physicians impaired by SUDs are discussed separately. Prescription drug misuse and continuing care for addiction are also discussed separately. The epidemiology, pathogenesis, clinical manifestations, assessment, diagnosis, and treatment of specific SUDs are also discussed separately:

- (See "Substance use disorders in physicians: Epidemiology, clinical manifestations, identification, and engagement".)
- (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" and "Stimulant use disorder: Psychosocial management".)
- (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".)

OVERVIEW

The management of physicians with substance use disorder (SUD) can be conceptualized as three categories of activity: regulation, coordination/monitoring, and assessment/treatment.

Physician health programs — In the United States and other countries, physician health programs (PHP) monitor the care, recovery, and return to work of physicians with potentially impairing conditions, such as SUDs. [3-12,20-25]. PHPs also provide coordination and monitoring of physicians impaired by general medical conditions, behavioral problems, cognitive decline, and psychiatric disorders other than SUDs. Nearly all of the data on treatment and outcomes for physicians with SUD that have been published in English-language medical journals come from PHPs or similar programs in the United States, Australia, and Canada. PHPs

typically do not directly treat these physicians, but are often involved in each stage of the physicians' recovery, including (see 'Treatment' below):

- Providing guidance on how to make a referral for evaluation to a physician's colleagues when substance-related impairment and/or SUD is suspected. (See "Substance use disorders in physicians: Epidemiology, clinical manifestations, identification, and engagement", section on 'Responsibilities of colleagues'.)
- Helping a physician who is willing to accept treatment to find an appropriate treatment team. (See 'Initial assessment' below and 'Treatment' below.)
- Helping colleagues, family members, and others organize an intervention for an impaired physician who refuses to acknowledge that they have a problem. (See "Substance use disorders in physicians: Epidemiology, clinical manifestations, identification, and engagement", section on 'Intervention'.)
- Serving as an intermediary between the physician and the state medical board. (See 'Regulation' below.)
- Monitoring the course of the physician's assessment and treatment, as well as their subsequent functioning. (See 'Coordination and monitoring' below.)
- Determining a physician's readiness to return to practice safely and coordinating and monitoring their transition back to work. (See 'Return to work' below and 'Ongoing monitoring' below.)

Other health professionals — PHPs in some states also oversee care for other health care professionals, such as nurses, pharmacists, veterinarians, dentists, podiatrists, and physician assistants. Some states have separate programs for different types of clinicians.

REGULATION

When a physician has a potentially impairing condition, regulatory agencies or their proxies determine whether to change the status of the physician's license to practice medicine (eg, whether the license is revoked or suspended, whether and under what terms the physician can return to work, and whether the physician's status is publicly disclosed).

Regulatory agencies in some countries and in some states in the United States rely on recommendations from the physician's substance use disorder (SUD) treatment team or

physician health program (PHP) when deciding whether to impose sanctions, and which would be most appropriate.

Apart from these consultative relationships, most PHPs in the United States operate independently from state medical boards. This allows the PHP to serve as a confidential buffer between the state board and the physician. PHPs tend to consider **severe** sanctions (eg, permanent license revocation) as counterproductive, because the threat of such sanctions may discourage physicians from reporting a colleague or from accepting help for themselves [26]. In some states in the United States (eg, Maryland), separate programs exist to provide alternative processes [27], including both:

- A voluntary, confidential PHP that encourages help-seeking
- A board-affiliated program for physicians more resistant to intervention who have been referred for disciplinary action against their license

Sanctions are generally utilized to protect patients from exposure to an impaired physician after other options have been exhausted. PHPs or treating clinicians sometimes use the prospect of such sanctions as "leverage" (ie, to motivate a recalcitrant physician to participate in needed SUD treatment). Research has suggested that retaining one's medical license can be an effective component of contingency management to encourage sustained abstinence among physicians with SUDs [28]. Though concerns have been raised regarding the ethics of this practice and the potential for conflicts of interest between PHPs and evaluation/treatment programs [29], others have noted that medical licensure exists specifically to support the "social contract" that requires protecting patients from the possibility of harm due to physician impairment [30]. Most physicians who are involuntarily referred to PHPs generally have positive clinical outcomes [31] and express satisfaction with their participation in the PHP [32].

