

Mapping our Way through the Opioid Crisis & Epidemic

By

J. Kimber Rotchford, M.D., M.P.H.

Specialist in Pain Management, Addiction Medicine, & Public Health

Dan Youra, Editor

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Published by Olympas Medical Services, Ltd. of Port Townsend, Washington. The book expresses the views of J. Kimber Rotchford, M.D., a specialist in treating patients suffering from chronic pain and substance use disorders.

Olympas Medical Services
J. Kimber Rotchford, M.D.
1136 Water St. Suite 107
Port Townsend, WA 98368

Phone (360) 385-4843

OPAS.us
Opidemic.help

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Testimonials

Dr. Rotchford's approaches are "cutting edge for addressing problematic opioid use in high-risk patients."

Alex Cahana, M.D., Professor and Chief,
Division of Pain Medicine, University of Washington Medical Center

"Poster boy" for the cost effective, scientific, and successful treatment of pain and addiction patients."

Samuel W. Shoen M.D.

"I've met several people who were under Dr. Rotchford's care, none of whom had a problem transitioning from narcotic treatment to being medication free."

Audrey L. Fain, Ph.D. (retired) Registered Nurse CA-WA

"Well regarded Pain Management consultant and has been recognized as a leader in the state."

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"After surgery, the orthopedic surgeon prescribed heavy doses of oxycodone and oxycontin – believe me they were needed. Dr. Rotchford prescribed a non narcotic pain drug and I was able to be off them in a month. I now take nothing, not even an aspirin."

Marilyn Muller, patient

"Dr. Rotchford, thank you so much for helping the people who cry out for help and no one else will hear them but you."

Jean Tidwell

"Dr. Rotchford does a job that no one else has the interest and skill to do in this community, which is to take care of the chronic narcotic dependent and chronic pain patient."

J. Szereny

"Kim Rotchford, MD, works with the most difficult population in our community."

Gary Novak

"I do not know what I would have done without him."

Anonymous

INTRODUCTION

This compendium by J. Kimber Rotchford, M.D. lays out background for understanding the current American opioid epidemic. An expert in Addiction Medicine and Pain Management, Dr. Rotchford also has longstanding expertise in Public Health.

He reviews basic aspects of the disease, myths surrounding opioid abuse, multifactorial causes, and effective treatment strategies. **Dr. Rotchford strongly advocates for a public health intervention, similar to our effective responses to other epidemics such as tuberculosis. The best response to a serious epidemic is to use the professionals with the best track record of managing epidemics, our Public Health professionals.**

The compendium is divided into six topic areas with associated links:

1. [Opioidic - an Opioid Abuse Epidemic](#) - An attempt to understand the epidemic through a basic understanding of addiction, cultural factors, as well as reviewing the established medical and behavioral risks for acquiring an opioid use disorder (opioid addiction).
2. [Myths](#) - Common myths and misconceptions regarding substance use disorders
3. [Epidemics and Their Study \(Epidemiology\)](#) - This discussion supports the essential role for Public Health in preventing as well as addressing the “Opidemic”
4. [Substance Use and Abuse are Public Enemy #1](#) - Further discussion as to the magnitude and nature of the epidemic and the essential role for Public Health.
5. [Agonist Therapy for Opioid Abuse Disorders](#) - Exploration of available treatments for those who have opioid use disorders. Effective and accessible treatment is a cornerstone for managing all epidemics.
6. [Medical Uses of Addictive Substances](#) - Principles involved in understanding substance use disorders, particularly from a biological as well as behavioral perspective are explored. Similarities and differences in addictive substances commonly prescribed by physicians are reviewed.

SUMMARY

The word “Opidemic,” as featured in the title of this report, combines the words “opioid” and “epidemic.” The word is used by the author to accentuate the disease’s uniqueness and severity. An immediate Public Health response is warranted.

Opioid Use Disorder (Opioid Addiction) is a biological disease. It is in the family of Substance Use Disorders (SUDs). This compendium reflects the complex and multifactorial nature of opioid abuse epidemics. Associated loss and suffering extends to the entire community. The costs from the disease and this epidemic extend well beyond direct medical costs.

Schools (poor learning & behavior), businesses (compromised work), the criminal justice system (police, courts, prisons), social services, and the budgets of the federal and local governments are all seriously impacted by the opioid epidemic.

Justification for an effective Public Health response is provided. Formal estimates of savings from effective prevention and care are in the range of 7-12 times the money invested.

Author

[J Kimber Rotchford, M.D.](#) is a specialist in Addiction, Pain Management, and Public Health. He has thirty-five years of clinical experience in primary care and pain management. He has provided specialized treatment for substance use disorders over several decades. Trained in Public Health he is a Fellow of the American College of Preventive Medicine. He is medical director of [Olympas Pain and Addiction Services \(OPAS\)](#) located in Port Townsend, Washington.

Editor

[Dan Youra](#) is editor and publisher of online magazines. He is chairman of the board of directors for JC MASH free clinic in Port Townsend, Washington

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1. *Opidemic – an Opioid Abuse Epidemic*

“Opidemic” is a term coined to describe the significant morbidity and mortality associated with opioid use and abuse in the United States. The phenomenon has become widely accepted as an epidemic and it warrants a vigorous Public Health response. Let us address the Opidemic as we have done effectively with other epidemics such as tuberculosis, influenza, heart disease, etc.

Following in Topics 3 & 4 a more formal introduction to epidemiology and our Public Health system are presented. Public Health expertise makes it the ideal means to further map out and coordinate an effective response to any epidemic.

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A. Basic Understanding of Addiction and Opioid Use Disorders

[Survey Shows Opioid “Addiction” Misunderstood](#) - A new national survey found that both adults and primary-care physicians in the United States cling to a variety of misperceptions and stereotypes about opioid addiction. These perceptions affect the way the disease is diagnosed and those afflicted are treated. The survey conducted during January and March 2013 involved more than 1,000 adults, ages 26 to 49, and 200 physicians. A major objective was to understand current attitudes about addiction to opioids — whether prescribed or illicit — and treatment for the disease. Along with that, the survey revealed some surprising knowledge deficits among the public and healthcare providers.

As the above survey indicates there is much ignorance around opioid addiction. What immediately follows provides only a basic and brief introduction to opioid use disorders and addiction. In Chapter 5. [Agonist Therapy for Opioid Use Disorders](#) and Chapter 6. [Medical Uses of Addictive Substances](#), the reader can find more detailed material concerning some of our medical understandings and clinical principles as they relate to the management of substance use disorders, including opioid use disorders.

The following brief discussion on addiction is taken from a public presentation Dr. Rotchford provided entitled: **Addiction and Being Human**. The presentation occurred at St. Paul’s Episcopal Church in Port Townsend, WA on July 26th 2017. It will act as a

primer for the general reader for issues related to substance use disorders, and in particular opioid use disorders.

Addiction and Being Human

INTRODUCTION: The concept of “addiction” may mean something different depending on the context. For the purposes herein, we use the current medical term for addiction, a substance use disorder.

The title, “Addiction and Being Human”, reflects an intent to mitigate cultural shaming and prejudices directed toward those who struggle with addictions. A better appreciation of the nature of substance use disorders, and how we think about them should only be helpful.

More than any other chronic disease that afflicts us, such as diabetes, tuberculosis, and other mental health disorders, our susceptibility to substance use disorders is consistent with a universal and fundamental attribute of human nature.

The substances which are associated with substance use disorders “hijack” parts of the brain designed to promote higher forms of learning and remembering. The capacity to learn and remember clearly are important human attributes and arguably are fundamental and essential traits of being human. While we most often give homage to our conscious thinking, subconscious mechanisms arguably dominate human behavior and our basic perceptions. In brief, addictive substances effect the same areas of the brain which allow us to both consciously and subconsciously learn and remember.

While the mechanisms involved with learning and remembering have been “hijacked”, people with addictions are not stupid! Indeed, they learn well, or one could say, in some ways they learn too well. Anyone can be challenged to entirely forget what is no longer of use or problematic. An ease at learning complex patterns subconsciously, as we see in excellent athletes, performers, etc. might well be considered a risk factor for developing a substance use disorder.

Why are substance use disorders considered chronic and incurable diseases? The simplest answer may be as already noted, it is challenging and perhaps impossible for humans to entirely forget what they have learned. Remnants of memories and experiences, whether conscious or not, seem to remain in intact brains. A second explanation, consistent with the first, is that receptors on brain cells and neural circuits are permanently affected. Evidence for long term changes are supported by PET scans of the brain. Even 5 years or so after past use of cocaine, subconscious circuits light up with proper cues. This is despite no conscious awareness of same.

In addition to these and other objective changes in the brain, the best support for using the medical model is evidence that when substance use disorders are addressed as a disease, the outcomes improve. With complex issues that are incompletely understood, it is often best to be pragmatic. The medical model is pragmatically the best we must achieve the most cost-effective outcomes with substance use disorders.

In addition to promoting proven effective clinical medical approaches, a robust Public Health response will incorporate a “system” approach. Our historical emphasis on using will power, shame, regulation, prohibition, and the criminal justice system as our primary and sometimes only tools, have had limited results and arguably have aggravated the problem. (Reference to Published Paper on Cultural Influences)

Cultural influences are explored throughout this book. A familiarity with cultural influences is essential to better understand the how’s and whys behind varied responses to substance abuse. The American culture has had a significant impact on the prevention, recognition, and effective care of substance use disorders.

The suffering and the premature deaths associated with substance use disorders are of staggering magnitude. They arguably represent our greatest public health threat. See further discussion in Chapter 4. As with tuberculosis it is unlikely that substance use disorders will be totally eradicated. Addictive substances are going to be around. They are appealing and often quite helpful, and are often essential in modern medical care. Lastly, human brains and behavior are not likely to significantly change anytime soon.

Because of its pragmatic importance, some of the specifics of the medical model follow. Further discussion occurs in Topics 5 and 6. The physiological mechanisms and genetics associated with substance use disorders are arguably better understood than most common diseases. As with most diseases why one patient is more susceptible, and why some people do better than others, with or without appropriate treatment, are questions with unclear answers.

With tuberculosis, which generated the Koch postulates for identifying an infectious causal agent, we know that exposure to the tuberculosis bacteria is required. Questions remain, however, as to why some people get the disease following exposure and others not? Furthermore, why do some people respond to standard therapies, and others not? We understand bacterial resistance but this does not entirely explain the variability in responses. We know that socioeconomic factors, immune status, and comorbid medical conditions also play a role. So even with the infectious disease tuberculosis, which promulgated scientific criteria for causality, there remain many unknown and confounding variables related to the incidence and prevalence of tuberculosis. In addition, despite dramatic strides in our understanding and treatment of tuberculosis, tuberculosis still remains a significant Public Health threat.

In addressing the opioid epidemic, it is reasonable to employ the same principles for understanding and responding to tuberculosis and other infectious epidemics. To best respond to a disease such as tuberculosis one must be able to diagnose it. How in medicine do we make the diagnosis of a substance use disorder? Unfortunately, there are no specific biomarkers like with tuberculosis or diabetes. This lack of a biomarker doesn’t mean that opioid use disorders do not reflect disease as commonly defined. The changes in the brain associated with substance use disorders are quite objective. Furthermore, there are valid and reliable criteria along with validated questionnaires that allow one to reliably make a diagnosis.

When severe, substance use disorders (SUDs) are often obvious to family and friends. Whether based on brain or cultural factors, the disease is often denied by the patient. Is this dysfunction in recognition of the disease, often called denial, a product of brains not working properly, or is it better to attribute the denial to cultural factors or subconscious psychological factors? There are no objective answers, yet social denial is one thing and Individual denial is likely to be well another.

There have been many formal reliable criteria used to establish the diagnosis of addiction or substance use disorders. The following are current criteria based on evidence and expertise. As an example, they relate to opioid use disorders.

An opioid use disorder is a problematic pattern of opioid use leading to clinically significant impairment or distress, as manifested by at least two of the following, occurring within a 12-month period:

1. Opioids are often taken in larger amounts or over a longer period than was intended.
2. There is a persistent desire or unsuccessful efforts to cut down or control opioid use.
3. A great deal of time is spent in activities necessary to obtain the opioid, use the opioid, or recover from its effects.
4. Craving, or a strong desire or urge to use opioids.
5. Recurrent opioid use resulting in a failure to fulfill major role obligations at work, school, or home.
6. Continued opioid use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of opioids.
7. Important social, occupational, or recreational activities are given up or reduced because of opioid use.
8. Recurrent opioid use in situations in which it is physically hazardous.
9. Continued opioid use despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance.
10. Tolerance, as defined by either of the following: a. A need for markedly increased amounts of opioids to achieve intoxication or desired effect. b. A markedly diminished effect with continued use of the same amount of an opioid. Note: This criterion is not considered to be met for those taking opioids solely under appropriate medical supervision.
11. Withdrawal, as manifested by either of the following: a. The characteristic opioid withdrawal syndrome. b. Opioids (or a closely related substance) are taken to relieve or avoid withdrawal symptoms

Several things to recognize about the formal criteria which are not commonly appreciated, even by professionals:

1. No current signs or symptoms are required. The criteria pertain to *any* 12-month period, whether past or present.
2. No single criteria make the diagnosis and the lack of any one criteria is not diagnostic.
3. One can have the disease and not have symptoms of withdrawal or tolerance, whether presently or in the past. For example, cannabis use disorders occur in about 15% of regular users but are uncommonly associated with any serious physical dependence.

