

Tatyana Aksaeva

With Agosto Alexa, Nazrin Akbarova

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NORTHWEST: (Washington, Oregon, Idaho, Wyoming, Montana)

General Background: The prevalence of illegal use or abuse of opioids have been significantly raised in the United States. Increasing numbers are not simply related with parallel population growth – the percentage has been shifted drastically too (Phillips, 2). Scientifically generalized by a term “epidemic” this spread is in fact a bureaucratic-physiological-psychological crisis that has roots interwoven with various external and internal factors. This complicated *crisis* of drug abuse began in the 1990s, believed to be driven by cumulative deaths from prescription opioids that were the direct product of an intense increase in the prescribing of these drugs as a remedy for chronic pain (NIDA, 4). Acceleration was so vigorous that in 2008, the quantity of deaths involving prescription opioids surpassed the total of combined deaths from heroin and cocaine (Centers for Disease Control, 2) Recent studies show that tens of millions of US residents abuse prescribed opioids, sedatives, tranquilizers, and stimulants. Those who are using heroin happen to have a history of misusing prescription opioids in the earlier periods. To classify and quantify the opioid crisis US States were each given a rating of “Making Progress”, “Lagging Behind” or “Failing” based on detailed evaluation of efforts in six following key indicators:

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|---|---|
| 1. <i>Mandatory Prescriber Education</i> | 5. <i>Increased Access to Naloxone (Opioid Antagonist)</i> |
| 2. <i>Opioid Prescribing Guidelines</i> | |
| 3. <i>Eliminating Pill Mills¹</i> | 6. <i>Availability of Opioid Use Disorder (OUD) Treatment</i> |
| 4. <i>Prescription Drug Monitoring Programs</i> | |

States were evaluated on each of these indicators which are critical to effectively and comprehensively fighting this growing “opioid crisis” (See *Figure 1*). Based on this evaluation states Idaho and Oregon, that I have been assigned to research, are Failing with only 1 and 2 indicators (out of 6) met accordingly.

A. REGIONAL PARAMETERS:

IDAHO

The records of drug-induced deaths in Idaho is escalating for the last decade. In 2016, losses instigated by synthetic Opioids, or painkillers, jumped 69 percent in comparison to 2006 (Anuj, 16). The Idaho Department of Health and Welfare states that in the period from 2010 to 2014 approximately half of the accidental drug related deaths in the state of Idaho were overdoses from one or another type of Opioids (Goree, 2). In 2017, there were 119 opioid-related overdose deaths in Idaho—a rate of 7.4 deaths per 100,000 persons—compared to the national rate of 13.3 deaths per 100,000 persons. The number of overdose deaths attributed to specific categories of opioids continue to rise (National Institute on Drug Abuse, 3). From 2012 to 2016 the number of prescription opioid-related deaths increased from 45 to 77 deaths and synthetic opioid (mainly fentanyl) related deaths rose from 11 to 20 deaths (Rudd, 61). The number of heroin-related overdose deaths in Idaho have been available since 2014. Since then, they have risen from 11 to 25 deaths. In 2015, Idaho providers wrote 76.4 opioid prescriptions per 100 persons (approximately

¹

1.3 million prescriptions. In the same year, the average U.S. rate was 70 opioid prescriptions per 100 persons². The major differences between legal painkillers and heroin is that heroin is cheaper, more accessible, and, in most cases, is significantly stronger – it becomes an easier habit to support. This is just as true in Idaho as it is across the nation. The price of one oxycodone tablet in Nampa can run as high as \$50 while a dose of heroin is typically \$30 or less (Amand, Part 1).

From 2005 to 2015, the drug-induced mortality rate did not differ significantly by sex for Idaho residents. The aggregate drug-induced mortality rate was 12.0 per 100,000 females (95% CI: 11.2-12.8) compared with 12.3 per 100,000 males (95% CI: 11.6-13.1). The drug-induced mortality rate differed significantly between Idaho residents and the United States for both males and females from 2005 to 2015. Further, the mortality rate increased more rapidly for Idaho resident females (0.79 deaths per 100,000 females per year) compared with males (0.56 deaths per 100,000 males per year). From 2011-2015, the highest drug-induced mortality rate was for Idaho residents ages 45-54, followed by those ages 35-44. Further, those ages 35-44 had the most rapid rate increase, increasing almost 7% per year (Center for Disease Control, 8).