COORDINATION AND MONITORING

Physician health program — Physician health program (PHP) care coordination may include contact with colleagues of the physician who expressed concern about a potential substance use disorder (SUD), referral of the physician to qualified addiction specialists for assessment and treatment, acting as an intermediary between the physician and the state medical board, advocating on behalf of physicians who adhere to their monitoring agreements, and working with the physician's employer, colleagues, and/or staff to facilitate the physician's return to work.

PHP monitoring of the physician's behavior is ongoing during and after treatment, and continues following the physician's return to work. During treatment it involves regular contact with treating clinicians and review of their written reports. Contact with the physician's employer, colleagues, and/or staff occurs before and after the physician's return to work. Monitoring of the physician may include phone/e-mail/teleconferencing contacts, attendance at a weekly or monthly monitoring meeting, reports from the physician's health care providers (eg, therapist, primary care provider, outpatient addiction specialist), and/or a workplace practice monitor who observes the physician and provides regular reports regarding their functioning on the job.

Routine random toxicology tests are conducted to verify the physician's abstinence from alcohol and other mood-altering substances. Urine testing typically includes an expanded "health care specific" panel and initially occurs about weekly. Frequency of testing typically decreases when good results have been reliably attained. Random toxicological testing may also include blood (PEth), hair/nails, saliva, and/or video-monitored breath testing to verify the physician's abstinence. This is an evolving science/technology. Recent research has suggested that PEth may be the most sensitive biomarker for documenting abstinence from alcohol among physicians in recovery from alcohol use disorder [33,34].

Monitoring agreements — Physicians participating in a PHP are typically asked to enter into a formal monitoring agreement, which outlines the expectations of the physician and related contingencies. PHP monitoring agreements for physicians with moderate to severe SUD are typically about five years in duration [13]. The components include behavioral restrictions and documented participation in recovery supports in return for advocacy during their pathway to recovery and return to medical practice. Specific components of such an agreement may include:

- Withdrawal from clinical practice until they are deemed safe to return to practice.
- Avoidance of all mood-altering substances (including alcohol and over-the-counter medications such as sleep aids and antihistamines) and addictive behaviors (eg, gambling) that may pathologically stimulate the reward areas of the brain.
- Participation in adequate and appropriate SUD treatment, as determined by the professional evaluator, treatment team, and the PHP. (See 'Treatment' below.)
- Participation in other mental health care (eg, psychiatric medication management and/or psychotherapy) as indicated. (See 'Treatment' below.)

- Participation in weekly or monthly group sessions with other PHP participants, led by a facilitator who reports back to the PHP.
- Random drug testing. (See 'Coordination and monitoring' above.)
- Regular contact with the PHP to monitor the physician's behavior. (See 'Coordination and monitoring' above.)
- Demonstration of factors associated with readiness to return to practice safely. (See 'Return to work' below.)

The monitoring agreement between a physician and PHP is viewed as a contract and provides the basis for the PHP's subsequent actions. As an example, the physician's failure to attend the weekly group meeting would be regarded as a violation of the agreement, and could trigger immediate extra toxicology testing. Serious violations (eg, positive or missed toxicology tests, use of unapproved narcotic medication) would likely warrant re-evaluation by an addiction specialist to determine whether further formal treatment is needed.

INITIAL ASSESSMENT

The physician with a substance use disorder (SUD) is optimally evaluated and treated by an addiction specialty team, composed of an addiction medicine specialist, psychiatrist or psychologist, nurse, and/or addiction counselor [35]. This team needs to be adept at assessing for SUDs and co-occurring medical and/or psychiatric conditions, and additionally cognizant of medical practices, licensure issues, and physician work environments.

Clinicians who have had a collegial relationship or friendship with the physician-patient should not participate in the evaluation or treatment of the physician with a SUD. This may require that clinical care be performed outside of the physician's own medical community to protect the patient's confidentiality and to avoid issues of transference [36] or enabling that could cloud the judgment of peers and create professional conflicts.

