

Substance Abuse in Anesthesia Providers: An Update

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The Spectrum of Abuse – Addiction

The definition of drug abuse is the continued use of a drug despite negative consequences. The step between abuse and addiction has to do with compulsion. The users have lost control of their use of drugs and those substances have become the most important things in their lives.

In the past two decades, a great deal of research and several theories have been proposed to help with understanding the process of addiction. There are three leading models which attempt to explain the factors leading to addiction. One emphasizes the effect of heredity, the Addictive Disease Model, another is the effects of environment and behavior, The Behavioral/Environmental Model and the Academic Model stresses the physiological effects of psychoactive drugs.

The addictive disease model says addiction is chronic, progressive, relapsing, incurable and potentially fatal condition that is mostly a consequence of genetic irregularities. The behavioral and environmental model says that certain influences of one's environment, including stress, abuse, anger and peer pressure can induce addiction. The academic model says that it's the use of drugs that causes the body to adapt through physiological mechanisms such as tolerance, tissue dependence, withdrawal and psychic dependence.

Is Substance Abuse an Occupational Hazard?

Anesthesiologists represent 3.6% of all physicians in the United States. However, they are over represented in addictive treatment programs at a rate of about three times higher than any other physician group. At the present time, 12-15% of all M.D.'s in treatment are anesthesiologists. In addition, anesthesiologists are at highest risk for relapse of all physician specialties.

The encouraging news is that, in a recent survey (1994-1995), it was revealed that the apparent incidence of substance abuse among anesthesiology residents was 0.40% with a faculty incidence of 0.1%. This data represents a decline in the incidence since 1986.

Why Anesthesiologists?

Numerous factors have been proposed to explain the high incidence of abuse among anesthesiologists. These include:

- Easy access to "potent" drugs particularly opioids
- Highly addictive potential of agents which we are in contact with particularly fentanyl/sufentanyl
- Diversion of these agents is relatively "simple" since only small doses will initially provide an effect desired by the abuser
- Curiosity about patients experience with these substances
- Control oriented personality

Characteristics/Demographics of the Addicted Anesthesiologist

A recent curriculum on drug abuse and addiction compiled by the ASA committee on occupational health (this can be accessed on <http://www.asahq.org/ProfInfo/curriculum.htm>) is a highly recommended in-depth source of information on this important topic. This curriculum revealed the following characteristics associated with addiction among anesthesiologists.

- 50% were less than 35 years old (this may also reflect the age distribution within the specialty)
- Residents are over-represented. It may be that due to the increased awareness of the fact that anesthesiologists are at high risk, we are therefore, more prone to look for signs of addiction in this group. (Of note, a higher proportion of those anesthesiology residents who are addicted members of Alpha Omega Alpha.)
- 67-88% are male 75-96% are white
- 76-90% use opiates as the drug of choice
- 33- 50% are poly drug users
- 33% have a known family history of addictive disease (most frequently alcohol)
- 65% of anesthesiologists (combined resident and attending physicians) with a documented history of addiction are associated with academic departments

Most Frequently Abused Agents

Traditionally opioids are the drugs of choice selected for abuse by anesthesiologists. Fentanyl and sufentanil are the most common followed by merperidine and morphine. This choice is particularly evident

in anesthesiologists less than 35 years of age. Alcohol is seen as an abused substance "of choice" primarily in older anesthesiologists, as time to produce impairment is after significantly longer than observed with opiate addiction. A similar pattern is evidence by the data that suggest opiates are the substance of choice early in one's practice; while alcohol abuse is more frequently detected in anesthesia practitioners who have been out of residency for more than five years.

Other agents, which have been abused, include: cocaine, benzodiazepines (midazolam), and more recently propofol. Over the past five years, there has been a major switch to "needle less" approaches for delivery of commonly abused agents. These approaches provide a "cleaner" alternative to the more traditional intravenous or intramuscular routes. Every possible route of administration has been tried and reported including: unusual IV sites (hidden veins in feet, groin, thighs, penis), oral/nasal administration (particularly benzodiazepines), rectal and sublingual. The inhalation agents are now entering the abuse arena as well. Sevoflurane (most likely due to its physical characteristics) has been reported as the "drug" of choice among the inhalational agents. Regardless of the primary agent, after six months, there is an increasing incidence of poly drug abuse among abusers.