Statistics on which drugs have been generally used in Idaho during last decade are classified into Opioids and non-Opioids:

Opioids:	Non-Opioids:	
<i>Natural and semisynthetic opioids</i>	<i>Antidepressants</i>	<i>Antibiotics, antiparasitics, antagonists, non-opioid analgesics</i>
<i>Synthetic opioids other than methadone</i>	<i>Benzodiazepines</i>	<i>Psychostimulants with abuse potential</i>
<i>Methadone</i>	<i>Anesthetics, antiepileptics, sedative-hypnotics</i>	<i>Cocaine</i>
<i>Heroin</i>	<i>Psychotropic</i>	<i>Other non-opioids</i>

² <https://www.unmc.edu/cce/handouts/opioid/OpioidMasterList-CompleteDoc.pdf>

There are numerous treatment centers in Idaho that help clients with substance abuse issues, drug abuse, and pain treatment, as well as eating disorders. Treatment centers generally offer 30-day recovery programs, or longer term 60 and 90-day programs. The first step when you arrive in treatment is to begin a drug detox. Medical professionals monitor your detox program to make sure that your detox is safe and appropriate. The second step at most treatment centers is to begin therapy, either in groups or individually. Most Idaho treatment centers for drug abuse emphasize this step as the beginning of the road to recovery. Successful treatment also includes a plan for when you leave your treatment center. According to reviews and ratings the most prominent centers in Idaho are: Idaho Addiction Treatment Center³, APEX Recovery Rehab⁴ and The Recovery Village Ridgefield⁵.

In 2017, Idaho received a federal grant to elevate social awareness and launch a special prescription drug abuse treatment program called *Idaho Response to the Opioid Crisis (IROC)*. IROC is providing anti-overdose reversal drug labeled *Naloxone*. As a part of IROC program Physicians, Dentists and Nurses are being guided on new CDC rules for prescribing Opioids and alternative pain treatments. "The prescribers that we are educating we are trying to make sure that they understand that if possible to not prescribe Opioids. Sometimes other pain medications are just as effective," says Dr. Christine Hahn, active IROC member and Medical Director of Idaho Division of Public Health.

OREGON

The State of Oregon, similar to the rest of the US, is undergoing an opioid crisis, including misuse, abuse, overdose and death. This crisis involves both prescription opioid pain medications, as well as

³ <https://www.rehab.com/renaissance-ranch/5599838-r>

⁴ <https://apex.rehab/>

⁵ <https://www.ridgefieldrecovery.com/>

illicit opioids such as heroin and non-pharmaceutical fentanyl. Oregon has one of the highest rates of misuse of prescription opioids in the nation. An average of five Oregonians die every week from opioid overdose. Heroin contributes to a significant number of overdose deaths, and illicit fentanyl-related deaths are increasing dramatically. Many overdose deaths involve multiple drugs, including both pharmaceutical and illicit opioids. Many more Oregonians develop opioid use disorder and/or dependency.

In 2016, there were 312 opioid-related overdose deaths in Oregon—a rate of 7.6 deaths per 100,000 persons—compared to the national rate of 13.3 deaths per 100,000. The number of heroin- and synthetic opioid-related overdose deaths has remained relatively unchanged since 2013 (See *Figure 3*). In 2015, Oregon providers wrote 78.1 opioid prescriptions per 100 persons (3.1 million prescriptions). In the same year, the average U.S. rate was 70 opioid prescriptions per 100 persons (See *Figure 4*). In 2014 the association called Oregon Pain Guidance (OPG) designed specific guidelines in response to the alarming intensification of opioid overdose deaths in Oregon state and the need for a standard of care for the treatment of chronic pain. Each year overdoses claim scores of citizens' lives, and the fact is the majority of these deaths are related to the misuse of medications that have been prescribed by healthcare providers (Dowell, 315). The detailed guidelines can be accessed via link provided in footnote⁶.