The evaluation should include a comprehensive psychiatric assessment, with additional emphasis on addiction and workplace issues. A framework for assessment of potentially impaired persons in safety-sensitive occupations generally follows the American Society of Addiction Medicine Six Dimensions of Multidimensional Assessment [37], including:

- Acute intoxication and/or withdrawal potential. (See "Opioid withdrawal: Medically supervised withdrawal during treatment for opioid use disorder" and "Alcohol withdrawal: Epidemiology, clinical manifestations, course, assessment, and diagnosis".)

- Co-occurring medical conditions and complications.
- Co-occurring mental disorders and complications. (See "Substance use disorders in physicians: Epidemiology, clinical manifestations, identification, and engagement", section on 'Comorbidities'.)
- Suicidality – A report by the General Medical Council in the United Kingdom suggests that physicians may be at increased risk for suicide while undergoing investigation of their fitness-to-practice medicine [38]. (See "Suicidal ideation and behavior in adults", section on 'Patient evaluation'.)
- Readiness to change. Physician's motivation to recover can increase significantly across the course of treatment. (See "Substance use disorders: Motivational interviewing", section on 'Readiness to change'.)
- Relapse, continued use, or continued problem potential.
- Recovery environment.

The physical examination in physicians with SUDs is most often normal, although there may be evidence of intoxication or withdrawal.

Neuropsychological testing is helpful in the assessment of physicians with SUDs, particularly when there are concerns about cognitive impairment [39]. Neuropsychological testing can determine the type and severity of neurologic damage. As an example, given the safety-sensitive nature of medical practice and specific specialties (eg, anesthesiology, surgery), "minor" deficits in processing speed and fine motor coordination may adversely impact the physician's ability to practice with reasonable skill and safety. Results can also be used in confronting denial and determining fitness for return to practice.

Comprehensive toxicology testing is an important part of the assessment when used to validate the physician-patient's history of substance use and to confront denial. This typically includes urine tests, blood tests (eg, PEth), and may include hair and/or nail testing. (See "Substance use disorders in physicians: Epidemiology, clinical manifestations, identification, and engagement", section on 'Screening for drug use'.)

Workplace issues that should be addressed in the assessment include [37]:

- Risk to patients
- Ability to manage occupational triggers
- Work environment factors, such as access to prescribed drugs

- Adequacy of work supervision
- Adequacy of support network

After the physician has signed a release allowing communication, the assessment should include collateral information from supervisors, colleagues, and staff in the physician's workplace about their behavior, functioning, and appearance.

Examination of the physician's medical practice records may show inadequate or inaccurate documentation. However, poor record keeping is rarely the critical piece of information that confirms an impairment issue. In the case of prescription drug misuse by a physician, a good starting point is to review a sample of medical records of patients to whom they have prescribed controlled substances. Findings of interest would include alterations of the medical record related to these prescriptions, inadequate documentation of clinical indications for the prescriptions, excessively high doses, or prescribing controlled substances for office personnel or family members.

TREATMENT

General considerations — The basic components of substance use disorder (SUD) treatment are the same for physicians and nonphysicians. Treatment for SUDs typically consists of medically supervised withdrawal (if needed) followed by one or more of the following modalities:

- Individual and group addiction counseling
- Peer support
- Medication
- Psychotherapy

The number, intensity, and duration of these modalities vary based on the severity of the disorder and other clinical factors. These SUD treatment issues are discussed separately. (See "Substance use disorders: Determining appropriate level of care for treatment" and "Continuing care for addiction: Components and efficacy" and "Continuing care for addiction: Implementation".)

Other aspects of SUD treatment are specific to individual SUDs (ie, categories of substances), which are discussed separately.

- (See "Alcohol use disorder: Psychosocial management".)

- (See "Stimulant use disorder: Treatment overview" and "Stimulant use disorder: Psychosocial management".)
- (See "Opioid use disorder: Pharmacologic management".)
- (See "Benzodiazepine use disorder".)
- (See "Cannabis use disorder: Clinical features, screening, diagnosis, and treatment".)
- (See "Alcohol use disorder: Pharmacologic management".)