Some anti-depressants and blood pressure medicines can induce serious physical dependence but yet are not medically considered addictive substances.

4. One doesn't have to break any laws, be unethical, or morally deficient to have a substance use disorder.
5. One does not need to want to use, or want to continue to use the substance to have a substance use disorder. Conversely, not liking or wanting to use the substance doesn't exclude having a substance use disorder.
6. The diagnosis does not depend on whether the opioid was a prescription, how it was used, obtained, or what dose used. These factors are at most risk factors for the disease.
7. As with most chronic diseases, particularly those that affect the brain, the disease has a continuum of severity from mild to severe disease. It often waxes and wanes and there are no set of criteria which are specific to everyone.
8. Frequency of use or duration of use is only relevant if duration is longer than was intended.

The physiology of substance use disorders - What happens in the brain as a result of the disease process?

The brain adaptations and pathophysiology that are associated with substance use disorders are complex, diffuse, and there is yet much to learn. They vary significantly from one abused substance to another.

What we seem to know most about, is the area of the brain that is initially "hijacked" by substances of abuse. This area of the brain is called the nucleus accumbens. It is this area of the brain that allows us to learn complex tasks and to predict further reward or lack thereof. Indeed, the nucleus accumbens could be described as the main processor as it relates to higher forms of learning. As already mentioned, learning and remembering are emblematic of what it is to be human. Substance use disorders, as they reflect dysfunctional learning and remembering, reflect a basic human susceptibility to substance use disorders as well as other forms of addiction.

What happens normally in the nucleus accumbens to promote healthy learning is quite similar to what happens when an addictive substance is used. As far as we know, with all forms of higher learning, all substance use disorders, and some behaviors such as gambling, sex, pain behavior, etc. all start with surges of dopamine in the nucleus accumbens. A substance which directly causes a significant dopamine surge in the nucleus accumbens is addictive and may cause a substance use disorder. When a dopamine surge does not occur with exposure, then technically the substance is not an addictive substance. Substances that do not directly cause a release of dopamine may be readily abused though technically they are not addictive substances. An example of such substances might be LSD or other hallucinogenic substances.

Substances or behaviors associated with higher surges in dopamine are more addictive. Substances associated with less dramatic surges in dopamine might, in susceptible individuals, still induce a substance use disorder. Cannabis and refined sugars are examples of substances with significant but less dramatic dopamine surges. Heroin, nicotine, and methamphetamine are examples of substances abused which result in

higher surges of dopamine. Hence, these substances are among the most addictive. The intensity of the surge in dopamine in the nucleus accumbens remains the best predictor of a substance or a “behavior” addiction potential.

Fortunately, even with highly addictive substances such as heroin, most people will not develop an addiction with occasional use. Only 20% of the Vietnam War veterans who experimented with heroin, eventually developed clinical disease. As with most learned behavior, addictive behavior and substance use must be repeated for the disease to develop. It is assumed based on physiological mechanisms involved, that some sort of “contingency” is required, as is true with most forms of higher learning. Therefore, the concept of and management of cues and triggers play such an essential role in addiction management.

Note, there is no evidence that the brain responds to an addictive substance based on whether the substance is legal, prescribed, or used as a food or not. There are, however, many established contextual variables such as related mental health conditions and genetics that contribute to the susceptibility for developing a substance use disorder, its management, and its prognosis.

Treatment Options: In general, substance use disorders are best individualized and managed with a combination of medical as well as behavioral interventions which include family and community support. **The best predictor for a good outcome remains the time in treatment.**

As already discussed, substance use disorders are chronic relapsing disorders like most major mental health disorders and commonly addressed medical conditions such as diabetes and hypertension. Indeed, the benefit of combining approaches is no different than with most chronic diseases such as diabetes, obesity, arthritis, depression, etc.

Substance use disorders associated with alcohol, stimulants, and sedatives are most often addressed through behavioral means and total abstinence. Even when there is a valid emphasis on abstinence, as is the case with alcohol use disorders, there are many medicines for alcohol use disorders that can help a patient to achieve sobriety, and provide harm reduction.

Medication Assisted Treatment (MAT) in opioid use disorders, whether with methadone or buprenorphine, has substantial supporting evidence. In some studies when moderate to severe opioid use disorders exist, the annual mortality rate alone is 4 to 5 times greater with abstinence based approaches as compared to medication supported approaches.

Patients who have more serious opioid use disorders and succeed at remaining abstinent seem to have more stress related medical conditions, painful conditions, and shorter and less fulfilling lives than their counterparts who are managed with MAT. The need for MAT with an opioid use disorder is distinctly different from alcohol use disorders. In alcohol use disorders, abstinence is a good and reliable surrogate marker for a robust recovery and future well-being. Abstinence with moderate to severe

opioid use disorders, is in contrast a relatively poor bet, albeit still commonly encouraged.

Social/Community Responses

A comprehensive systematic approach that addresses both individual rights and the larger community needs is warranted. This approach would assure ready access to necessary medical care. This approach would minimize the current social and financial consequences of substance misuse and emphasize compassion and effective medical care. Prohibition and adversarial approaches consistent with our regulatory and criminal justice approach are not working and are unlikely to play a major role in any long term effective approach. Individual blame and adversarial approaches are to be transformed into collaborative efforts. It warrants repetition: substance use disorders are diseases and the epidemics associated with same merit Public Health expertise that effectively addresses epidemics.

Multiple studies have shown that for every dollar spent in treatment of an opioid use disorder 3-7 dollars are saved in other medical costs. This substantial saving does not include the savings related to other social costs, including those associated with the criminal justice system.

Summary: Human nature is such that we behave and perceive based on our individual as well as social conditioning. At times, human conditioning can be so strong it results in one doing the opposite of what one intended or decided to do.

To better assure our collective values are honored, we need experts who can help us modify our counterproductive behavior and beliefs, and in so doing improve personal and public health.

Perhaps addictions more than any other ailment reminds one that on a personal as well as a cultural basis, we are subject to conditioning. We as humans sometimes learn “too well” and have problems forgetting. This returns us to the title of the presentation: “Addiction and Being Human”.

B. Cultural Influences - cultural and social factors that influence substance use disorders.

Cultural influences as well as individual experiences are important to appreciate in understanding and better respond to opioid use disorders. Like diabetes and other chronic diseases, when dealing effectively with opioid use disorders, we must not only treat biological and behavioral factors, but also be sensitive to contributing cultural factors.

The relative high prevalence of substance use related problems in the United States demands explanations that encompass not only the biological but cultural factors as well. Once these cultural as well as biological mechanisms that promote opioid abuse are better appreciated, we are better prepared to effectively establish a comprehensive Public Health intervention and ultimately an effective prevention strategy.

People who suffer from addictive processes commonly are predisposed to denial, blame, and shame of themselves and others. In startling ways, the self-destructive patterns associated with addictions often continue despite the serious consequences.

But should the behavior be such a surprise given what we know? When people or cultures persevere in behaviors that were once helpful, but are now dysfunctional, they exhibit commonly observed neurotic behavior. Addictive processes are at the more extreme end of these common neurotic processes. In the case of addictive processes associated with substance use, significant brain pathology (objective changes in brain tissue) is routinely found which also help explain the significant and dysfunctional behaviors observed.

While neurotic and addictive patterns are common human attributes, the question remains: why is the prevalence of addictions in the United States seemingly so high? The answers are complex and multifactorial. Some are listed below without an attempt to prioritize their relative importance.

Availability and access to substances of abuse are important and proven contributors and risk factors to help explain the development of substance use disorders. Eliminating easy access has been the primary thrust of our preventive approaches as exemplified in the “War on Drugs” and the draconian powers provided to the DEA. This approach, while having some merit, does little to paint the entire picture. Indeed, our “War on Drugs” is widely accepted as a failure.

The concept of co-dependence, while somewhat abstract, is useful. It commonly comes up in recovery from addictions. It is considered a significant risk factor for all substance use disorders.

There are many possible ways to define co-dependence. A useful definition is that codependency is an attribute of people who tend to have a high emotional charge vis a vis their responsibility to manage the feelings and behavior of others.

Many of us have grown up with parents or loved ones who have said things like: you make me so proud, you make me so angry, you make me feel ashamed, etc. These sorts of comments, from caring authority figures, can readily condition children to feel responsible for how others feel.

Is American culture more codependent than other cultures? Americans do tend to use intimidation and force to control the behavior of others. Since one’s behavior often reflects underlying feelings and beliefs, using force to control another’s behavior, outside the context of self-defense, may well reflect attributes of codependence.

The use of intimidation and force is prominent and reflected through our laws, police, prisons, penalties, shaming, isolation from others, military might, religious determinants, or other effective means of control. These means of force are not limited to governmental entities. Parents, spouses, institutions, and others in authority often feel justified to use heavy handed means of intimidation and control.

It is sometimes necessary to put limits to dysfunctional behavior and such limits may reflect healthy compassion. By healthy compassion, I refer to the human capacity to respond to other living things through empathy and with concern for their well-being. It is encapsulated in the great commandment of loving your neighbor as yourself. Healthy compassion may lead one to intervene, whether gently or more forcefully.

Even professionals can confuse compassion with co-dependence. Some physicians have been criticized for being too compassionate in their prescribing of pain medicines. I maintain that a physician can never be “too” compassionate. They can though be codependent and in so doing contribute to a patient’s and their communities’ ill health.

The question of being over attentive to the feelings and behavior of others comes up routinely with parents. What is one’s responsibility as it relates to the managing and controlling the behavior and feelings of one’s baby or child? Responding appropriately to a child’s feelings or limiting their problematic behavior is quite appropriate and may even be life sustaining. There is a point at which, however, where attempts to control or feel responsible for the feelings of child is dysfunctional. At what age? It seems to differ even from one child to the next. Similarly, it can be challenging to define where compassion and concern for your neighbor translates into codependence. Nonetheless, the distinction is valid and clinically important.

How might the charitable attributes of the American culture and its concern for other be distinguished from attributes of codependence? There are many contextual variables but when one is prepared to identify codependent behavior, it becomes more obvious. As with parents, there are equivocal answers to the question of when one should stop attempting to control or feel responsible for the feelings and behavior of a child. Nonetheless, while some behavior is ambiguous and must be judged by context, the reality of “overprotective” behavior is that it is often counterproductive.

For better and for worse, America’s military strength has been described as the police force of the world. American police and its military seem prone to use undue force. What is this inclination to feel responsible for controlling unwanted behavior from others based on? Within our own society is it related to burgeoning laws and regulations? In any event, the extent of these control efforts has many concerned. I argue they reflect, at least in part, the American predisposition towards codependence, and with it an inclination to fear what one cannot control.

Illusions of control are typical among those suffering with addictive disorders, as well as in the larger American culture. Prohibition, more laws, stiffer penalties, more money, more research, larger defense budget, or predetermined knowledge of God’s will, are just some of the means of feeling in control over real or imagined threats. While there are important steps to take to control any epidemic, it is helpful to avoid illusions of control. Only a handful of the epidemics related to infectious diseases have resulted in everlasting control. For the most part, particularly when epidemics are multifactorial and are related to basic human nature and biology, the best outcomes are achieved when

harm reduction strategies are used. Attempts to overcontrol or regulate a force of nature can be counterproductive as the “War on Drugs” has been.

The [Drug Policy Alliance](#) is an organization of people committed to reassessing our need to control the use of drugs. Such efforts have had significant influence in changing the laws as they relate to marijuana. As the effect on liberalization of marijuana laws become acknowledged, we might expect similar changes related to all substances of abuse. While an absence of laws or rules related to substances of abuse is not reasonable, one can recognize throughout history, the pendulums of change may often have to swing from one extreme to the other. Only then may a better balance be eventually established.

Puritan Heritage

Some of our beliefs and approaches to substance use disorders stem from our puritan heritage. Puritanical beliefs justified and even promoted punishment and penance for bad behavior. Jails and prisons are still, despite some exceptions and lip service, are not designed to be rehabilitative. They impart justice and punishment. Some of our prisons are still called “penitentiaries”. It is well beyond the scope of this paper to fully explore the benefits and harm of punitive approaches to human behavior. Suffice it to say that bad behavior stemming from unhealthy brains likely benefits more from steps to help brains heal, rather than steps to create further stress, shame, and blame.

Strong evidence supports that mental illness and substance use disorders can damage areas of the brain and produce faulty judgement, faulty insights, or socially unacceptable behavior. These facts put into question the justice of punishing behaviors over which the victims have little control. Indeed, the disease of addiction, perhaps more than any human understanding, puts into question beliefs about free will?

Individualism is another American attribute contributing to addictive disorders. The story of the heroic pioneer man comes to mind. Individualism can make it problematic to accept the “We” in the first step of any 12-step program. It becomes challenging for someone highly individualistic to appreciate how the “We” of the first step translates into a more functional “I.” Americans readily believe the corollary: if I help the I, the We benefits. There is some truth in this and political tensions often arise around opposing beliefs in these matters. Nonetheless, from a pragmatic standpoint, an important step in confronting co-dependence and an inclination for using force is to remember the “We” and “Our” approach.

In sporting events, business, education, and so many other endeavors motivation, persistence, and a confidence in what one can do and must do translates into better results. In other matters, however, the approach of individualism and “self-will” may be destructive and most often is not part of a sustainable “solution.”