Methods for Obtaining Abused Drugs

Anesthesiologists have developed numerous and often "creative" methods for obtaining agents for abuse. The most frequently employed methods are: false recording of drug delivery, improper recording on the anesthesia record or keeping wastage. In addition, recent reports have highlighted a new practice involving "secretly" assessing ampules (particularly with multidose vials) and then resealing with other substances. It is important to be weary/concerned of the faculty or resident who is "too" anxious to give breaks or volunteers to do that "late" case. One of the most frequently reported retrospective markers of addictive behavior is a desire to work overtime, particularly during periods when supervision may be reduced such as evening and weekends.

Signs and Symptoms of Addictive Behavior

Regardless of which agents are abused, any unusual and persistent changes in behavior should be cause for alert! Classically, these present as wide mood swings, periods of depression, anger and irritability alternating with periods of euphoria. Key points to remember:

- denial is universal
- symptoms at work are last to appear, symptoms appear first in the community and then at home
- the pathoneumonic sign is self administration of drugs
- detected addicts are often found comatose
- untreated addicts are found dead!!

The following is a listing of the most frequently "overlooked" symptoms:

- Desire to work alone
- Refuse lunch relieve or breaks
- Frequently relieves others
- Volunteers for extra cases/call
- Patients pain needs in the PACU are out of proportion to narcotic record
- Weight loss
- Frequent bathroom breaks

Associated Risks: Physician/patient/institution

Although traditionally risk is primarily assigned to the individual physician, there are also significant risks to patients and potential risk to hospital staff/administration when a physician becomes addicted.

Physician. The principal risks to the anesthesia providers with addictive disease include: increased risk of death for suicide by drug overdose and drug related death. Unfortunately, the relapse rate for anesthesiologists is the highest of all physicians with a history of narcotic addiction. This risk of relapse is greater in the first 5 years (19%) and decreases as time in recovery increases. The positive news is that 89% of anesthesiologists who complete treatment and commit to "aftercare" remain abstinent for >2 years. However death remains the primary presenting symptom of relapse in opiate addicted anesthesiologists!

Patient. Patients are often affected by addictive behavior as work is traditionally the last element that is impacted (symptoms appears first in the community, then at home and finally at work). The data show that impaired physicians (those who are actively abusing) are at increased risk for malpractice cases. Data for both California and Oklahoma revealed a dramatic decrease in both volume and dollar value of claims filed and in patient complaints following treatment.

Hospital/Institution. Most states have laws requiring that hospital medical staff members report any suspected addictive behavior. Failure to report may have significant consequences depending upon individual state statutes.

What to do when you suspect a problem

This process will be significantly impacted by the presence or absence of a physician - assistance committee. If your department/group/institution does not have such a committee, the time to form one and develop policies is before you need to actively utilize its services!

When forming such an important committee, it is vital that you appoint an anesthesiologist as a member. In addition, this group should have at its fingertips, a consulting agreement with local addiction specialists with experience in treating/referring physicians. Optimally this treatment group would include a physician/counselor with experience and expertise in treating anesthesiologists. The final element in the formation of this committee should be to have a help-line number and a point of with at least one pre-selected addictive treatment program .

Reporting/Intervention/Treatment

Admission to any alcohol or drug addiction treatment program is not itself a reportable event to state or national agencies. This issue can be dealt with as a medical leave of absence. When you suspect a problem, intervention must be initiated as soon as you have firm evidence that substances are being diverted. You do not need to provide proof to a level of "beyond a reasonable doubt", the evidence needs only to be clear and convincing to the impairment committee.

The primary goal of intervention is to get the addicted individual in a multidisciplinary medical evaluation process comprised of a team of experts at an experienced inpatient or residential treatment program. Do not intervene on a one to one basis! Utilize the expertise of your hospital committee, county or state medical society. When the individual has been confronted and you are awaiting final dispensation, do not leave him/her alone as new identified addictive physicians are at an increased risk of suicide following the initial confrontation.

Treatment

The specifics of treatment are beyond the scope of this presentation. However, the most important element is that a member of your faculty/group (preferably a member of the impairment committee) keep in contact with the addictive physician and the treatment team. Although there is no cure for addiction, recovery is a life long process. The most effective treatment programs are multi-disciplinary and are ones that provides long term care follow up.