Physician-specific — Owing to the safety-sensitive nature of their work and the public safety interest in preventing return-to-use or relapse, published data suggest that physicians treated for a SUD often receive longer, more intensive treatment (ie, residential care) than nonphysicians. A study of 802 physicians with SUD participating in 1 of 16 physician health programs (PHP) found that a majority of physicians received residential treatment, with a median length of stay of 12 weeks [31]. The overall period of acute treatment for physicians is typically three to six months.

Factors favoring more intensive levels of care among physicians include:

- High levels of physician denial of a substance-related problems
- Risks to patient safety from physician impairment
- Need to remove the physician from their medical community to ensure objective and/or confidential treatment

An additional factor contributing to the discrepancy in intensity and length of treatment for physicians compared with nonphysicians in countries with PHPs is that PHPs do not consider insurance constraints an acceptable rationale for limiting treatment. Insurers' refusal to pay for higher levels of SUD care often creates an impediment to receiving recommended treatments for the general population.

Some physicians with a mild SUD may not need treatment as intensive as that described in the previous section. Such physicians generally have levels of substance use that:

- Do not meet criteria for a moderate to severe SUD
- Are not accompanied by high denial
- Do not directly threaten the physician's clinical judgment or patient care

An example is a physician with an isolated incidence of driving under the influence after a weekend party and without other risk factors. Appropriate treatment could be outpatient motivational enhancement and brief intervention, with a sustained period of monitoring via random toxicology testing to ensure the problem is not more severe than initially believed. (See "Substance use disorders: Motivational interviewing", section on 'Motivational enhancement

therapy' and "Brief intervention for unhealthy alcohol and other drug use: Efficacy, adverse effects, and administration".)

Some components of SUD treatment are customized to physicians in specialized treatment programs. As examples:

- Participation in a weekly group of physicians in treatment for SUD, led by an addictions counselor – This exposure to other recovering physicians may reduce shame and promote self-disclosure. Physicians may feel more confident of confidentiality in a group of professional peers [40]. They may be less likely to adopt a professional role in the treatment setting. As an example, a study of 85 physicians who participated in such groups, either by their own volition (33 percent) or as a component of their PHP monitoring contract, found that most (72 percent) had a positive experience [41]. The role of the group facilitator was identified as particularly important to the experience.

- Mentoring and support through meeting with physicians who have maintained long-term sobriety and returned to work. They can provide encouragement, hope, and a model of essential behaviors and attitudes.

- Training in drug refusal skills may not be limited to social situations, but might include scenarios such as a discussion with colleagues about managing their access to controlled medications at work.

Return to work — For patients in PHPs, conditions for a physician's return to medical practice are typically spelled out in the monitoring agreement between the physician and the PHP. Most state regulations specify only that the physician's return to work should be based on their ability to practice medicine with "reasonable skill and safety," leaving the judgment in individual cases up to the treatment team and the PHP. The Federation of State Physician Health Programs has issued guidelines for recommended monitoring agreement elements and return-to-work requirements [42].

Determination of the physician's readiness to return to practice is generally based on assessment of their:

- Acceptance of the SUD diagnosis
- Understanding of addiction as a chronic disease requiring lifelong attention
- Completion of SUD treatment, with support of the treatment team to resume work
- Documentation of sustained abstinence (typically through random toxicology testing)
- Treatment and status of co-occurring psychiatric disorders
- Judgment and cognition (including results of neuropsychological testing)

- The physician's ability to manage stressors and triggers
- Support network, including family support
- Estimated risk of return-to-use or relapse
- Motivation to follow an established continuing care plan

Occupational factors considered in assessing the physician's readiness to return to work generally include:

- Legal/licensure requirements have been satisfied
- Workplace monitor/supervisor has been identified and accepts responsibilities
- Necessary workplace modifications or practice restrictions have been agreed upon