On this subject of the “we” vs. the “I” approach, paradoxically, the “close” communities of drug and alcohol abusers are potent and likely mitigate the stress not only from

having the disease and its consequences, but also mitigate the effects of individualism and isolation.

The “War on Drugs” often translates into an “us and them” perception rather than we or team approaches. This inclination to battle or make war against behavior we object to is another potential cultural contributor to substance abuse within the United States.

In the past, rugged individualism was antidoted by religious institutions which promoted a collective approach for salvation and life. There was an acknowledged dependence on a loving and just God. “Let God be the judge!” American money has printed on it: “In God We Trust” but given the individualism that is rampant, it is now a relatively rare American who takes this powerful American adage to heart.

Supporting Evidence & Arguments for the role of cultural influences in addictive disorders

The following list of findings adds to the above factors in validating cultural factors contributing to addictions and the Opidemic. All cultures have similar factors. It is the “excess” of these factors that may help to explain American predisposition to addictive disorders.

Laws and Regulations: Longstanding control efforts through laws and regulations. Let’s not forget it has been less than 100 years since we attempted to prohibit alcohol abuse through a constitutional amendment.

Shame and Blame: People with addictions are often shamed and blamed. Even patients on chronically prescribed pain medications can experience significant prejudices in medical settings, to the point of undue suffering and death. Whether the prejudices or biases associated with addiction are comparable to those with racism or sexual preferences is arguable. There is also an overlap with some examples of racism. Not uncommonly some people will justify their racist attitudes based on addictive behavior. Examples includes alcoholism in native Americans and the use of cocaine or marijuana by African Americans.

Criminalization: People with addictions are criminalized, marginalized, and shamed. People addicted to substances or other addictive behaviors are highly discriminated against. The majority of people in American jails are there for mental health and substance abuse related crimes.

Proper Medical Care: People with addictions commonly confront challenges to obtaining proper and adequate medical care.

“Just Say No” Government officials and institutional policies support a “Just Say No” approach to kicking addictions. This approach assumes that the answer to addiction is more willpower, discipline, and perseverance, as in the self-sufficient pioneer man. It is also commensurate with some religions’ belief that salvation is achieved through the ability to control one’s own sinful nature and that of others.

Policing Citizens' Behavior: For better or for worse, the United States government takes on the role of policing citizens' behavior, even when the behavior is the result of physiological processes beyond the control of a person, as is arguably the case in those suffering from a serious substance use disorder.

Over Regulation: The United States is arguably the most regulated society as it relates to substances of abuse. The Drug Enforcement Agency (DEA) has been given powers, second only to the Internal Revenue Service (IRS). The results of such "power" and control efforts are associated with a gross failure to control the abuse of substances.

The association between a failed outcome and our highly regulatory approach does not demonstrate causation. There are of course many factors at play. Nonetheless, the paradoxical and seemingly counterproductive acceptance on being powerless, works for many who suffer from addictions. Might this approach be more effective as a society? It is likely, based on human nature and evidence from countries with less substance abuse, that less regulated drug use, and managing substance abuse through a robust public health approach would have better outcomes.

Lack of Openness and egocentricity: In the discussion of solutions or responses to the "Opidemic," one rarely hears: What do other countries and cultures do? How successful are they? In being "addicted" to the American way, Americans seem unable to seek outside input or perspectives? The same patterns are commonly encountered in patients who are addicted. At the point when a patient becomes open to receiving outside input, and the process of asking for help is encouraged and experienced, the patient's prognosis is greatly improved.

Lastly, further discussion and a separate paper to be published on Cultural Factors as they relate to the opidemic can be found [online](#).

C. Getting into Solutions

Pragmatic approaches are the best, particularly when it comes to challenges that are complex and multifactorial. When attempts to control are demonstrably ineffective and arguably counter-productive, policies and regulations need to be reevaluated and changed.

Addressing Co-Dependence

We admitted we were powerless over alcohol – that our lives had become unmanageable.

The above phrase is the first step of Alcoholics Anonymous (AA). The first step in Alanon, the fellowship for friends or family of alcoholics, expresses a powerlessness over the behavior of one suffering from alcohol. The focus becomes on how one can respond differently. The importance of addressing elements of codependence is noteworthy. The process represents an acceptance of the importance of a loving detachment vis-a-vis one's own behavior and the behavior of others, particularly with those who are dealing with addictive disorders. This detachment, paradoxically not only helps family and friends, but it also creates a context in which the person who suffers from an addiction are more likely to improve. The improvement in outcomes from substance use disorders might be as high as 20% or more.

Over time, and through working the other steps, the first step of Alanon often translates into an awareness of powerlessness over people, places, and things. This is in addition to the acknowledged powerlessness over alcohol or other substances as stated in the first step. The fruition of working the steps can be partially encapsulated into the benefits which rise as a result of saying the serenity prayer:

God grant me the serenity to accept the things I cannot change, courage to change the things I can, and the wisdom to know the difference.

We tend to shun from paradoxes. This is true whether they are provided in the form of “The Beatitudes” or as above, in the first step of 12 step programs. How does more control come from accepting that we do not have control? This is a paradox that the American culture needs to better embrace if healing is to occur.

Assuring proper medical care

In addition to reevaluating our illusions of control and codependent traits assurance of proper medical care for those with substance use disorders is needed. The World Health Organization has listed both methadone and buprenorphine as essential medications. Access to both are still quite limited.

Opioid use disorders are to be better prevented, and better recognized, particularly early on. As already confirmed, the indications for effective agonist therapy (eg: methadone, buprenorphine, etc.) is essential for curbing the epidemic. All epidemics are best addressed when “carriers” and those who suffer from the disease are effectively treated. While changes in our cultural attitudes, laws, and approaches will curb the opidemic, we must also provide necessary medical and behavioral care for those with the disease. The following links reflect the importance of acknowledging substance use disorders as a chronic and relapsing brain disease. The disease predictably interferes with healthy learning and behavior.

[Addiction is a Chronic Brain Disease](#) This link provides the basic arguments for SUDs as brain diseases.

[Agonist Therapy for Opioid Use Disorders](#) This is a primer for patients wanting to obtain basic information about the importance of Medication Assisted Treatment in the care of patients who have Opioid Use Disorders. It is helpful whether one has a chronic painful condition or not. References are provided.

It is an important subject and presented in Chapter 7.

The above primer on agonist therapy supports the epidemiological principle that when there is a disease that is causing an epidemic, to curb the effects of an epidemic, it is most often essential to assure effective and timely treatment for the disease. People with opioid use disorders are potential “vectors” for “infecting” other people and they help maintain a demand for illicit distribution of opioids. Effective care of addictions has been repeatedly demonstrated to limit deaths and unnecessary suffering. It remains humbling and grievous to review the possible explanations why such care is lacking.

Robust Public Health Response - Please!

Arguably the most important solution is to encourage a robust Public Health involvement and response. While assuring access to necessary medical care, a robust Public Health response is needed. Please see the Chapter on [Substance Abuse – Public Health Enemy #1](#).

Public Health officials and our Public Health system are the prevention specialists. Unfortunately, based on funding and the misbelief that the answers lay in more laws, regulations, and the criminal justice system, a robust Public Health response has been slow in coming.

Addressing Misbeliefs and Misunderstandings

We have already discussed the survey which demonstrated ignorance about opioid use disorders, even among professionals. The next chapter reviews some of the common myths and misunderstandings.

Facts and critical thinking often do not compete well with beliefs. When it comes to human behavior and politics, beliefs inevitably trump the facts. Nonetheless, the list of common myths and misunderstandings regarding substance use disorders is provided in the next chapter as a way to counter some of the widespread ignorance and fear.

D. Initial Conclusions- How best then to respond to the Opidemic?

There is no one answer. A comprehensive approach is needed. The serenity prayer helps, particularly when dealing with a codependent culture so deeply entrenched in addiction. A robust Public Health response that focuses on collaboration and “system” approaches, in combination with ready access to interventions known to be effective. Let us be willing to question our beliefs. The myths and ignorance surrounding addictions are enormous even among professionals.

Fewer laws and rules and criminal justice involvement will help, particularly in conjunction with a robust Public Health and harm reduction approach.

I suggest we embrace the best of our Christian heritage: caring for the sick, showing compassion, withholding judgements, and above all being prepared to forgive.

2. *Myths and Misconceptions*

J. Kimber Rotchford, M.D., M.D.

[Myth #1 - We Know The Cause of Addiction](#)

[Myth #2 - All Users Become Addicted](#)

[Myth #3 - The Drug Causes the Addiction](#)

[Myth #4 - Abstinence is the only answer](#)

[Myth #5 - Bad Doctors](#)

[Myth #6 - Addicts Are Bad People](#)

In this second topic we review six common myths and misconceptions related to attempts to explain, prevent, and respond to the opioid epidemic.

Myth #1 – We Know The Cause of Addiction

There is much to be said and explained about this myth. Established risk factors or factors highly associated with the opioid epidemic are not “causal”. That is, in the sense of: if A then B. This “if A then B” assumption is perhaps the most important lapse in critical thinking as it relates to understanding and better responding to the opioid epidemic. It is a variant of the *Post Hoc Ergo Propter Hoc* fallacy. It simply states that, if something occurs after something else, the preceding event is the cause. Based on common human experience, we tend to assume that what precedes an event is likely to have caused it. This assumption is not always supported by critical or scientific thinking. We know that attributing causation is much more complex than identifying preceding or associated events. At best we often can appreciate risk factors and do our best to reduce same.

Let us review three examples of the *post hoc ergo* fallacy as it relates to the opioid epidemic and addictions.

Example 1: Patients who are prescribed higher doses of opioids, particularly methadone, are more likely to die of an overdose. The fallacy is to assume that it is simply the higher dose of prescribed opioid that caused the death. When one looks closer at the facts, we find that there are many lives saved, a much greater number than those dying, when high dose opioids are properly used. It’s not the dose but the improper selection, monitoring, support, and care for comorbid conditions, let alone other substances abused, that best explain the mortality rates associated with higher doses of opioids.

It is not a coincidence that a disproportionate number of overdose deaths occur in Medicaid patients. Among other confounding variables, patients on Medicaid commonly are more ill and disabled. They often have co-occurring disorders.

There is further evidence to support the fallacy of the above assumption of higher doses best explain the overdose rates. In Washington State, based on its Prescription Monitoring Program data, there is no good correlation between the total amount of opiates prescribed in a county, and the number of overdose deaths.

Common sense also supports the notion that sicker patients are more likely to have more complications and higher mortality. Patients who require higher doses of opioids are likely more ill for a host of reasons and likely, because of the severity of their illness, to experience greater mortality. For example, patients on higher doses of insulin are more likely to die from overdoses or have other complications. To attribute the problem only to higher doses is fallacious.

Example 2: Another example of the *post hoc ergo propter hoc* fallacy stems from the belief that patients who develop heroin addiction often started with the use or abuse of prescription painkillers and hence, the reason given for the heroin epidemic is the over prescribing of opioids for pain.

While the prevalence of a substance in an environment is an established risk factor for abuse of the substance, to explain heroin addiction primarily on doctors prescribing is a classic *post hoc ergo propter hoc* fallacy. Heroin addiction has been a problem long before doctors started prescribing opiates more readily. Increased laxity in prescribing opioids occurred in the 1990s when pain was considered the 5th vital sign.

There are likely other explanations such as the cost plummeting and access to heroin soaring after our invasion of Afghanistan. The invasion was known to increase the production and distribution of heroin.

When pain practitioners have been “taken out” there is a common upswing in demand for heroin in the community. This seems to counter the argument that bad prescribers are the “reason” for heroin abuse and complications.

It is a fact that propensity for opioid use disorders is in large part genetic and there are significant risk factors aside from a history of using a pain prescription. From an epidemiological standpoint these other factors are much more likely to explain the risk of development of the disease or complications from its use.

In Washington State as physicians have been prescribing less opioids the overdose rate from prescription drugs has predictably gone down. Meanwhile, the rate of heroin overdoses has skyrocketed. Overdose deaths related to heroin have always dwarfed the

rate associated with prescription overdoses. Nonetheless, the regulatory emphasis has been on blaming unprofessional, and “overly compassionate” licensed physicians.

Example 3: Just because Monday mornings are associated with a higher frequency of heart attacks doesn't mean that the primary cause for heart attacks is a Monday morning! While the stress of Monday morning for a host of reasons may be a factor, to ascribe Monday morning as causal is ludicrous, but we often make similar causative accusations regarding opioid overdoses. Understandably there are factors that might aggravate the likelihood of an overdose. Like Monday mornings, they must not be assumed to be causative, at least in the normal sense of the word.

Myth #2 – All Users Become Addicted

As above discussed the notion of causation in medicine and Public Health can be confusing and often poorly understood. Using the traditional Koch's postulates, one can be comfortable attributing the disease of tuberculosis as being caused by the tuberculosis bacilli. We readily accept that the disease as caused by a gram-negative rod belonging to the family of mycobacterium. Nonetheless, there are people who clearly get exposed to these bacilli and never come down with the disease.

There are factors other than exposure that contribute to the likelihood of clinical disease. Host immunity, the amount or duration of exposure, the potency of the bacilli are all factors that could influence whether the disease develops. To make things even more complicated sometimes the tuberculosis symptoms don't develop until years after the first exposure. So, while the tuberculosis bacilli are a prerequisite for the disease, one cannot say that they alone explain why the disease manifests.

