Physician impairment is a serious public health issue affecting not only physicians, but also their families, colleagues, and patients. The American Medical Association (AMA) defines physician impairment as “any physical, mental, or behavioral disorder that interferes with the ability to engage safely in professional activities” (1). Experts now define impairment as an enduring condition that if left untreated is not amenable to remission and cure. In terms of functional capacity, impairment renders the physician unable to provide competent medical services, with serious flaws in professional judgment.

Physician impairment is used most often to refer to substance use disorders. The term substance use disorder can be further subdivided into 2 inter-related topics, substance abuse and substance dependence. Substance abuse is defined in terms of adverse social consequences, such as failure to meet family, school, and work-related obligations. It encompasses sub-
stance use in physically dangerous situations (i.e. driving a car), often results in legal problems (i.e. arrests), and also encompasses continued use despite adverse consequences. In contrast, substance dependence, also known as addiction, manifests as physiologic and behavioral problems related to a maladaptive pattern of substance use. The symptoms of dependence (addiction) include tolerance, the need for increasing amounts of the substance to maintain the desired effects; withdrawal symptoms if the substance is abruptly discontinued; preoccupation with the use of the substance; and experiencing “cravings,” or the excessive desire to use the substance (2). The American Society of Addiction Medicine further describes addiction as a primary, chronic, and neurobiological disease with associated psychosocial, environmental, and genetic factors that influence the development and manifestations. Addiction can be characterized by one or more of the following behaviors: impaired control over drug use, compulsive use, continued use despite harm, and craving.

Scope of the Problem

Physicians are not immune from current society substance abuse problems. Previous studies of addiction, which have included alcohol abuse, have projected that 10% – 14% of physicians may become chemically dependent at some point in their careers (3-6). When alcohol is excluded from such assessments, the incidence of drug dependency is estimated to be between 1% and 2% (7-11). Although these data generally mirror the incidence of substance use disorders in the general public (12-15), when one considers the degree of responsibility and trust afforded to physicians, this degree of impairment is of immense concern. Excluding alcohol, which is the substance most commonly abused by both physicians and the general public alike, physicians have higher rates of abuse with benzodiazepines and opiates compared to the general population; whereas, abuse with recreational substances such as marijuana and cocaine is higher in the general population. This difference likely reflects easy access and familiarity with benzodiazepines and opioids among physicians. The second most abused substance, after alcohol, is fentanyl (7). The risk of substance abuse for men is significantly higher than for women in both the overall population and among physicians (16).

The incidence of substance abuse among physicians is not equally distributed across all medical subspecialties. Some reports suggest that anesthesiologists may be at increased risk for substance abuse (7). For instance, in 1983 although anesthesiologists represented only 3% of physicians, 13% of physicians treated for substance abuse, at one center during this time period, were anesthesiologists (17). Pediatricians, pathologists, radiologists, obstetricians, and gynecologists have the lowest rates of substance abuse among physicians (18-21). There are multiple postulated reasons for these differences (7,22) which extend beyond this scope of this paper.

Causes

Several theories have been promoted to explain the reason physicians develop substance use disorders, though no definitive cause has been identified. In general, the etiology behind physician substance abuse and impairment is no different than the causes found in the general public; however, some differences do exist. Genetic and personality factors, stressful lifestyle and work environment, and easy access to potent agents represent the 3 factors most often posited to explain the abuse of substances by physicians.

Some have suggested that a genetic predisposition and certain personality characteristics may lead to abuse. Indeed, almost three-fourths of physicians with a substance use disorder report a family history of addiction (23,24). Additionally, substance abuse often begins early in life and derives from learned behaviors before and during medical training. Vailant et al (25) studied a group of practicing physicians in comparison to socioeconomically matched controls to investigate psychological vulnerability among physicians. The study concluded that those physicians with substance use disorders experienced a great number of personal and family childhood problems before entering medical school. In terms of personality traits and drug abuse, physicians are typically achievement oriented, self-controlled, independent, and less comfortable asking for help from others, all of which can be associated with an increased risk for the development of a substance use disorder (26).

Others have suggested that substance use in physicians occurs as a maladaptive coping mechanism to deal with the stressful work and life responsibilities inherent in the practice of medicine (27,28). Stressful role expectations, time-management difficulties, conflicts with patients, and life-and-death decisions are inherent features of practicing medicine. In time, these
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aspects of the profession may become overwhelming. Self-medication, as a coping mechanism may ease this emotional burden and result in a substance use disorder.

Lastly, easy access to controlled substances and familiarity with their pharmacologic and physiologic effects may predispose physicians to develop substance use disorders. Anesthesiologists, who routinely handle multiple potent agents on a daily basis, are often exemplified as a particularly vulnerable group of specialists who overrepresent physicians with substance use disorders. Physicians may believe that their superior medical and pharmacological knowledge will “protect” them from the disease of addiction, and this may reflect a kind of “professional invincibility” which lulls them into a false sense of security. In fact, many residents and practicing physicians admit to self-prescribing medications (26). Furthermore, in one study of medical residents, 55% of those who reported the use of a prescription analgesic indicated that they had self-prescribed the medication (29). As previously mentioned, physicians are often independent-minded and hesitant to seek help. When this personality trait couples with a stressful lifestyle and easy availability to controlled substances, it is clear that physicians are at risk for developing substance use disorders.