Returning to work is often a staged process. Restrictions may be placed on the physician's practice, at least initially, to protect the physician and patients. For example, the physician may have limits placed on their work hours, tasks, shift time, or clinical settings. Specifically, the physician may be prohibited from the operating room, not permitted to take overnight shifts (when fewer staff are present to observe behavior), or face restricted access to controlled medications. Many physicians are required to have a workplace "monitor" who is in contact with the PHP, with a valid, signed release for communication in effect at all times. The number of settings at which a physician may practice might also be limited to provide easier monitoring and better accountability. There may be restrictions placed on the physician's medical license by a regulatory agency or medical board that must be satisfied prior to their return to work.

Preparing for return to work includes developing an accountability system for dispensing and administering controlled medications to the physician's patients. This will likely involve another person overseeing or, ideally, handling these processes. It may include:

- Not being the person in the practice who checks a patient's medications for compliance.
- Keeping track of prescriptions written for controlled substances.
- Using double-locked systems, if controlled substances must be kept on premises.
- Periodic checking of wastage from injectable opioids to assure all vials and their contents are properly accounted for and have not been diverted.

Ongoing monitoring — Ongoing monitoring after treatment and return to work is believed to be one of the factors leading to successful outcomes for physicians recovering from an SUD [31,43]. The agreement between the physician and the PHP typically spells out the elements of monitoring. (See 'Monitoring agreements' above.)

Monitoring is accompanied by swift and meaningful intervention if the contract is violated. Interventions are proportional to the level of noncompliance, which may range from missing group to use of an unapproved substance:

- Verbal intervention and warning with motivational strategies
- Increased frequency/intensity of toxicology testing
- Immediate withdrawal from practice and clinical reevaluation

OUTCOMES OF PHYSICIAN HEALTH PROGRAMS

Overall — Available data on outcomes of physicians treated for a substance use disorder (SUD) are largely limited to United States physicians receiving SUD treatment under the oversight, coordination, and monitoring of physician health programs (PHP). A meta-analysis was conducted on 29 outcome studies of health care professionals (mainly physicians) monitored by a PHP, including 26 United States studies, and 1 study each from Canada, Australia, and Spain. Results from 3027 total participants demonstrated pooled success rates of 72 percent for abstinence (95% CI 63 to 80 percent), with better outcomes in studies where abstinence monitoring was initiated **after** treatment discharge (ie, 79 percent). When the outcome was work retention (n = 1728), the pooled success rate was 77 percent (95% CI 61 to 90 percent) [44].

Retrospective studies of PHPs in the United States have found that between 75 and 90 percent of physicians and other health care professionals completed SUD treatment, returned to work, and remained working at five-year follow-up [19,31,45,46]. As is common in SUD treatment outcome studies, results from the PHP studies may underestimate the relapse rate of physicians by omitting patients lost to follow-up and depending on random toxicology testing as the primary indicator of abstinence [47]. In general, however, the prognosis for physicians treated for an SUD is better than for the general population [16,19,31,46-50].

As examples, a five-year retrospective study examined medical records of 904 physicians with an SUD who were consecutively admitted to one of 16 United States PHPs between 1995 and 2001 [31]. Subjects underwent SUD treatment followed by regular urine toxicology tests. One hundred and two physicians were lost to follow-up and excluded from the analyses. Of 802 physicians, 81 percent completed SUD treatment and resumed practice. At five-year follow-up:

- 79 percent were licensed and working
- 16 percent experienced a post-treatment urine test positive for drugs or alcohol
- 11 percent had their licenses revoked
- 6 physicians committed suicide

A study of 100 United States physicians participating in the Georgia PHP demonstrated that 77 percent maintained abstinence for the duration of their five-year monitoring contract, as documented by urine toxicology testing [16]. Of the 22 documented relapses, 18 physicians (82 percent) returned to treatment. Only one of the 22 displayed a pattern of chronic relapse, and 1 physician was lost to follow-up [16].