In a similar fashion, while exposure to opioids is a prerequisite to developing the disease of opioid use disorder, and there are estimates that 80% of heroin abusers start with prescription painkillers, most people who are exposed never come down with the disease. Current evidence is that only about 20% of Vietnam veterans who used heroin ever developed the disease. Even the use of the potent and illicit opiate, heroin, which was abused in a stressful context, associated with trauma and associated with the frequent use of all kinds of other addictive substances, only spawned the disease in approximately 20% of those exposed. Nonetheless, we commonly assume that heroin is highly addictive and causes opiate use disorders. What about the 80% who never develop the disease after use of heroin?

Causation from a clinical and scientific standpoint means: there is adequate evidence to reject the null hypothesis. That is, the incidence of the disease or treatment can be attributed to a specific factor (confounding variables are eliminated as possible) other than to chance alone, and that only with a likelihood of greater than 95% ***in the group studied***. In addition, for formal medical causation to be readily accepted, a plausible explanation as to the mechanism for the result is often required. This formal definition of causation is poorly appreciated by most physicians let alone politicians and the general public.

When attempting to explain the causes of the epidemic we are dealing with highly complex biological and social phenomenon. With the complexity, we often seek simple explanations of causation. This happen even among professionals who are well educated and “should know better”.

In response to the epidemic, Washington State officials translated the cause as being related to certain drugs or doses of drugs. Furthermore, prescribers who commonly prescribed the medications at higher doses were blamed or even criminalized. Unsafe prescribing practices in concert with poor diagnostic acumen have undoubtedly contributed to opioid abuse.- A full exploration of this is explored in the published paper: [An Informal Review of Opioid Dependence \(Addiction\) Associated with Chronic Opioid Analgesic Therapy \(COAT\) for Chronic Pain](#) . Nonetheless, it is wrong to assume that doctors or their prescribing practices were the primary cause of the epidemic.

There are some bad apples and incompetent physicians. These physicians are fortunately relatively rare. Some physicians also have substance use disorders or mental illnesses poorly recognized and cared for as well. Fortunately, we have longstanding ways to identify and intervene when physicians are incompetent or significantly unprofessional.

The government has fostered billions of dollars in research on finding safer forms of pain pills with a belief that the “abusable” pills prescribed are a significant if not primary reason for the epidemic.

Myth #3 – The Drug Causes the Addiction

We have to be careful about blaming a particular substance or drug or its inherent “addictability” as the primary “cause” of a complex phenomenon. Exposure to a substance is understandably a risk factor for a complication from the substance. There are commonly, however, significant risk factors outside of the pharmacology of a substance, and these risk factors are commonly contextually determined. For example, cholesterol doesn’t cause heart disease in most people. Indeed, cholesterol is necessary for life itself! High cholesterol is a risk factor and may contribute to heart disease for those so predisposed.

The same is true with exposure to opioids. Opioids can save lives. It appears though that about 20% of the population is at risk for developing an opioid use disorder or significantly abusing them. Similar to cholesterol it’s not opioids alone which cause the disease. Host factors, how it is used, duration, brain health, social factors, etc. all influence the likelihood of abuse and the disease developing.

Methadone which is a potent and potentially dangerous opioid, is an FDA approved medication to effectively treat patients with opioid uses disorders. It is also cheap and highly effective for patients with serious and chronic pain disorders. It is an effective treatment largely because it creates stability in the central nervous system, significantly

better than shorter acting substances such as morphine or oxycodone. It promotes stability so well that it helps those seriously addicted to opiates function normally!

Still most people and even licensed professionals can't believe or accept that an addictive substance can help someone with an addiction. Methadone is commonly maligned. This is despite evidence so strong that it forced our government to establish methadone clinics.

Myth #4 – Abstinence is the only answer

Many people still believe that the only true cure from an addiction can come through abstinence based approach. Indeed, this belief in abstinence as “the cure” is so strongly held in our country, that most formal evaluations for addiction care, base their outcomes primarily on the rate of abstinence. It is as if diabetic care was judged primarily by the number of people who were able to abstain from insulin.

Granted, for alcohol use disorders and most substance use disorders, abstinence is a cheap and effective surrogate marker for a healthy outcome. Abstinence is not a universally valid surrogate marker for a healthy outcome with substance use disorders. For example, in moderate to severe opioid use disorders abstinence is relatively contra-indicated. This explains why the U.S. government, despite all the cultural taboos and myths, has paid for and continues to pay for methadone clinics.

Myth #5 – Bad Doctors

Another variant of blaming the messenger is the common myth that when patients die from an overdose it means their doctor did something unprofessional. Many overdose deaths could be prevented through better support and structure provided by better educated professionals. There is no doubt about this. Nonetheless, blaming doctors about overdose deaths is similar to blaming a physician as being unprofessional because a percentage of their patients with cancer or heart failure died. In the current climate of bigotry toward physicians who prescribe opioids for pain and sometimes at higher doses than usual, physicians can lose their licenses or DEA registrations while never being convicted of malpractice!

Opioid use disorders are serious and life-threatening diseases. The suicide rate alone is high. The suicide rate for chronic pain patients is also quite high. Untreated co-occurring disorders are often not recognized or treated in chronic pain patients. Depression, sleep disturbances, other mental conditions, and unrecognized substance use disorders are common in chronic pain patients. All these factors add to the risk for suicide in chronic pain patients.

There is also the belief that physicians and the “drug companies” are to blame for the current epidemic. Authorities quote findings that 80% of heroin users start with prescribed painkillers. The assumption is that the “cause” of heroin abuse is primarily related to

“overprescribing” by physicians and overzealous marketing by drug companies. While safer and as effective options for pain management need to be encouraged, the assumption that stopping the over prescribing of opioids will eliminate the vast majority of heroin abuse, is a myth.

If one were to conclude that since the vast majority of motor vehicle accidents occur on city streets, the solution is to simply eliminate as much as possible city streets or vehicles, one would hopefully pause and question the wisdom of such a draconian response. But our strategies with opioid abuse are similar to the above example. We proceed as if the only way to curtail MVAs on city streets is to eliminate some city streets (particularly the ones with more accidents!), and proceed with regulatory and even sometimes criminal proceedings against licensed drivers, car dealers, and car manufacturers who contribute to the deaths.

This sort of approach would surely curtail the number of cars on the roads, and as a result there could well be less MVA accidents, at least on the city streets regulated. Imagine though the possible unintended consequences of this approach. The financial and social implications are huge. In envisioning this sort of MVA reduction strategy, one can envision some benefits, but the overall strategy is obviously flawed. This comparison is intended to help convey the flawed nature of our current strategies for deterring opioid abuse.

Myth #6 – Addicts are Bad People

Another myth is that addicts are bad or evil and that’s their primary problem, and, as a result of their behavior they deserve to be locked up or punished.

I consider a sociopath as the “bad” person. Sociopaths seem incapable of remorse over hurting others. They may be incapable of recognizing socially acceptable behavior and being honest with themselves or others. I do not know what percentage of patients who suffer from opioid use disorders are sociopaths. I have recognized only the rare sociopath in my specialized addiction practice. I conclude that the percentage of sociopaths is no greater than in the general population.

There is the old joke about an addict: “How do you know when an addict is lying? Answer, when they open their mouths.!” Most people consider those who lie are bad. Based on good evidence concerning how many times each day the average person lies, there are a lot of “bad” people out there. Patients are known to be dishonest. Diabetic patients and hypertensives routinely are non-adherent and lie to healthcare professionals. In patients with substance use disorders, it is understandable that they would lie. If honest they could suffer significantly and potentially die! People with addictions are not stupid! They have learned if they tell the truth they will be highly discriminated against and commonly shamed. Furthermore, with their prescribers, if they are caught or are honest, they are discharged from ongoing care, and often all care. They are told they must go elsewhere, often without a formal referral.

It is expected when people are: stressed, in a state of withdrawal, frustrated or understandably enraged their behavior would be unruly. In addition, when patients have comorbid mental health problems poorly managed, have not slept, are in pain, have little money, have no friends they can trust, are often abused, are constantly being reminded they are no good and will never amount to anything, or that they are just low down addicts who need to be “discharged”, and that as a result of all the beforehand, one with a serious substance use disorder are likely to lie or to otherwise behave poorly at times is predictable and “natural”.

No one, however, likes to deal with a liar. We do not feel safe particularly when we cannot trust those we have a relationship with. Nonetheless, it is time we start to forgive the lies and get into the solutions. This is the best strategy for the lying to stop. Shaming if it worked would have surely resolved the problem. In 12 step literature it is acknowledged that there are some unfortunates who seem incapable of being rigorously honest. This unfortunate character defect, goes, however, far beyond the halls of addiction.

Along the lines of discrimination, when a patient who has an opioid use disorder has chronic pain issues and is not able to adhere to a pain management agreement, they are commonly discharged and not seen for anything anymore. Imagine the level of lying among insulin dependent diabetics, or the rate of adulterated urines one would see, if an insulin dependent diabetic was concerned about being discharged and not prescribed insulin whenever their sugar levels were inordinately high or sugar was ever found in their urine!

Medical providers often stigmatize those with addiction for lying. It is known that diabetics or hypertensives are commonly dishonest with their providers. Nonetheless, they rarely suffer as much for lying as an untreated opioid use disorder patient, particularly one who has significant pain.

A corollary to the myth of people with addictions being bad is the judgement that people with addictions are stupid! The irony is they have the disease and are still alive, at least in part because they learn so well, and have such a hard time forgetting! People with substance use disorders have often an uncanny ability to cope, read people, make a deal, and put on a performance that surpasses the best of actors. MENSA patients are often the most difficult to treat, in part because they are so smart. In my experience gifted athletes are also at higher risk for addictive disorders.

Sadly, and for a variety of reasons, patients with end stage substance use disorders have damaged their brains, sometimes permanently. One advantage with simple opioid use disorders, is that patients, once stabilized, their brains generally return to normal and largely function normally whether on agonist therapy or not.

3. Epidemics and Epidemiology

CONTENTS TOPIC 3 - EPIDEMICS AND EPIDEMIOLOGY

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A. Definition of an Epidemic

Epidemics are commonly associated with outbreaks of infectious diseases: flu, polio, tuberculosis, swine flu, AIDs, Zika virus, food-related pathogens, etc. An epidemic may reflect the presence of any disease or health-threatening process that occurs more than the ordinary. In public health circles epidemics reflect higher than normal [morbidity](#) (disabilities) and mortality (deaths) in groups of people (populations). Merriam Webster's [Definition of Epidemic](#).

B. What Epidemiologists Do

Epidemiologists track levels of morbidity and mortality; they alert the public to changes in trends. They are trained to identify likely causes and promote effective remedies once an epidemic is identified. Public health professionals are familiar with the science of epidemiology – the science which promotes the understanding of and effective responses to epidemics.

Epidemiology is a science, which depends highly on statistics. Statistics reflect data compiled through conventional forms of mathematics and permit informed professionals to predict trends, causes, and effective responses.

The average person associates a truth with what can be expected with near certainty. For example, water freezing at 32°F or 0°C is a truth commonly accepted by most people. In the realm of living systems this level of certainty is rarely encountered. To improve their ability to predict, epidemiologists do not base their predictions on specific, individual experiences; they are trained to base them on the "experience" of large groups of people.

It is the study of groups or populations which allows an epidemiologist to provide a statistical probability for predicting causes and effective responses to an epidemic.

While most people do not understand nuclear physics, they do accept what a nuclear bomb can do. Similarly, while epidemiology is not well understood by the average person, epidemiology does save lives and sometimes in dramatic ways.

The epidemiologist is for populations what the physician is for the individual. Epidemiologists help us place good bets regarding our collective health in ways like what a physician does in placing good bets for the health of a patient.

C. Do Statistics Lie?

Based on the outright abuse which can come from poorly interpreted and inappropriately applied statistics, people often believe that statistics lie and that there is no "real" truth in statistics. As with most facts, statistical facts are commonly interpreted through the lens of beliefs. Any good politician, let alone salesman, and even some professionals may misuse statistics in a way to support their ends. This does not mean that statistics lie. It does infer though that statistics are commonly misinterpreted and misused. Most often the misinterpretation comes from ignorance and often too through the clouded lens of our beliefs.

In contrast, a good epidemiologist can be delighted when a long held "belief" is questioned. For an epidemiologist, beliefs are supposed to be questioned. Beliefs are to be changed on evidence, evidence that can be independently evaluated, and found to be highly predictive of what is likely to happen.

Furthermore, a good epidemiologist will more likely speak in probabilities rather than certainties. The relative certainties of some aspects of the physical world are not to be expected in living systems, where probabilities are the rule rather than the exception.

[The Five Most Popular Ways Statistics Lie](#) – Link to an outside source for review.

[Lies, Damn Lies, and Statistics](#) – Link to the Wikipedia discussion of the topic.

D. The Interplay Between Facts and Beliefs - a brief discussion

As a physician with a solid background in epidemiology, I for a long time believed that facts and objective realities dominate what happens in our lives. I no longer believe this. When it comes to understanding human responses and how best to predict them, I now believe one must emphasize beliefs, conditioning, and contextual variables, as being more relevant than the facts.