The list of drugs of abuse that are prevailing in Oregon state are as follows (Johnson, 2). Alcohol, meth, ecstasy, marijuana, cocaine, crack, vicodin, lortab, borco, oxycodone, percocet, codeine, morphine, ambien, klonopin, valium, and xanax.

Substance abuse death and dependency in Oregon highlights a heartbreaking struggle in an area of extremely high drug trafficking rates. The good news is that residents of all ages can find a way out.

⁶ http://www.oregonpainguidance.org/wp-content/uploads/2014/04/OPG_Guidelines.pdf

While Oregon offers many in-state treatment centers that offer inpatient and outpatient service, many addicts need a completely fresh start to break the cycle and overcome their dependencies once and for all. Most prominent treatment centers are Addictions Recovery Oregon⁷, DePaul Treatment Center⁸ and LifeWorks Northwest⁹

The Oregon Health Authority goals to decrease the affliction of opioid misuse and abuse through following strategies:

Supporting safe and effective non-opioid pain management

Increasing access to medication-assisted treatment (MAT) and naloxone rescue

Decreasing the number of pills in circulation through appropriate prescribing

Collecting and reporting data to inform policy

Oregon is considering stopping coverage for opioid painkillers for people with chronic pain who use the state's Medicaid plans, STAT News reports. Officials hope to curb overdoses that they think are caused by the over prescription of such drugs to chronic pain patients, Dana Hargunani, chief medical officer for the Oregon Health Authority, told STAT. If the plan passes, Oregon would be the first state to take this step. The proposal is a sign of how quickly medical and political opinion have turned against opioids. Just two years ago, a Centers for Disease Control and Prevention guideline suggesting that doctors consider capping the opioid dosage they prescribe for people with chronic pain was considered controversial (Diep, 1).

WASHINGTON

In Washington state, drug abuse is extremely critical, with mortality rates on the rise. Synthetic opioids such as heroin and stimulant drugs like methamphetamine are the most commonly abused

⁷ <https://www.addictionsrecovery.org/>

⁸ <https://depaultreatmentcenters.org/>

⁹ <https://www.lifeworksnw.org/what-we-do/addiction/>

drugs in the state. In the past years, although heroin notably continues to be the number one drug of abuse, methamphetamine has been the most frequently used prescription drug being called in by victims to help lines. Methamphetamine, also known as 'crystal meth', is a man made CNS stimulant in which influences the levels of neurotransmitters, dopamine and norepinephrine in the brain. Its mode of action involves the reuptake of dopamine, norepinephrine and serotonin and includes blocking the metabolism of both dopamine and norepinephrine. It is a drug that's route of administration includes intravenous injection, oral ingestion, or through nasal membranes. Common street names are, '*meth, crank, chalk, speed, ice, and/or glass*'. (What Is Methamphetamine? What Is Crystal Meth? How Is Meth Used). It is classified to be in the schedule II controlled substances category expressing its ability of high potential for abuse and high psychological/physical dependence.

Methamphetamine is being used as a recreational drug worldwide, and in Washington it is the second highest drug of overdose incident. Legally methamphetamine is approved medically to suppress appetite and treat narcolepsy, obesity and ADHD disorder (Terminology and Information on Drugs). Behavioral effects of methamphetamine involves euphoria, energy, alertness and wakefulness. Experiments performed on animals show chronic use of methamphetamine causes damage to dopamine neurons. Research has also indicated that long term use of methamphetamine may potentially cause a massive increase of neuron death. Long term effects include, memory loss, problem solving deficits, cognitive dysfunctions and severe psychological and physical dependence. Oral health problems include xerostomia, bruxism and severe tooth decay leading to tooth loss. Brand names of methamphetamine contain, Adderall® and Desoxyn®. The generic names of these brands include dextroamphetamine and amphetamine. Side effects of using methamphetamine includes headache, dizziness, constipation and unusual taste. Adverse reactions involve

hallucinations, delusions, blurred vision, trembling/shaking and panic feeling. Methamphetamine is highly addictive, researchers suggest that the first time using it can create initial addiction. When the drug is stopped from being taken into the body, withdrawal signs include, cravings for the drug, psychosis, severe depression and anxiety.