Limited data are available on the treatment of physicians with PHP-type coordination in countries outside the United States; these studies have reported findings similar to United States results:

- A retrospective study reported results from the first three years of a doctors health program in Australia that provided aftercare, case management, and monitoring [16]. Of 58 physicians or medical students with an active SUD who entered the program, 79.3 percent achieved sustained abstinence and 67.2 percent returned to work.

- A study assessing outcomes of 100 consecutively-admitted doctors to the Ontario Physicians Health Programme in Canada reported that 71 percent of physicians completed the program, including five years of monitoring post-treatment, without relapse [23]. An additional 14 percent eventually completed the program despite one or more return-to-use episodes.

Research suggests that physician recovery is sustained long term following successful completion of PHP monitoring. A study utilized anonymous survey responses from physicians who had completed monitoring with one of eight PHPs at least five years prior to the study [43]. Of the 343 physicians deemed eligible, 143 (42 percent) were successfully contacted and 133 (93 percent) agreed to participate. Results indicated that 97 percent of respondents considered themselves to be “in recovery.” They noted participation in the PHP, signing the monitoring agreement, completing formal SUD treatment, and random toxicology testing as the most helpful factors in their recovery.

Anesthesiology — Rates of SUDs, in particular opioid use disorders, are higher among anesthesiologists compared to physicians from other specialties [16,51]. In the largest multi-state study of PHP outcomes by specialty, anesthesiologists had outcomes similar to other physicians, including comparable rates of program completion, successful return to practice, reports of disciplinary action, and death [52].

Anesthesiology residencies — Outcomes of anesthesiology residents identified with evidence of an SUD include significant rates of relapse and mortality, particularly among those who attempted return to an anesthesia residency program following SUD treatment [14,53,54]:

- In a retrospective cohort study of all physicians (44,612) who began training in a United States anesthesiology residency program between 1975 and 2009, 0.86 percent of trainees (384 physicians) had evidence of an SUD [54]. The substance(s) identified during the initial episode for 242 physicians with available data were:

  - Intravenous opioids – 56.6 percent
  - Alcohol – 35.1 percent
  - Marijuana – 21.1 percent
  - Anesthetics/hypnotics – 19.0 percent
  - Cocaine – 12.4 percent

  Among these physicians, 76 percent participated in treatment (median three months); 11 percent died of a cause related to substance use. A relapse rate by 30 years after the initial episode was estimated to be over 40 percent. Over the 15-year study period, the incidence of trainees identified with evidence of an SUD increased, and relapse rates did not change.

- In a survey of all United States anesthesiology training programs, 111 programs (a 66 percent response rate) identified 230 residents with evidence of an SUD between 1991 to 2001 [14]. Eighty percent of the programs reported identifying at least one resident with the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) opioid dependence; 19 percent of programs had at least one pre-treatment fatality among them (an overdose or suicide). Among the 153 residents who attempted to return to anesthesia following SUD treatment, 40 percent ultimately switched to another residency; nine residents died during a return-to-use episode.

- A survey of 106 anesthesiology department chairs in Australia and New Zealand identified 61 cases of anesthesiologists who were treated for an SUD [55]. Incidence was higher among trainees than consultants (1.5 per 1000 trainee years versus 0.7 per 1000 consultant years). Thirty physicians (68 percent) returned to work in some form. Twenty-four physicians (55 percent) returned to anesthesiology. Four physicians returned to work in an alternative medical field. Two others worked in nonmedical positions. Three of the physicians retired early, and five were no longer licensed. Eight physicians died during the reporting period (three by suicide and five by overdose).

Interventions have been implemented to varying extents across the United States to address factors contributing to the misuse of prescription opioids, in particular, by anesthesiologists. These include anti-diversion policies, mandatory pharmacotherapy with naltrexone, and improved monitoring. More recent data are needed to determine whether these changes are

associated with better outcomes. The proliferation of illicit fentanyl, carfentanil, and other opioids on “the street” may mitigate the benefit of efforts to restrict access to these substances in the workplace.