Our beliefs are more likely to influence the facts, rather than facts influencing our beliefs. The proverbial "I'll believe it when I see it" becomes "I will see it when I believe it." Despite my new beliefs, I do not abandon the importance of facts. Facts can be used to alter beliefs, at least I think so. Furthermore, I believe that facts (objective evidence) support my belief that one's interpretation of facts is commonly trumped by beliefs.

When it comes to remembering facts, one's "beliefs" and "conditioning" and expectations are especially striking in predicting interpretation of facts. Commonly, eye witnesses, who testify under oath to have vividly remembered seeing "the facts" of an event, can be shown to have grossly misinterpreted the facts, based on the objective filming of the event.

Other variables other than the facts and educational background predict human behavior. For example, about 80% of the population, when demanded to do so by an authoritative figure, will routinely behave significantly outside of, and even contrary to their established values and norms of predicted behavior.

E. Exploring the Complex Causes of Epidemics - a discussion with practical implications

The previous discussion of the role of beliefs in interpreting facts is particularly relevant when we discuss the cause of an epidemic. The "cause" for an epidemic, despite the science involved, is steeped in cultural as well as individual beliefs. Perhaps, the best argument I can make for this is to provide examples of where the purported or accepted cause for a medical condition, let alone an epidemic, is based primarily on cultural and other conditioned beliefs rather than objective evidence.

Take the simple example of a physician reporting to their patient a "cause" for their medical findings.

A common example may be a case of appendicitis. This is a relatively common and treated medical condition. The facts support an inflamed intestinal appendage as the cause, which, when left untreated, can burst and be fatal. The pathologist's objective report confirms the diagnosis based on "objective" findings common to other patients with signs and symptoms of appendicitis. Despite the obvious pragmatic value in the this "belief" system, let me formally question it's ultimate "truth." The facts are that some patients with signs and symptoms of appendicitis get better despite not having surgery. Is it because they don't have appendicitis? Or, is it because of other variables and "truths" which speak to the "pathology" and possible solutions. In Chinese medicine, with thousands of years of useful outcomes, the explanation for the signs and symptoms can be entirely different from our Western explanations.

Common experience acknowledges that after the appendix is removed, symptoms or complications from appendicitis are unlikely. These facts do not preclude that a patient's individual nature, diet, current circumstances, anatomy, and context often better explain the signs and symptoms related to a pathological appendix. These other variables might be considered "causes" similar to how high blood pressure is commonly considered to cause strokes.

In our culture, in these surgical matters we simply attribute the cause to the final and objective finding of appendicitis. In western medicine we have a firm belief in the value of objective facts and findings. While as previously noted the pragmatic value of honoring the objective is hard to deny, I argue that the importance one puts on the objective is subjective; and, eventually it filters down to subjective beliefs and values of right or wrong, healthy or unhealthy, beautiful or ugly, etc.

Another example in clinical medicine is when clinicians use the diagnosis of depression as the cause of a sign or symptom. As with many western diagnoses and labels, causes are often discussed in the context of the solutions provided. For example, if a person has signs and symptoms of depression and gets better with the prescription of an antidepressant, it is commonly believed to corroborate that the cause for the patient's signs and symptoms was depression. This is not acceptable reasoning and represents a form of the *post hoc, ergo propter hoc* fallacy, "after this, therefore because of this." This fallacy is common even among professionals and is rampant in clinical medicine, as well as in other disciplines exploring and explaining causes.

Multiple examples exist in which the illusion of simple explanations for cause and effect are applied to complex events. When it comes to human behavior, whether in the realms of economics, politics, religion, let alone medicine and public health, we need more humility. Simple explanations of causes are better appreciated in terms of better appreciating risks and probabilities. Rather than explain a heart attack based on a blood vessel clotting, as true as it might be, it is important to consider the potential impact of genetics, diet, exercise, obesity, non-specific cultural factors, anger, stress, inflammation, hypertension, hyperlipidemia, diabetes, age, Monday mornings, hormonal abnormalities, to our understandings of "the cause."

With the above discussion in mind, let us be cautious of simple explanations for complex phenomenon as are evident in the opioid epidemic, let alone any epidemic. Not every person exposed to the tuberculosis bacilli comes down with the disease. Hence, can we reasonably say that the tuberculosis bacilli is the sole "cause" for the disease or an epidemic associated with same? Only 20% of American soldiers exposed to heroin during the Vietnam war developed the disease or experienced complications. Is heroin the "cause" of our opioid epidemic? Is it oxycodone? Is it related to high doses? Is it the prescribing practices of physicians? Is it morally deficient people? Is it people who are just

not able to “just say no?” Is it a lack of adequate regulatory efforts? Or is it simply human nature and a question of probabilities?

Let us be cautious to not ascribe quick and easy explanations to complex human behavior. Simple explanations may satisfy the general public, the media, politicians, etc. but most often do not promote comprehensive and effective solutions.

In clinical medicine we have learned to appreciate the importance of not assuming the value of an intervention without studying it thoroughly. For example, let’s look at the protections in place before a new pharmaceutical can come on the market. Even with clear and established mechanisms of actions (causes?) in addition to apparent predicted favorable benefit to risk outcomes, extensive controlled trials are required before we allow a new pharmaceutical to be marketed. Furthermore, extensive follow up and monitoring for long-term, unintended consequences are indicated. Even with these protections in place, and with all our efforts to minimize the effects of “beliefs” and profit motivations through random selection of samples, blinding of patients and providers, and other rigorous aspects of clinical study designs and analyses, we see pharmaceuticals that do not measure up with the test of time.

In contrast, governments and politicians exhibit little hesitation to impose significant interventions in the enactment of new laws and regulations. In Washington State, there is the case of pain management rules adopted with the hope of curbing opioid overdoses. Physicians and doses of opioids were blamed as the causes for the epidemic of prescription overdoses, resulting in hastily passed laws and regulations. These rules impact the practice of medicine in unprecedented ways. The benefits of such regulatory efforts are problematic, particularly if one looks at unintended consequences. By explaining the causes of the opioid abuse epidemic as being entirely or even significantly attributed to the level of physicians’ prescriptions or the doses of medications prescribed, limited resources have been expended on relatively minor risk factors in addition to a myriad of unintended consequences.

F. Unintended Consequences in Oversimplification of Complex Problems

As to the unintended consequences of such regulatory interventions we note that while overdose deaths associated with prescribed opioids went down, heroin overdoses skyrocketed and heroin overdoses always represented a major share of overdose deaths.

The “gateway” theory of prescription opiates being the “cause” of opioid use disorders has solid credibility. It is impossible to develop the disease, no matter what one’s other risk factors are, if one is never exposed repeatedly to opioids!

Nonetheless, to ascribe the exposure as being a primary “cause” is problematic. One can never eradicate exposure to opioids given their fundamental and established role in medicine. It is obvious that the vast majority of patients (greater than 80% at least, even

for patients chronically prescribed opioids) never develop the disease. It is no coincidence that patients on state financed health programs were disproportionately represented in prescription overdoses, arguably by a factor of five to one. These statistics indicate that the causes of opioid overdoses are more complex than simply blaming prescribers, medications, or doses.

Another unintended consequence of regulatory intervention is the reticence of physicians to treat chronic pain patients. Might the fear of regulatory consequences, losing one's license, and even criminal charges, make it challenging for physicians to justify treating complex pain patients with opioids? The increased shortage and public health crisis stemming from the lack of physicians willing to treat complex pain patients suggests serious unintended consequences of the legislation. The significant morbidity and mortality associated with untreated chronic pain are not disputed.

In my published case report, [A Complex Pain Patient Who is Opioid Dependent](#), I make a compelling argument for the serious consequences, often unrecognized, when patients with chronic pain and co-occurring opioid use disorders do not receive adequate [agonist therapy](#). Indeed, even the Washington State Pain Rules themselves, based on overwhelming evidence, state that the prognosis is poor for patients with moderate to severe opioid use disorders who do not receive appropriate agonist therapy. In another peer reviewed journal [An Informal Review of Opioid Dependence \(Addiction\) Associated with Chronic Opioid Analgesic Therapy \(COAT\) for Chronic Pain](#), convincing evidence that as many as twenty percent of patients on opioids for chronic pain have a significant opioid use disorder. Given the above information, legitimate public health concerns must arise when these chronic pain patients lose access to appropriate agonist therapy.

If one does the math the pain rules have likely generated substantially more unnecessary deaths, let alone morbidity, than they prevented. Imagine the public outrage if a pharmaceutical agent with even less risks had been allowed to be marketed.

G. A Public Health Response is needed

The above discussion provides warnings against oversimplifying complex phenomenon such as the opioid epidemic. Dealing with epidemics is best left to professionals who can be relatively insulated from political and cultural biases and beliefs. Our Public Health officials and the epidemiologists they employ are the trained professionals with the expertise to respond based on the best evidence. They are trained to analyze and respond to complex problems that threaten our public health. There will be a steep learning curve for these officials, because substance abuse has only recently been recognized as a public health concern. The role for Public Health is more fully explored in the next topic: [Substance Abuse - Public Health Enemy #1](#))

4. Substance Abuse & Misuse are Public Enemy #1 – A Public Health Perspective

CONTENTS Topic 4 - Substance Abuse and Misuse

- A. [Background](#)
- B. [What Has Been Our Approach](#)
- C. [Explanations for our lack of a Public Health response to substance abuse](#)
- D. [Issues specific to opioids and opioid dependence](#)
- E. [The Answer?](#)
- F. [Planning Our Future](#)

A. Background

In addition to illicit drug and alcohol abuse, prescription drug abuse is fast becoming the most challenging drug-related problem. In the state of Washington opioid overdoses related to prescription related opiates surpassed motor vehicle accidents as a leading cause of accidental deaths. Mortality and deaths are only part of the grim picture. Health-related issues pertaining to prescription drug abuse and related opioid abuse have broad public health consequences. I encourage addressing this complex issue through a clear and robust *Public Health* perspective.

When epidemics occur in conjunction with an infectious disease, we are all quite familiar with Public Health involvement. Effective ways to identify and to limit the spread of a disease are determined and implemented through the expertise of Public Health officials. The knowledge about the specific agent and the epidemiology of the related disease is coupled with solid Public Health principles to design an effective response. Vectors for the disease are reduced while prompt and effective medical management for the disease is sought. Risk factors for the spread of the disease are identified and are eliminated whenever possible and pragmatic.

An approach similar to the standard Public Health approach to infectious disease epidemics needs to be employed for our drug abuse epidemic. Public Health professionals are trained to discover what works and what doesn't work when considering epidemics and to help assure that a coordination of efforts is made to assure for the best outcomes.

B. What has been our approach?

As a culture we still largely consider opioid abuse as a moral or criminal issue, or at the very least a character flaw in which one is not able to appropriately contend with the myriad of potential stressors of daily life. In contrast, the consensus among well-informed experts is that opioid dependence is a *disease*. The implications are straightforward: Attempts to just say no or to eradicate the disease through stiffer penalties, shaming, or other means that are commonly employed to address dysfunctional behaviors are quite likely to fail when proper prevention and medical care is overlooked.

Take for example the HIV epidemic: If we addressed the HIV epidemic with stiffer penalties and simple suggestions such as to “just say no” what would have been the outcome? Even today, at this late date in the HIV epidemic, there are those who would continue to advocate such “behavioral” approaches. Nonetheless, the “prohibition” approach based on current evidence rarely works particularly when dealing with “biological” phenomenon. Indeed, the unintended consequences of the “Just say no” approach could easily have aggravated the HIV epidemic. Thankfully, a robust Public Health response was used to address the HIV epidemic: education was initiated, vectors for the disease were identified, prevention strategies were implemented, and effective treatments initiated. The results demonstrate that this approach is highly successful as compared to “prohibition” models. While we still have far too many cases of HIV infected people, the incidence and prevalence of the disease have been dramatically reduced and we have witnessed a relatively dramatic success story through a broad Public Health approach.

C. Explanations for our lack of a Public Health response to substance abuse

While multiple explanations are possible, I think the following are three of the more important ones.

The first explanation is one that was already alluded in the above commentary. There are a constellation of cultural attitudes and conditioning which purport to explain addictive disorders as based on character flaws or even on sinful tendencies. We continue to deny that addictive disorders involving substances are *disease* processes. For this brief discussion there will be no formal attempt to argue the current scientific evidence that supports substance use disorders, particularly opioid use disorder, as a true disease. Those who still believe that these addictive disorders are not a disease, must be asked for a definition of disease? When one uses standard medical means of defining a disease, it quickly becomes evident that most serious substance use disorders are diseases. Opioid use disorders are defined by experts as chronic relapsing diseases and if not properly treated, have a poor prognosis. If the disease concept could be more fully acknowledged, it follows that a Public Health response to the opioid epidemic would be even more the right choice.

A second explanation is related to the first. Current institutional and financial systems have

left the Public Health perspective out of the equation. The criminal justice system, social services, and current behavioral addiction services remain the primary players in addressing addictive disorders. While we thankfully have the National Institute for Drug Abuse, the funding for the Centers for Disease Control(CDC), our primary Public Health agency, is shamefully lacking when it comes to addressing substance abuse problems. If addiction is a disease and it is arguably our primary public health concern, we must support funding for the CDC and other public health institutions to better prevent and treat substance abuse. Most money funneled to the states through [SAMHSA](#), the federal agency overseeing substance abuse and mental health, go to State services which manage Medicaid and other social services. They are not directed to Public Health.