Methamphetamine mortality rates maintained steady from 2003-2011 at 20 deaths per year, but rose in 2015 at 86 total numbers of deaths in Washington. According to the 'University of Washington Alcohol and Drug Abuse Institute', there has been a significant increase of deaths since 1997 from an average of 50 deaths to over 314 deaths due to heroin overdose. Majority of heroin abusers were indicated to be at an age range of 15-29. Heroin admission treatments have steadily increased since 2015, according to the 'University of Washington Alcohol and Drug Abuse Institute', it was reported that, "58% of treatment admissions were for males, 66% were white, and 30% reported their secondary drug was methamphetamine. Among those surveyed at syringe exchange, 89% reported using heroin by itself in 2015, statistically unchanged from 2011 and 2013 and 21% reported using with cocaine, a significant decline, and 37% with methamphetamine a significant increase" (Washington Opioid Summary). Hospital admissions for heroin use decreased from 11% in 1999 to 7% in 2007. Then in 2013 heroin use increased steadily to 20%. As for methamphetamine use, adult admissions increased from 12% in 1999 to 22% in 2006 and remained between 14%-20% ever since (Drugs and Overdose).

Heroin is processed from morphine and derives from a class of drugs called opiates. Opiates have the ability to block pain and send feelings of euphoria to the brain. The brain consists of opiate receptors in which heroin acts as an agonist and binds to those receptors. It increases the activity of dopamine, a neurotransmitter. When heroin binds to these receptors, they prevent the release of

GABA neuron signals to the dopamine neurons. Heroin is classified as a schedule II drug due to its severe potential for physical and psychological abuse and no approval for medical use.

Short term effects of heroin include, a feeling of a 'rush', suppressed pain, and decreased cardiac function such as slowing down of heart rate breathing. Long term effects include, addiction, tolerance to the drug in which more and more of the drug is needed to produce the same effects, bacterial infections and viral infectious diseases such as HIV and Hepatitis B and C. Adverse reactions of heroin use consists of overdose, difficulty breathing, miosis, hypotension, mental disorientation, coma, bluish nails, discolored tongue and drowsiness (The Physical Effects & Dangers of Heroin Use). Heroin is an illicit drug in the U.S, in which is forbidden by law to be used, however it is sold illegally in the U.S. In United Kingdom, heroin is accepted for medical use and it's generic name is diamorphine. Heroin's route of administration is by intravenous injection, nasal membranes or smoked. Street names for heroin include, '*big H, brown sugar, hell dust, horse and junk*'. It's point of entry is from Mexico and California, Mexican criminal groups are the dominant distributors and distribution starts in Seattle and Yakima and then it is distributed to neighboring states.

In 2017, it was reported that over 45,000 Americans nationwide died from drug abuse overdose. In Washington, the number of deaths have doubled since 2015. According to the Department of Health, the rate of overdose deaths are higher in males than females in all age groups and for both genders the average age group is between 45-54 years old ((Drug Abuse and Overdose).

Socioeconomic factors play a massive role in the significance of mortality rates because many who are not educated have a higher risk of overdose due to their incompetence of the drug's toxicity levels. National Institute of Drug Abuse reports, "According to the US Department of Health and Human Services, people on Medicaid are more likely to be prescribed opioids, at higher doses, and

for longer durations—increasing their risk for addiction and its associated consequences.”

(Addressing the Opioid Crisis Means Confronting Socioeconomic Disparities). Many suggest that the opioid crisis revolves around poverty and it's poorest regions because their addiction comes from written prescriptions by their medical doctors. During the year 2015, Washington health care providers wrote over 70 opioid prescriptions per 100 people. Once the addiction persists, it's difficult to control and stop the abuse. It was suggested that those who lived in neighborhoods with over 20% of poverty had significantly higher death rates of opioid abuse than those living in communities of less than 15% of poverty.

There are many ways to approach treatment for drug abuse and dependence such as public programs, self help and medication. Medical assistance therapies exchange the use of opioids like heroin to prescribed drugs such as methadone and buprenorphine to replace heroin abuse. Experts believe that cognitive behavioral therapies have the best outcomes for abusers, in which they learn how to cope with their abuse and learn strategies in how to maintain above the influence.