Risk factors for return-to-use or relapse — Characteristics of physicians and other health care professionals associated with higher rates of return-to-use include:

- Use of potent opioids (including fentanyl, sufentanil, morphine, and meperidine), especially IV opioids [56]
- Co-occurring mental disorders [56]
- Family history of addiction [56,57]
- Use of multiple drugs [58]

Risk factors for return-to-use following SUD treatment in nonphysician samples are described separately.

- (See "Opioid use disorder: Epidemiology, clinical features, health consequences, screening, and assessment", section on 'Risk factors'.)
- (See "Risky drinking and alcohol use disorder: Epidemiology, clinical features, adverse consequences, screening, and assessment", section on 'Risk factors'.)
- (See "Prescription drug misuse: Epidemiology, prevention, identification, and management", section on 'Risk factors'.)

Behaviors and beliefs associated with higher rates of recovery among physicians have been found to be similar to those of nonphysicians:

- Involvement in or strong sense of affiliation with Alcoholics Anonymous [35,36,43,59-61]
- Acceptance of addiction as a disease
- Ability to be honest
- Acceptance of spiritual principles [35]

Physicians are often initially skeptical that addiction is a disease, in many cases due to their lack of familiarity with the concept. Some physicians respond negatively to talk of spiritual principles in twelve step programs, such as Alcoholics Anonymous, possibly due to their medical training. In our experience, these barriers to acceptance of treatment diminish with time in a significant proportion of physicians.

MEDICATION FOR OPIOID USE DISORDER

Physicians with opioid use disorder, frequently anesthesiologists, have unique features influencing the standard approach to medication management for this population [51,56] (see "Substance use disorders in physicians: Epidemiology, clinical manifestations, identification, and engagement", section on 'Clinical specialties' and 'Anesthesiology' above):

- Aerosolized opioids have been found in operating rooms, which may increase anesthesiologists' risk.
- Opioid medications are uniquely accessible to anesthesiologists.
- Individuals with opioid use disorder generally have a higher risk of relapse compared to individuals with other substance use disorders.

Opioid agonist and partial agonist medications, which are first-line treatments for opioid use disorder in the general population, are seldom used when the patient is a physician, for several reasons (see "Opioid use disorder: Pharmacologic management"):

- There have not been adequate studies to determine whether these medications cause cognitive problems that can impair performance [39].
- It is difficult to assess for the presence of a substance use disorder when monitoring patients who are legitimately prescribed opioid agonists.
- High rates of recovery of physicians with opioid use disorder have been achieved through treatment almost entirely without agonist/partial agonist medications [30,62].

However, despite concern that physicians are being denied adequate treatment due to purported PHP bans on use of opioid agonist medications [63], the Federation of State Physician Health Programs position statement recommends that PHPs consider medications for opioid use disorder when clinically appropriate [64].

Naltrexone, an opioid antagonist that lacks the problems associated with opioid agonist medications (ie, potential for misuse, overdose, and/or diversion), is commonly used in safety sensitive occupations including medicine. Evidence suggests that treatment of opioid use disorder with naltrexone is effective when adherence to the medication is assured, eg, with observed administration or long-acting intramuscular injections. (See "Opioid use disorder: Pharmacologic management" and "Opioid use disorder: Pharmacologic management", section on 'Naltrexone: Opioid antagonist'.)

Methodologically limited trials of naltrexone in professionals (largely physicians) with opioid use disorder suggest that naltrexone may be an effective component of treatment for opioid use

disorder in this population:

- A review of medical records of anesthesiologists with an opioid use disorder participating in the Florida physician health program compared the outcomes for 11 physicians who were mandated to take naltrexone (witnessed) with outcomes for 11 physicians who entered the program before the mandate and did not take naltrexone. Opioid relapse was less likely in anesthesiologists taking naltrexone compared to those who did not (9.1 versus 72.7 percent). The naltrexone group was more likely to return to work in anesthesiology (81.8 versus 9.1 percent) [65].

- An uncontrolled trial of 129 business executives and physicians with opioid dependence were treated with oral naltrexone as part of a comprehensive outpatient aftercare program following medically supervised withdrawal [66]. More than 80 percent of participants completed at least six months of treatment without return to opioid use.