There is a huge “industry” involving suppliers, the criminal justice system, and treatment providers. Based on significant financial incentives, this industry is highly invested in current “markets” and perspectives. It is not, however, that our serious problems stem primarily from corrupt, greedy, or even stupid people. For example, the case for integrating drug addiction treatment with the criminal justice system is compelling. The fact is though that current funding and financial incentives compromise an effective Public Health response.

Another possible explanation for the lack of a robust Public Health response is that the public wants simple explanations and simple solutions. This goes along with a pattern in our culture to simply blame *someone* or *something* as the problem. Recent media coverage of prescription abuse problems in Washington State resulted in many objects of blame: methadone, Medicaid, incompetent physicians, and “drug seekers” were blamed. Our state legislature subsequently passed a law that limited, without a specialist consultation, the ability for most prescribers to prescribe higher doses of opioids.

This new prescription pain medication law is like the political response attempted less than 100 years ago in the way of alcohol prohibition. To address alcohol abuse and its serious public-health consequences prohibition was enacted. It is widely acknowledged that our attempt to prohibit alcohol use was ineffective and likely created more problems than it resolved. The prohibition response appears, however, to remain quite attractive to many Americans. It identifies a complex problem such as alcohol abuse, and then it attempts to simply resolve the problem through a simple solution, that is, to simply create laws to prohibit or limit its use.

While simple explanations and simple solutions often have merit, they have a particularly powerful influence over our electorate. Americans have a peculiar inclination to believe more laws and regulatory efforts will solve all our problems. How else might one explain the ever-burgeoning administrative law in this country. Even when compelling evidence refutes the overall benefit, the electorate is satisfied when their politicians invoke more regulations. Indeed, the regulatory apparatus is arguably the largest financial enterprise in the United States.

In summary, the “Just say No” slogan is a classic example of a “simple” solution which was politically expedient. When it comes to addressing addictions and the American propensity for addictive disorders, simple explanations and simple solutions have not worked. We need a comprehensive “system” approach to an inherently complex set of circumstances. A robust Public Health intervention which incorporates comprehensive system as well as individual interventions is needed.

Another possibly important factor in explaining the lack of an effective response to the epidemic is the predilection for objective data. Substance use disorders do not have valid and reliable biomarkers. In contrast, if someone has tuberculosis, we can culture the bacteria. Unfortunately, at least for the time being, comparable bio-markers are not available for substance use disorders. We must still depend on reliable and valid clinical tools and expertise.

D. Issues specific to opioids and opioid dependence

While there are likely other possible explanations for why the Public Health perspective appears relatively absent about SUDs in general, let us now review some issues specific to opioids. About opioid abuse, it is especially apparent that a zero-tolerance approach is simply not going to work. Opioids are likely to remain a mainstay of effective and necessary medical care for the foreseeable future. If physicians are not able to prescribe opioids patients will unnecessarily die and suffer. If opioids are to be prescribed and used effectively, there will be a subgroup of patients who do poorly with them, misuse them, and even die as a result from their use. To some extent addictive drugs will always be diverted for recreational use. We must not continue to deny the possibility of complications from any effective and potent medical therapy, whether surgical or medical. Statistically, hospitals are dangerous environments!

A reasonable goal is to minimize complications and to make sure that patients who benefit from the medications have reliable access to them. Ongoing medical therapy is commonly essential for opioid use disorders, particularly when patients suffer from comorbid complex pain conditions, other SUDs, or other mental health disorders.

Abstinence for most substance use disorders is a good surrogate marker for a robust recovery. In the case of moderate-severe opioid use disorders Medication Assisted Treatment (MAT) is required.

E. The Answer?

The elements of the Public Health perspective and approach represents a formal discussion that entails more than the scope of this paper. Simply stated, however, the Public Health approach uses the best available *scientific research* to demonstrate what

works and what does not work to effectively to address an epidemic or public-health concern. When needed, further research is encouraged by Public Health officials. Based on information available, public health professionals coordinate and implement the programs, institutions, and professionals required to effectively address and hopefully resolve the threats.

Effectively addressing substance abuse problems is well-known to have immense cost savings for our government, along with the many communities, individuals, and families dealing most directly with them.

F. Planning for our future

Given the expected delays in implementing a vigorous Public Health response, let us meanwhile not make things worse in attempts to make things better. The experiments here in Washington to legislate proper medical care for patients with pain arguably have added to the problems associated with beneficial use of opioids and their misuse. In Washington State, while prescription drug related overdoses have declined there has been a related increase in heroin related overdoses. Heroin overdoses have proportionally always been the most significant public health issue.

It is obvious that less access and less use of opioids are both associated with less overdoses and other complications. Quality of life issues and the costs of depriving care also need to be part of comprehensive planning. When people cannot obtain adequate and necessary care legally, they often seek other means. Patients who have opioid use disorders or have pain serious enough eventually seek illicit means of care. Otherwise, evidence reveals they simply deteriorate and die sooner, and a large number will attempt, or succeed at suicide. These are well established facts.

Indeed, as already noted several times, in Northwest Washington surges in heroin use and suicides have occurred following the legislative changes and their implementation. It makes common sense that if opioids are being used *without proper supervision* the likelihood of serious complication are greater.

There are other clinical factors as well which may have contributed to the problem of prescription opiate abuse. A critical part of the problem is a *gross failure* to promptly make the diagnosis of opioid dependence or abuse when it is present. Between 10 and 25% of patients on Chronic Opioid Analgesic Therapy meet the criteria for opiate use disorder. Another important factor is our gross failure to effectively and adequately treat the disease when it is identified, and perhaps most importantly it is our gross failure to recognize the risk factors for the development of the disease and to initiate proper preventive measures. Similar conditions, if not effectively recognized would fuel the spread of any disease and epidemic.

Third parties, particularly the Medicaid system, which has a high percentage of addicted

and high-risk patients, poorly reimburses physicians and other suitable clinicians for formal screening and treatment of drug abuse problems. In the past they have even harassed such providers based on the false premise that all these patients require is “behavioral” care. Effective medical and behavioral treatment needs to be readily available for those with the disease. Similarly, if proper screening and prevention efforts were taken, as with cancer, the development or progression of the disease would be curtailed. As already stated, the cost savings would be enormous.

Unfortunately, in Washington State we have systems and policies in place that serve to minimize the importance of medical care for addiction. While behavioral care is more available, it is the criminal justice system that “feeds” it and we continue to depend on the criminal justice system (the hammer) as the main access to “treatment”.

We also tend to blame prescribing clinicians, patients, drug companies, and even the drugs themselves. While these simple explanations have political appeal, we need effective solutions that remove us from the simple and appealing “blame” game. In review of evidence and extensive clinical experience, when it comes to dealing effectively with addictions, there is no evidence that “blaming” offers any positive long term results.

My suggestion is for us to look at “system” solutions (ie: a Public Health perspective) rather than to blame one another or to find scapegoats. We are always going to have incompetent or corrupt professionals, sociopaths and criminals, as well as good and bright people addicted to substances. An ability and capacity to effectively address these impaired members of our community is indicated. Arguably, the need is greater than monitoring cholesterol or even sugar levels. It is our young who are succumbing to the disease.

Regulatory agencies often go too far and have been provided too much authority. All the evidence and clinical experience supports specialized medical care is part of the solution rather than part of the problem. Qualified and capable physicians have nonetheless experienced the full weight of regulatory enforcement. When regulatory agents cannot readily distinguish friend from foe, as has been the case in Washington State, one must assume there is a significant “system problem”.

As already repeatedly stated, our system problems related to substance abuse and misuse cry out for the Public Health perspective and capacity to take on the responsibility for managing the opidemic. Public Health respects and promotes system changes. While system changes are not simple or straight -forward, system changes most often are needed in order to effectively and durably confront public health crises.

5. Agonist Therapy for Opioid Misuse

A primer, particularly in the context of chronic pain management

J. Kimber Rotchford, M.D., M.P.H.

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Definitions

Agonist therapy is the term associated with the use of medications that stimulate nerve cell receptors (mu receptors and others) in the brain. These medications stimulate receptors similar to the way natural and internal chemicals do. The intent of prescribed agonists in the context of pain management or addiction management is to stabilize and improve brain function.

Opiates or Opioids: Opiates are substances derived from the poppy plant. The term opioid means any substance that behaves like an opiate. Some medications such as methadone are synthesized and act similar to those substances directly derived from the poppy plant. For practical purposes, whether the substance comes from the actual poppy plant or not, all opioids act similarly and they can all be associated with addiction or opioid use disorders.

Opiate Dependence is the past medical diagnosis for patients who are addicted to opioids, ie: have an opioid use disorder. There are well established (DSM IV) diagnostic criteria which determine the diagnosis of opiate dependence: Dependence requires meeting 3 or more of the following criteria occurring during a 12 month period. Recently, DSM 5 criteria for opioid use disorders were developed for mild, moderate, and severe opioid use disorders. These criteria better reflect that like most diseases, particularly chronic ones, the severity and consequences of the disease can greatly vary. Note DSM 5 criteria are not as “vetted” as the DSM IV criteria and Dr. Rotchford doesn’t agree with DSM 5 eliminating markers of physical dependence in patients being managed with prescription opiates.

(1) Tolerance, as defined by either of the following:

(a) markedly increased amounts of the substance needed to achieve intoxication or desired effect

(b) a markedly diminished effect with continued use of the same amount of the substance

(2) Withdrawal, as manifested by either of the following:

(a) characteristic withdrawal syndrome

(b) the same (or a closely related) substance is taken to relieve or avoid withdrawal symptoms

(3) Larger amounts of the substance is taken over a longer period of time than intended.

(4) A persistent desire or unsuccessful efforts to cut down or control substance use.

(5) A great deal of time is spent obtaining the substance, using the substance or recovering from its effects.

(6) Important social, occupational, or recreational activities are given up or reduced because of substance use.

(7) Substance use is continued despite having a persistent, recurrent physical or psychological problem that is either caused or exacerbated by the substance.

There may be some argument over these criteria, particularly in cases of patients who are being prescribed opiates for painful conditions. One may sometimes hear the term “pseudoaddiction” used. The behavior of patients who are not receiving good pain management often mimics the behavior of a patient with an addictive disorder. Indeed, it is not infrequent to see an overlap between chronic pain and addictive disorders.

Furthermore, patients who are addicted often suffer from pain, particularly if they are being prescribed controlled substances. Body pain is also commonly experienced at times of opioid withdrawal. Whether an opioid is properly prescribed and taken, or used illegally, its use can, particularly in susceptible individuals, induce the disease of opiate dependency. Even some grade school children know that “oxycodone” can be considered weak “heroin” in a pill form.

Some opioids are more likely to promote addiction than others. For example, people who regularly use heroin are more likely to become addicted than people who regularly use codeine. Nonetheless, over periods of time even weak opiates used by a predisposed patient can and do lead to addiction.

Discussion related to a specialized pain and addiction medical practice:

In a specialized pain management practice, patients are referred because their pain is poorly controlled. If the referred patient has been prescribed opioids over some time, given the above criteria for opioid dependence, it is not uncommon for a diagnosis of opiate use disorder to be justified. (Note: This may even be true when the patient is no longer using opiates!). Referred patients are often struggling and opiates are frequently an issue. They

are an issue whether it is about taking too much or too little. Concerns and preoccupation around a substance is a marker for addiction and many of the patients referred for specialized care meet the formal criteria of an opioid use disorder.

Patients who currently take or who have taken pain pills only as prescribed may still have an opioid use disorder. While an inability to adhere to medical recommendations brings up “red flags” it must be appreciated that just because a patient is currently “abstinent” or not using opioids, does not exclude the possibility of them having an opioid use disorder. The diagnostic criteria apply to any 12 month period in a patient’s life, whether it is recent or 20 years or more in the past.

Like any addiction, opiate use disorders are chronic and lifetime disorders. Once the brain has been programmed it cannot readily forget. As in learning a foreign language, over time one can forget much of what one has learned. But if one learned a language as a youth or spoke it for some time, one will probably retain significant amounts of it. The same is true for the language of addiction.

One can learn other languages and take measures to avoid using the language of addiction, but once learned, it is virtually impossible to entirely forget it, whether one wants to forget it or not. Just as some people learn foreign languages easier than others, likewise, especially if one is relatively young, some are naturally more prone to learn and acquire the language of addiction.

Conversely, for the elderly population, it is quite difficult to develop an addiction, particularly if one has never before suffered from any other sort of addiction. How easy is it for a sixty-year-old to learn a foreign language, particularly if they’ve never learned one before? In general, it is quite difficult if not impossible to learn a foreign language late in life. The same holds true with addiction. For this reason, one is not to be very concerned about a sixty plus year old developing an opioid use disorder of any significance. This comparison with language acquisition is hopefully helpful in understanding and accepting the clinical realities of preventing and treating addictive disorders.

Furthermore, addiction involves more than withdrawal and tolerance to a substance. Physical dependence as reflected by signs of withdrawal or tolerance almost always occurs in patients who take opiates for more than a week or so and can occur as well with the use of non-addicting substances. Addiction by medical definitions is much more than physical dependence.