Re-Entry

The Talbott Recovery Program in Atlanta, Georgia has developed a re-entry classification consisting of the following phases:

Category I: Certain return to anesthesiology immediately after treatment

- tremendous love for or career investment in anesthesiology
- accepts and understands the disease
- exhibits bonding with Alcoholics Anonymous (AA) or Narcotics Anonymous (NA)
- healthy and strong family support
- commitment to recovery contract (five years)
- balanced lifestyle
- no evidence of dual diagnosis
- treatment team/representative supports return to anesthesiology

* Department of Anesthesiology and hospital are supportive of return and will create accommodations for the returning anesthesiologist. Many departments will not allow a new resident to return, but will counsel them to a new specialty. Most departments will not hire a new resident with a history of substance abuse

Category II: Possible return to anesthesiology (need to take one to two years off, then decide)

- relapsed with recovery underway
- dysfunctional but improving family
- involved, but not bonded with AA/NA
- healthy attraction to anesthesiology
- improving recovery skills
- some denial remains

- mood swings without other psychiatric diagnosis

Category III: Redirected into another specialty

- prolonged intravenous use
- prior treatment failure and relapses
- disease clearly remains active
- the patient went into anesthesia to get the drugs
- dysfunctional family
- non-compliant with recovery contract
- poor recovery skills
- no bonding with AA/NA
- obvious and severe psychiatric diagnosis

A. Successful reentry requires the following: (guidelines from the Talbott Center)

- Recovering physician must have completed an effective, structured treatment program that includes involvement of family or significant others.
- well motivated, honest, minimal denial with a good recovery program
- returning to a supportive environment for self-esteem and career
- re-entry agreement implemented before starting work
- re-entry agreement: Continuing Care Contract would have a minimum of:
 - three-year to five-year monitoring period
 - include recovering addict, medical staff committee, state society/diversion Program/treatment center
 - supervised administration of naltrexone three times a week for at least six months
 - abstain from all mood-altering substances
 - attend a minimum of four self-help (AA/NA) group meetings per week
 - random, monitored urine drug screens
 - weekly aftercare or outpatient treatment for a few months
 - select primary care physician who prescribes all medications
 - condition monitor with face-to-face regular interaction
- strongly recommend:
 - no night/weekend call for three months
 - not handle narcotics for three months
 - random testing of returned syringes for drug content

Relapse

Although there are differences in reported relapse rates, the overall relapse rate appears to be about 14% per year for residents and practitioners, this includes all substances. However, a slightly higher relapse rate was observed in those with a history of addiction to opioids.

References

1. Talbott GD, Gallegos KV, Wilson PO, Porter TL. The Medical Association of Georgia's impaired physicians program review of the first 1,000 physicians: Analysis of specialty. *JAMA*. 1987; 257:2927-2930.
2. Arnold, WP. 1995 substance abuse survey in anesthesiology training programs: A brief summary. *ASA Newsl*. 1995; 59(10):12-13,18. (Full report in preparation)
3. Alexander BH, Checkoway H, Nagahama SI, Domino KB. Cause-specific mortality risks of anesthesiologists. *Anesthesiology*. 2000; 93:922-930.
4. Menk EJ, Baumgarten RK, Kingsley CP, et al. Success of re-entry into anesthesiology training programs by residents with a history of substance abuse. *JAMA*. 1990; 263:3060-3062.
5. Walzer RS. Impaired physicians: An overview and update of the legal issues. *J Leg Med*. 1990; 11:131-198.
6. California Medical Association. Guidelines for Physicians' Well-Being Committees, Updated annually, Available from Riverside County Medical Association.
7. Silverstein JH, Silva DA, Iberti TJ. Opioid addiction in anesthesiology. *Anesthesiology*. 1993; 79:354-375.
8. Paris RT, Canavan DI. Physician substance abuse impairment: Anesthesiologists vs other specialties. *J Addictive Diseases*. 1999; 18:1-7.

TABLE I

Bolus Doses	Common	Uncommon but reported
fentanyl sufentanil meperidine	1-10 ml 2-3 ml 100-200 mg	50 ml or more 7 ml or more 1 gm or more

TABLE II

Time Until Detection
<ul style="list-style-type: none">• fentanyl, 6-12 months• sufentanil, 1-6 months• other injected drugs, >1 year• alcohol, >20 years usually

SUBSTANCE ABUSE IN ANSTHESIA

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LEARNING OBJECTIVES

At the conclusion of this refresher course, the participant should be able to : 1) Discuss the physiology of addiction; 2) identify risk factors associated with drug abuse among anesthesiologists; 3) Review the commonly abused agents; 4) Review treatment options; 5) Review recent data regarding rate of recidivism; and 6) Explore options for future avenues for treatment and education.