- An uncontrolled trial treated 38 health care professionals (nurses, physicians, and pharmacists) with opioid use disorder with long-acting injectable (monthly) naltrexone [67]. Participants experienced reduced opioid craving, low rates of opioid use, and reduced unemployment. Side effects were fairly common, but generally not severe. The majority of participants voluntarily continued the treatment for at least 12 months; 37 percent completing all 24 months of treatment.

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

- **Overview** – The management of physicians with substance use disorder (SUD) can be conceptualized as three categories of activity: regulation, coordination/monitoring, and assessment/treatment. (See 'Overview' above.)

- **Physician health programs (PHP)** – In the United States and other countries, PHPs provide coordination and monitoring of physicians with potentially impairing conditions. PHPs may be involved directly in regulatory activities or serve as an intermediary between the physician and the state medical board. PHPs may refer the physician to a clinical team and/or have input into the physician's assessment and treatment, but generally do not directly provide assessment and treatment. (See 'Physician health programs' above.)

  PHPs in some states in the United States oversee care for other health care professionals (eg, nurses, pharmacists, and veterinarians) in addition to physicians. Other states have separate programs for other types of clinicians.

- **Regulation** – When a physician has a potentially impairing condition, regulatory agencies or their proxies determine whether to change the status of the physician's license to practice medicine (eg, whether the license is revoked or suspended, whether and under what terms the physician can return to work, and whether the physician's status is publicly disclosed). (See 'Regulation' above.)

- **Coordination and monitoring** – PHP care coordination may include contact with colleagues of the physician who expressed concern about a potential SUD and referral of the physician to qualified addiction specialists for assessment and treatment. Additionally, PHP care coordination may act as an intermediary between the physician and the state medical board by advocating on behalf of physicians who adhere to their monitoring agreements, and working with the physician's employer, colleagues, and/or staff to facilitate the physician's return to work. (See 'Physician health program' above.)

  Physicians with an SUD typically enter into a monitoring agreement with the PHP of approximately five years duration, in which the physician agrees to conditions including abstinence, treatment, and extended monitoring in return for a pathway to recovery and eventual return to medical practice. (See 'Monitoring agreements' above.)

- **Assessment** – The physician with an SUD is optimally evaluated by an addiction specialty team, composed of a physician (typically specializing in addiction medicine or addiction psychiatry) with expertise in substance use issues of health care professionals, psychologist, nurse, and addiction counselor. This team needs to be adept at assessing SUDs, and additionally cognizant of medical practices, licensure issues, and physician work environments. (See 'Initial assessment' above.)

- **Treatment** – SUD treatment for physicians, like any patient, consists of addiction counseling, mutual help groups, medication, and/or psychotherapy. Other aspects of treatment may be specific to physicians, such as addressing risks a physician with SUD

may pose to their patients, exposure to other physicians with SUDs (including physicians with long-term sobriety), and learning drug refusal skills aimed at managing their access to controlled medications at work. (See 'Treatment' above.)

- **Outcomes of PHP** – Supervised SUD treatment are generally considered to be exceptionally good, with between 75 and 90 percent of physicians and other health care professionals found to complete SUD treatment, return to work, and remain working at five-year follow-up. Outcomes of physicians treated/monitored in non-PHP models have not been studied. (See 'Outcomes of physician health programs' above.)

  Rates of SUDs, in particular opioid use disorders, are higher among anesthesiologists compared to physicians in other specialties. Anesthesiologists who participate in PHPs appear to have outcomes similar to other physicians. Anesthesia residents with an SUD, however, have been found to have significant rates of relapse and mortality after PHP completion, particularly among those who return to an anesthesia residency program. (See 'Anesthesiology' above.)

- **Return to work** – Factors considered in assessing a physician's readiness to return to practice include completion of treatment for SUD and co-occurring conditions, sustained abstinence, their ability to manage stressors and triggers, and motivation to follow the continuing care plan. Most physicians are required to have a workplace monitor and processes that address the physician's access to medications. (See 'Return to work' above.)

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