The vast majority of patients with moderate to severe opioid use disorders require ongoing agonist therapy (treatment with long acting opioids) for optimal health outcomes. This implies permanent changes to the brain have occurred as a result of having the disease. As a result, many patients with the disease who do not receive adequate agonist therapy could be described as being in a state of chronic withdrawal, often poorly appreciated even by an astute clinician.

Risk factors exist for opioid use disorders. If someone is relatively young at first use, becomes energized with opiate use, has had other addictions, co-morbid mental disorders,

or has experienced abuse or other serious traumas in their life, and has taken opioids regularly (whether prescribed or not) during a 6-12-month period, it is reasonable to treat them as though they have an opioid use disorder. When a patient who was repeatedly exposed to opioids meets several of these “risk” factors, in my experience they nearly always will meet 3 out of the 12 DSM IV criteria. If a patient is envisioning long term opioid therapy for a painful condition and has significant risk factors, it is reasonable to treat them as if they have an opioid use disorder. It is better to prevent the disease from developing and to keep unnecessary complications from arising.

Treatment of Opiate Dependence Aka Opioid Use Disorder under DSM V criteria

Below is a quote from page 10 of Washington State’s Interagency Guideline on Opioid Dosing for Chronic Non-Cancer Pain published in March 2007:

Prognosis is poor for patients with a DSM diagnosis of opioid dependence or opioid abuse who do not receive opioid agonist therapy, such as Methadone or Buprenorphine (Sees 2000, Kakko 2003).

Treatment of opiate dependency with the best outcomes includes medical agonist therapy as well as behavioral care. Abstinence based approaches (no pharmacological support) appear to have long term favorable outcomes only in a minority of patients (perhaps no more than 1 in 20).

However, even in the 5% of cases who maintain an abstinence approach, the question remains: what constitutes optimal outcomes? If one defines “success” of opioid use disorders based simply on abstinence from an opiate, this side steps the question of optimal health outcome. Most rational people would not judge success simply by whether a patient is taking a drug or not. *The most important medical outcomes involve indicators of quality and duration of life!* It is for these reasons a physician prescribes. Simply put, good medicine is more likely to promote health than detract from it.

The level of abstinence from alcohol might be a reasonable and sound marker for a favorable outcome for a patient who has an alcohol use disorder. In contrast, total abstinence from opioids clearly has a poor long-term prognosis in patients who have opioid use disorders. Similarly, a good percentage of patients who are addicted to nicotine will live longer if they are provided lifetime “agonist” therapy with nicotine or nicotine like substances.

With professional medical care. it is essential to do all one can to help patients achieve favorable outcomes regarding whatever disease they are confronting. Optimal health is the sought-out outcome for all diseases especially chronic pain and substance use disorders. These diseases cause much suffering and are associated with high morbidity and mortality. While we do not routinely recommend abstinence based approaches for opioid use disorders, we do take measures to minimize medication use and assure that medicines prescribed are used judiciously and safely.

An abstinence based approach in the context of a serious chronic pain disorder or

complicating psychiatric disorders is even less likely to be associated with good outcomes. While this appears self-evident, many medical colleagues and most addiction professionals continue to routinely encourage abstinence based approaches. While the risks of diversion and abuse are present with agonist therapy, with proper care and monitoring the risks are acceptable compared to the documented benefits. The literature supports that access to effective treatment for opioid use disorders reduces problematic opioid use not only for the individual but for our entire community. Both methadone and buprenorphine have been qualified as “essential medicines” by the World Health Organization(WHO).

It is often difficult for a patient with an OUD to make rational choices regarding the use of agonist therapy. In addition to the lack of insight and judgement associated with addictive disorders, there are social pressures, laws, conditioning, and taboos which most often dominate rational decision making.

One can believe in a loving God and with God’s grace and a host of other contextual factors, an abstinence based approach may and does sometimes “work”. Nonetheless, given the current medical evidence, in patients who meet formal criteria for a moderate to severe opioid use disorder, an abstinence based approach must not be recommended, especially to begin with.

Since perceived “choice” is so highly valued in our culture, services must acknowledge a patient’s right to choose an abstinence approach. If an abstinence approach is elected, one must mitigate the consequences of what professionally is considered a “bad bet”. This approach is consistent with the Hippocratic Oath. Hence, a patient should expect respect from their healthcare team for their decisions, whether or not, their decisions are consistent with physician recommendations for safe and effective treatment. In clinical practice, the challenge for a physician is when what the patient wants, requires their participation, a prescription, or even tacit approval. It is a physician’s professional responsibility to only act in ways consistent with what they believe to be consistent with a likelihood of helping and not harming the patient.

References/Resources

A host of references are available online. We suggest “Google Scholar” and keyword searches to include: *Methadone Maintenance*, *Opioid Dependence*, and *Opioid Treatment*. Also do searches under the authors MJ Kreek, KL Sees, J Kakko and look for related articles.

[National Alliance of Advocates for Buprenorphine Treatment \(NAABT\)](#) is an organization committed to promoting buprenorphine use in opiate dependency.

[Substance Abuse and Mental Health Services Administration \(SAMHSA\)](#)

[American Society of Addictive Medicine](#) is for physicians specializing in addiction medicine.

[Role of Maintenance Treatment in Opioid Dependence](#) - This a scholarly review of the

essential need for Medication Assisted Treatment in the care of opioid use disorders.

[Methadone Maintenance vs 180-Day Psychosocially Enriched Detoxification for Treatment of Opioid Dependence A Randomized Controlled Trial](#), Karen L. Sees, DO; Kevin L. Delucchi, PhD; Carmen Masson, PhD; Amy Rosen, PsyD; H. Westley Clark, MD; Helen Robillard, RN, MSN, MA; Peter Banyas, MD; Sharon M. Hall, PhD; *JAMA*. 2000;283:1303-1310.

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[1-year retention and social function after buprenorphine-assisted relapse prevention treatment for heroin dependence in Sweden: a randomised, placebo-controlled study](#); J Kakko, KD Svanborg, MJ Kreek, M Heilig - *The Lancet*, 2003 - Elsevier

[Buprenorphine maintenance versus placebo or methadone maintenance for opioid dependence](#)

(A Cochrane Review) RP Mattick, J Kimber, C Breen, et al 2008 The link will take you to a reprint of a Cochrane review, prepared and maintained by The Cochrane Collaboration.

6. Medical Uses of Addictive Substances

J. Kimber Rotchford, M.D., M.P.H.

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- B. [Issues Pertinent to Opiates](#)
- C. [Issues With Benzodiazepines](#)
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Introduction

Addictive substances have an essential role in medical care. This is confirmed by extensive research and extensive clinical experience. Addictive substances also have serious side effects; and, when used inappropriately, addictive substances can be fatal.

This brief review is intended to promote safe and effective uses of addictive substances. Principles common to all addictive disorders are shared. Next, a limited discussion specific to commonly prescribed addictive substances is provided.

A. General Principles

Herein there is a repetition and in some cases an elaboration of principles explored in Topic One - Opidemic under the subject: [Basic Understanding of Addiction and Opioid Use Disorders](#)

First is to correct a common misconception. Addiction is not synonymous with physical dependence. Many substances associated with physical dependence are not addictive and there are addictive substances which cause little or no physical dependence. Physical dependence implies that physiological changes have resulted from the repeated use of a substance. These changes may create symptoms of withdrawal when the substance is stopped or reduced. While with some substances withdrawal is a minor concern, other addictive substances are associated with potentially life-threatening withdrawal. Physical dependence is also associated with tolerance. That is over time a greater dose of a substance is required for it to have a similar therapeutic or “high” effect.

All addictive substances have one physiological effect in common: all addictive substances cause a pharmacologically induced release of dopamine in area of the brain described as the reward center. This center is in the front of the brain and it's "main processor" is called the nucleus accumbens. Ups and downs of dopamine in the nucleus accumbens are required for addictive patterns to emerge. Indeed, a flux in dopamine levels appears to be the primary determinant of all forms of higher learning. When dopamine levels are maintained stable as with the use of long acting opioids such as methadone or buprenorphine, addictive patterns are often arrested and are less likely to progress.

Addictions are not a function of simply using a substance over time. As a result of using an addictive substance cues, triggers, and outside factors are part of what is learned. It is the use of a substance based on a "cue" or a "craving" which is a hallmark of a substance use disorder.

Addictions imply dysfunction in areas of the brain which are largely subconscious, such as the activity in the nucleus accumbens. For the most part addictions involve "dysfunction" in broad areas of the limbic system. The limbic system helps us manage our emotions, our relationships, pain, sleep, etc. Because addictive substances strongly influence the limbic system, these substances are commonly used to effectively treat dysfunctions and stress in the limbic system. Addictive substances are a "double edged sword" for while they may help normalize limbic system function, they also can contribute to limbic system dysfunction, particularly with long term use.

Short term use of addictive substances is not commonly associated with the development of addictive patterns. Like most learned behavior repetition over time is the best predictor of a learned behavior. People are more or less vulnerable to become addicted based on genetic as well as past experiences. Cultural variables are still being explored and clearly play an important role.

Addictive disorders are chronic and relapsing disorders and like most chronic diseases the causes are complex and as already stated are associated with genetic as well as environmental variables. A way to help appreciate why a substance use disorder can never be entirely fixed is because it involves memory and human beings have evolved to remember well. Short of developing dementia, most people remember well, even if only on a subconscious level. The "rewards" associated with using an addictive substance are inevitably registered as "important" to a healthy brain. It follows that rather than "forgetting" the patterns of addiction, a better long-term strategy is to learn new patterns of responding to events in our lives.

For example, if one intended to no longer speak English, a good strategy would be to become immersed in learning and speaking only a "foreign" language. As in this example, when just "saying no" to speaking English is unlikely to be most productive in the long run, being abstinent from an addictive substance is alone never the best long-term strategy. Outside input and support is essential for a good prognosis and repetition of any newly learned pattern is most helpful. As in learning a foreign language, independent study is limited in establishing new behaviors associated with the prevention and responses associated with substance use disorders (SUDs). It works so much better to work and talk with others conversant in the language of recovery!

There are significant cultural biases related to addictive substances and their misuse. Despite overwhelming evidence of addictive substance promoting better health, particularly when used in the proper context, there are puritanical, political, financial, as well as the established medical complications that promote abstinence based approaches. It was less than 100 years ago that we in the United States experimented with prohibition regarding alcohol. While most reasonable people would agree that the experiment was a huge failure, prohibition tendencies are very prevalent even amongst well educated people. All substances have risks and benefits and the context in which they are used is so important! The authority and power of the DEA is good example of our American emphasis on prohibition and regulatory control when it comes to substance abuse. There is arguably no other institution currently, or in the past, with such power and authority as the DEA in regulating addictive substances. Despite the DEA's authority and regulatory zeal, abuse of substances is an ever growing and apparent problem within the United States. Substance use disorders, based on lost life and productivity, are our number one public health problem. Tobacco use remains our number one preventable source of death.

The American approach to substance use disorders and mental disorders is wanting. Why would a criminal justice system be the system of choice for managing and treating diseases and their complications? The fact that we have more people in prisons than any other civilized nation is a strong indicator of our denial of mental illness and substance use disorders as being diseases worthy of proper treatment. Our full prisons and criminal justice system also highlights a pathological inclination to address behavioral problems primarily through regulations and punitive approaches.

Another significant cultural bias is toward the “objective” and what can be measured. There are very few biomarkers that allow one to readily diagnose substance use disorders, let alone monitor their progress. If there were ways as with diabetes to measure certain blood levels of compounds etc. to ascertain the seriousness and or progression of SUDs, the response to substance use disorders would likely dramatically improve. Because abstinence is measurable when it comes to most substance use disorders it has become the “default” surrogate marker for a positive outcome. For most substance use disorders abstinence has been shown to be a reliable and helpful surrogate marker for a good prognosis. There are some noteworthy exceptions and the classic example is with the effective care for opioid use disorders using agonist therapy. There are also some patients who are tobacco dependent who live better and longer if they use long term nicotine replacement. Other contextual exceptions are common.

Another common cultural bias is to deny the importance of proper brain function when it comes to human behavior. Unhealthy brains tend to use poor judgment and decision making is compromised. Lack of insight and denial is common. Based on patient preferences, well trained clinicians often make the mistake of prescribing an addictive substance to patients with a clear addictive disorder. They even go a step further to instruct patients to take addictive substances as they feel they “need” to. These clinicians fail to recognize that the patient may not be properly equipped to make good decisions when it comes to using an addictive substance, particularly if they have a history of substance use disorders. These oversights commonly occur despite well appreciated pitfalls associated with self-medicating and addictive substances. There are even laws and professional ethics that proscribe self-prescribing amongst physicians who should know

best. And yet clinicians may give this authority to their patients, some of whom are known to have significant substance use disorders.

Subjective factors have always dominated objective ones. The denial of same is dramatic. Indeed, the emphasis on material and objective factors, to the exclusion of subjective ones, is prevalent. This bias also affects our approach to substance use disorders, for better and for worse.

We find evidence for the bias toward objectivity in many areas of American culture.

Banking and wealth is often determined by “objective” assets. Paradoxically, the denial of the importance of the subjective is manipulated by politicians. Successful politicians recognize that the “truth” and reasonable discourse is less important than the subjective feelings of voters, particularly voters who are frustrated or afraid.