Diagnosis and Reporting

Physicians are adept at concealing many signs and symptoms of substance use and often exhibit severe compromise before their problem is detected. Physicians generally display extreme dedication and diligence which assist them in masking their impairment in professional environments. Personal, social, and family obligations are often neglected at the expense of professional performance. In fact, it has been reported that a deterioration in clinical performance ranks as one of the last signs of substance abuse to manifest among impaired physicians (30,31). To complicate matters, a professional “code of silence” exists. For example, physicians often reluctantly report impaired colleagues due to potential adverse social, financial, and legal consequences (32,33).

Breiner (30) lists some warning signs that may exist among impaired physicians: inaccessibility to patients and staff, frequent absences, rounding on patients at odd hours, frequent conflicts with support staff, defensive and anxious behavior, ordering large quantities of drugs, writing multiple prescriptions for family members, heavy drinking at hospital functions, and decreased work performance. None of these signs alone is pathognomonic of substance abuse; rather, each can serve to raise suspicion among those suspected of a substance use disorder. Furthermore, some medical schools and hospitals have established urine drug screening programs which include preemployment and random testing. However, the results of this method of testing have not proved particularly effective in detecting the majority of impaired physicians (2). The mainstay of substance abuse detection consists of peer reporting of suspected colleagues.

The legal elements of reporting impaired physicians vary from state to state. Only 20% of states in the U.S. have laws that mandate the reporting of physicians who are suspected of a substance use disorder (2). Most state licensing boards have assumed the responsibility of supervising the evaluation and treatment of impaired physicians through the establishment of Physician Health Programs (PHPs). Such programs, however, vary significantly with each state board. Among the states with laws that mandate the reporting of impaired physicians, the majority also have laws protecting the reporter from civil suit. According to the AMA, physicians are ethically obligated to report impaired colleagues. Indeed, ethical obligation rather than legal mandate typically leads physicians to report impaired colleagues.

Treatment and Prognosis

Impaired physicians generally struggle with the decision to seek treatment more than persons in the general population because of denial, independence, and a strong sense of “professional invincibility.” Once engaged in treatment programs; however, the prognosis for physicians is better than members of the general population (34). Nearly all states offer PHPs that are designed to assist with the evaluation and treatment of impaired physicians. Referral to a PHP often reflects the first step in the treatment algorithm for impaired physicians. A comprehensive treatment program for physicians requires the following: immediate intervention, evaluation and triage at an appropriate facility, uninterrupted therapy usually in a residential setting, family involvement, and appropriate re-entry into practice with comprehensive case management, monitoring, advocacy, and a relapse contingency plan (35). Moreover, treatment programs often involve inpatient detoxification, psychiatric evaluation, group therapy, and support group attendance at 12-Step programs such as...
Alcoholics Anonymous, Narcotics Anonymous, and/or Caduceus (i.e., a program specifically designed for impaired medical personnel).

Most data demonstrate better treatment outcomes for physicians than the general population with reported abstinence rates of 70% to 90% (2). The best outcomes are observed among patients who undergo 2 – 4 weeks of intensive inpatient treatment: 75% to 85% of participants successfully return to work (36, 37). Physician recovery appears to occur independent of the particular substance of abuse or professional specialty. Most PHPs will continue to monitor the physician for a minimum of 5 years and provide periodic drug screening, support groups, and ongoing treatment if necessary.

Recent follow-up studies on the success of PHPs continue to yield promising results. In one such study, a sample of 904 physicians consecutively admitted to 16 state PHPs was studied for 5 years or longer to characterize the outcomes of these programs (38). Remarkably, 78% of participants had no positive test for either alcohol or drugs over the 5-year period of intensive monitoring. Furthermore, this 5-year post treatment follow-up demonstrated that 72% of the physicians continued to practice medicine. Such data are encouraging.

**Relapse Prevention**

Despite the success of many state programs in treating physicians and returning them to clinical practice, some will relapse. Whereas recovery appears to be independent of the substance of abuse, some studies have documented that relapse is partly dependent upon the type of substance abused. Domino et al (24) have demonstrated several risk factors for relapse in a retrospective cohort study of 292 health professionals. The study concluded that the risk of relapse increased among health care professionals who abused a major opioid, displayed a coexisting psychiatric illness, or reported a family history of a substance use disorder. Additionally, the presence of more than one of these risk factors further increased the likelihood of relapse. The combination of all 3 risk factors further magnified the likelihood of relapse.

Therefore, an understanding of which patients represent a higher risk of relapse can lead to the development of strategies for more effective relapse prevention. The matching of specific resources with specific risks will permit more appropriate and focused therapy. For example, in those patients with a coexisting psychiatric illness, a thorough initial psychiatric evaluation and ongoing psychometric follow-up and assessment would be an appropriate risk-specific resource allocation. This psychiatric component reflects an additional target for relapse prevention that would focus on the patients’ coexisting vulnerability. Customized monitoring and treatment plans that recognize specific risk profiles of the impaired physician will greatly reduce the relapse rate, and ultimately enhance the outcome of treatment.

**Conclusion**

Physician impairment is a real and significant public health concern. Society expects and deserves competent and safe health care providers. While physicians are not immune to substance use disorders, they must recognize their unique vulnerability and duty to seek treatment in the event of impairment. Recovery is feasible and the data support favorable odds of recovery and a return to clinical practice among those seeking appropriate treatment and counseling. Relapse prevention is critical to an effective recovery program and greater resource allocation should be focused on matching individual patient needs to specific risk factors for relapse. It is only through effective education and awareness that sustained recovery is possible.

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