Again, paradoxically, the principles as above outlined are the result of a bias toward the value of the objective. What can be observed and measured in brain function along with the demonstrable pharmacology of substances is important. Indeed, it is important to be able to measure what works. Nonetheless, and paradoxically, current facts do not determine how people believe or choose to behave. Another important principle for appreciating addictions and their care is that paradoxes abound.

Addiction can be appreciated through many lenses. It be a spiritual deficiency, or a psychological, or moral phenomenon. Some might even be offended by the role of statistics and probabilities when it comes to explaining human behavior? From a puritanical and Christian standpoint, one might believe all addictions are simply the result from a lack of trust in God and a willingness to do His will. Atheists can conclude that religion is the opiate of the masses. Perhaps addictions simply reflect a deficiency of religion?

From a psychological standpoint addiction could reflect an unbalanced ego or an inability to process feelings. From certain philosophical views, addictions could be the result of the angst of human existence and the knowledge of our inevitable demise. From an economic standpoint it might all have to do with money and capitalism and how people maintain control over others and themselves. In Chinese Medicine addictions can reflect excessive wood energy (imbalanced Hun) and a paucity of healthy kidney yin.

Indeed, there are many ways to think about addictions and what causes them. There is likely some truth in the different perspectives. The subject of addiction speaks to the larger question of what it is to be human, a question which surely should evoke some humility. Indeed, elements of the addiction processes are intrinsic to human physiology and learning. As above referenced the physiology of healthy and higher forms of learning overlaps with circuits in the brain that are “hijacked” by addictive processes. If we as humans were not so adept at learning and remembering, we would be much less likely to develop addictions. This is a radical concept. If fully appreciated it could radically help promote the public health response I advocate for.

A Rhetorical Question Remains:

What role should facts and evidence play in explaining and treating addiction? As a licensed physician, the answer is to use the best evidence and understanding of human physiology and behavior to develop an effective treatment plan. Unfortunately, more and more of medical therapeutic planning is based on third party coverage and regulatory restrictions.

B. Issues Pertinent to Opiates

The effective management of opioid use disorders highlights the above principles better perhaps than any other SUD? The epidemic of opioid overdoses has caught public attention. In some states the death rate has surpassed that of motor vehicle accidents. Even the Center for Disease Control (CDC) is now involved. Pundits are clamoring to limit the prescribing of opiates and many professionals are advising that patients must be taken off of all chronic opioids unless they are soon to die of cancer. These opinions exist despite overwhelming evidence that opioids in the proper context provide better than any current alternatives, for the best health outcomes.

Based on the principles of addiction it is understandable that methadone and buprenorphine (two modern opioids) have proven efficacy in patients who are addicted to opiates. They are long acting substances and when properly prescribed and used (no self-medicating) there is abundant evidence as to their benefits. They both allow for stable levels of dopamine.

Abstinence approaches with moderate to severe opioid use disorders have poor outcomes. In one formal study in Sweden the mortality was 20% after one year of treatment that included only behavioral support compared to 5% with agonist therapy (methadone or buprenorphine). Regarding morbidity, the evidence we have is that agonist therapy is much more effective than behavioral therapy alone.

Opioids are quite safe for long term use compared to many medications used to treat chronic diseases. Patients can readily live long and productive lives while properly using opioids. There are side effects with opioids and steps to address complications are important. Complications can arise from their abuse, interaction with other substances, hormone disturbances, constipation, and even sleep apnea. Fortunately, there are interventions which can minimize these complications.

There is a tendency in clinical care to use the least number of opiates as possible and to get patients off opiates as soon as possible. When opiates are to be used for short duration (acute illnesses) this approach makes good clinical sense, particularly when safer or as effective alternatives are readily available. With chronic illnesses, however, as in patients with an opioid use disorder, the attachment to have patients entirely off of opioids is dysfunctional. Nonetheless, this attachment is common and is reflected in the research. Current research in opiate use disorders commonly indicate abstinence as an outcome of success. This is quite striking. No other chronic disease has, as a preferred outcome, abstinence. This is particularly true for abstinence from proven effective medical therapy. Why minimize therapy simply for the sake of minimizing therapy? Better health outcomes in context with social values are the objectives.

Abstinence with most substance use disorders is a valuable surrogate marker for healthy long-term outcomes. And it makes sense to not use more insulin or any medicine more than is indicated. Nonetheless, in all other areas of medicine the quality of life (morbidity) and death rates (mortality) are the primary indicators of effective therapy. If a patient can benefit from less insulin or blood pressure medicine because of weight loss, this of course is beneficial. But we agree that it is good not simply because the patient is taking less insulin. We consider it beneficial because the weight loss and need for less medications are associated with better outcomes.

The above peculiarities of how we deal with opioid use disorders is associated with some of the aforementioned “cultural” issues and the lack of biomarkers to evaluate progress in the treatment of substance use disorders.

If there were clear biomarkers that measured “stress” or other indicators of good health in patients in recovery, similar to the markers we have in managing diabetes or hypertension, the emphasis on getting patients off of all medications would likely be tempered.

Most mental problems wax and wane significantly over time. All good clinical measures for mental illnesses as well as SUDs must take this into account. Some patients with opioid use disorders who receive proper behavioral care can do quite well for six months or so while the brain is compensating from the sudden change to abstinence. It is often after some time when relapses occur and then the consequences can be fatal. The consequences due to ongoing chronic stress from “sub-acute” withdrawal is also a major concern when evaluating long term morbidity associated with abstinence based approaches..

C. Issues with Benzodiazepines

There is perhaps no substance use disorder as challenging as those associated with benzodiazepines: (Lorazepam(Ativan), Clonazepam(Clonopin), Diazepam (Valium), Librium (Chlordiazepoxide), etc.) Outside of hospitalization or serious long term behavioral care and gradual tapering, the prognosis is commonly guarded.

The withdrawal from benzodiazepines can be life threatening and best done under professional care.

As with opiate use disorders, co-morbid mental health problems are common and need to be effectively addressed. The combination of opioids and benzodiazepines is especially problematic because the combination is associated with a large number of fatal overdoses. What’s more and commonly pertinent, is that patients who continue to take both tend not to improve. This appears to be true whatever the presenting conditions or symptoms are.

Short term use of benzodiazepines can be very helpful and most appropriate in a number of medical contexts. If one has a history of a substance use disorder, self-medicating, the use of benzodiazepines must be closely monitored and ideally tapered over time.

Benzodiazepines can be particularly problematic for patients who have abused alcohol. There is a significant overlap in the receptors affected by both alcohol and benzodiazepines.

D. Issues with Stimulants

Methamphetamine abuse remains a scourge for many rural communities. Methamphetamine is highly addictive and has been demonstrated to be toxic to brain cells, even over the long run. As with cocaine there is a social element that needs to be appreciated and addressed. It is essential that all patients with SUDs develop a supportive community outside of their fellow abusers. This appears to be especially vital for patients who have methamphetamine use disorders.

When long-acting methylphenidate or amphetamine salts are used to treat ADHD there appears to be very little evidence of abuse or addictive patterns emerging, even in patients at high risk. Nonetheless, all stimulants are considered highly addictive by the FDA & DEA.

E. Issues with Medical Cannabis

Depending on context and how it is used and taken, the addictive and other side effects from cannabis use are minimal compared to most prescribed addictive medications. Regular cannabis use for medical purposes is particularly safe after the brain has matured, after the age of 25 or so. In the larger population who are using cannabis for recreational purposes estimates are that 15% become addicted to it. Physical dependence is present but less apparent than with many other addictive substances. Someone older than 60, who has never had an addictive disorder or other significant mental illness, is highly unlikely to become addicted to cannabis, even if they smoke it which is relatively contraindicated for medical purposes.

For medical purposes, outside of quite rare situations such as acute nausea and vomiting from chemotherapy, there are few indications for smoking cannabis. It is almost always preferable to eat cannabis and to maintain stable levels in the blood. If one regularly “feels” the effects of the dose, it is too high.

Cultural and social attitudes about cannabis tend to be extreme. Some colleagues will never consider it a medicine until it is approved by the FDA. Many effective and useful medications exist and have been used successfully throughout time, well before there was ever an FDA.

There is controversy about dosing and the proper percentages of THC and CBDs in cannabis. Aside from the advice to consume at a dose under which one “feels” it, and the importance of stable levels, particularly when using it long term for a chronic condition, a trial and error approach to dosing and concentrations is indicated.

One may review an entire syllabus on Cannabis at [Medical Cannabis Syllabus](#).

7. *Publications / Resources / Links*

[Publications](#) - a few related and general references available online.

[Handouts & References](#) – 150+ references suggested by Dr. Rotchford

[Websites](#) - hosted by Dr. Rotchford

[Videos](#) - produced by Dr. Rotchford

[APPs](#) - developed by Dr. Rotchford

Publications - recommended by Dr. Rotchford

A host of references are available online. We suggest “Google Scholar” and keyword searches to include: *Methadone Maintenance*, *Opioid Dependence*, and *Opioid Treatment*. Also do searches under the authors MJ Kreek, KL Sees, J Kakko and look for related articles.

[National Alliance of Advocates for Buprenorphine Treatment \(NAABT\)](#) is an organization committed to promoting buprenorphine use in opiate dependency.

[Substance Abuse and Mental Health Services Administration \(SAMHSA\)](#)

[American Society of Addictive Medicine](#) is for physicians specializing in addiction medicine.

[Role of Maintenance Treatment in Opioid Dependence](#) - This a scholarly review of the essential need for Medication Assisted Treatment in the care of opioid use disorders.

[Methadone Maintenance vs 180-Day Psychosocially Enriched Detoxification for Treatment of Opioid Dependence A Randomized Controlled Trial](#), Karen L. Sees, DO; Kevin L. Delucchi, PhD; Carmen Masson, PhD; Amy Rosen, PsyD; H. Westley Clark, MD; Helen Robillard, RN, MSN, MA; Peter Banys, MD; Sharon M. Hall, PhD; *JAMA*. 2000;283:1303-1310.

[Treatment for Opioid Dependence: Quality and Access](#); Bruce J. Rounsaville and Thomas R. Kosten; *JAMA*. 2000;283(10):1337-1339.

[Provision of Methadone Treatment in Primary Care Medical Practices: Review of the Scottish Experience and Implications for US Policy](#); Michael Weinrich and Mary Stuart; *JAMA*. 2000;283(10):1343-1348.

[1-year retention and social function after buprenorphine-assisted relapse prevention treatment for heroin dependence in Sweden: a randomised, placebo-controlled study](#);J Kakko, KD Svanborg, MJ Kreek, M Heilig - The Lancet, 2003 - Elsevier

[Buprenorphine maintenance versus placebo or methadone maintenance for opioid dependence](#)

(A Cochrane Review) RP Mattick, J Kimber, C Breen, et al 2008 The link will take you to a reprint of a Cochrane review, prepared and maintained by The Cochrane Collaboration.

Handouts/References – Resources on All forms of SUDs

More than 150 articles, books, videos and other resources written by or compiled by Dr. Rotchford on topics related to other forms of substance use disorders in addition to opioid use disorders.

1. [Cultural Factors within the United States Promote Substance Use Disorders- A helpful perspective for responding to the opioid misuse epidemic](#)

Websites – Hosted by Dr. Rotchford

[OPAS.us](#) - Dr. Rotchford's Clinic – Olympas Pain and Addiction Services

[DrRotchford.com](#) – about Dr. Rotchford

[DrRotchford.info](#) – Tele-Medicine online access to Dr. Rotchford

[Opidemic.help](#) – Dr. Rotchford's compendium of info on opioid epidemic

[Opioid Docs.com](#) – helpful access to national websites

[NOTE: All websites are accessible by smartphones and tablets]

Videos – produced by Dr. Rotchford

Clinical Topics on Opioid Addiction For Addicts, Friends and Family by Dr. Rotchford

Session 1 - [Introduction to Basic Tools](#) 9:23 min

Session 2 – [Facing Dilemmas in Opioid Addiction](#) 6:57

Session 3 – [Basic Tools in Opioid Addiction](#) 5:46

Session 4 – [How is Cutting Oneself Similar to Opioid Addiction?](#) 12:14

Session 5 – [Shame and Blame](#) 7:33

Session 6 – [Medications for Opioid Addiction - Methadone and Buprenorphine](#) 4:09

Session 7 – [Comorbid Conditions](#) 7:10

Session 8 – [1 2 3 of Recovery Help](#) 11:18

Session 9 – [Probuphine as an Option for Opioid Use Disorders](#) 3:16

Session 10 – [You Can't Always Get What You Want . . . You Get What You Need](#) 4:20

Session 11 – [Naltrexone Use in Opioid Use Disorders](#) 8:09

Session 12 – [Playing Basketball: Opioid Use Disorders](#)

APPs – developed by Dr. Rotchford

[Opioid Doc.com](#) – online and mobile access to helpful resources

[OverdoseAPP.com](#) – APP with practical help for overdose event

About the Author

J. Kimber Rotchford, M.D., M.P.H.

[Dr. Rotchford](#) is a seasoned physician and expert in the medical specialties of Addiction and Pain Management. He has thirty-five years of clinical experience treating patients with Substance Abuse Disorders, especially those suffering from opioid use and abuse. In addition, he has long standing expertise in Public Health and is a Fellow of the American College of Preventive Medicine. Dr. Rotchford is the medical director at [Olympas Pain and Addiction Services](#) located in Port Townsend, Washington.

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