In 2016, Governor Jay Inslee signed 'executive Order 16-09, Addressing the Opioid Use Public Health Crisis' to implement strategies to help reduce the opioid epidemic. This order 16-09 includes a Washington state opioid response plan that has worked on four priority goals to stop opioid abuse. The four goals include, “1. Prevent opioid misuse and abuse 2. Identify and treat opioid use disorder 3. Reduce morbidity and mortality from opioid use disorder 4. Use data and information to detect opioid misuse/abuse, monitor morbidity and mortality, and evaluate interventions” (2018 Washington Opioid Response Plan). These plans are implemented to prevent individuals from drug abuse and overdose. With this plan being effective, Washington state overdose mortality rates may potentially be reduced outstandingly. Dr. Francis Collins, Senate Committee and National Institute

of Drug Abuse have also built strategies in 2017 to improve access to treatment, prevention and recovery and increase the importance of understanding pain and addiction.

The medical community response to opioid abuse is associated with using three medications to treat opioid addiction. The three medications include methadone, buprenorphine, and naltrexone that are substituted for opioid abuse to help patients stop misusing opioid drugs. The local communities response to these overdoses is to increase the access for healthcare and treatment, as well as the use of naloxone. Naloxone is a reverse overdose drug that is easy and safe to use. It is the first line drug used by emergency responders to prevent or stop an overdose from occurring. Many healthcare publications suggest that naloxone aids in saving lives and should be thought of as an epipen or CPR. The media believes that providing easy access to this medication can help reduce the overall overdose death rates. Dr. Neha Sullivan, Assistant Medical Director at D.C. Fire and Emergency Medical Services suggest that if we keep individuals alive they have the chance and ability to get help and treatment (How the D.C. Region Is Responding to the Opioid Crisis).

WYOMING

Mostly abused drug in Wyoming states is marijuana, following by stimulants (including methamphetamine), opioids and cocaine at the low levels. Opioids include both illegal and legal substances, as an example, heroin is illegal opioid and prescribed pain killers can be legal. Using prescribed medications for the purpose of getting high is what is called prescription drug abuse.

According to the Wyoming Department of Health, most common painkillers opioids are:

Morphine: Schedule IIN Kadian®, Avinza®, street name: M, Miss Emma, Monkey. Usually used before and after surgical procedure to severe pain management.

Codeine: Schedule IIN Captain Cody, Cody, Lean. Can relief severe cough as well as pain-reliever.

Methadone: Schedule IIN Methadose®, Dolophine®; Street Names: Fizzies, Amidone, Chocolate

Chip Cookies **Oxycodone:** Schedule IIN also known as OxyContin®, Percodan®, Percocet®, street

names: O.C, Oxy, **Oxycet.** Usually prescribed for moderate to severe pain. **Hydrocodone:**

Schedule IIN known as Vicodin®, Lortab®, Norco®, street name: Vikes, Watson-387

Fentanyl: Schedule IIN (also known as Duragesic®, Fentora®), street names: China girl, China white, Dance fever, Friend.

Diazepam : Schedule III (also known as Valium), street names: Moggies, Vallies, Jellies, Eggs, Blues

Marijuana: Schedule I, also known as Weed, Pot, Grass, Dope

Methamphetamine: Schedule II, street names: Crank, Crystal, Ice, Speed

Opioids work by binding to the mu, delta and kappa opioid receptors within and outside the nervous system. Common side effects are constipation, nausea and dyspepsia. Marijuana's main sites of action are in the brain and the spinal cord. It binds to G-protein-coupled receptors, CB1 and CB2. Having antagonistic effects on the CB1 receptor, marijuana provokes its mental and behavioral effects. Binding to the CB1 receptor, marijuana changes mood, affects memory, learning skills. Other effects of marijuana include psychosis, loss of time perception, impairment in movement coordination. Some of the adverse reactions are: increased heart rate, lungs problems, nausea and vomiting, depression, anxiety. The main action of methamphetamine in the brain is to elevate the levels of extracellular monoamine neurotransmitters, like dopamine, serotonin, norepinephrine, through promotion of their release. Methamphetamine withdrawal effect include nausea, vomiting, irregular sleep, uncontrolled shaking, fever, chills, might be seizures. According to the U.S Department of Homeland security report for 2016, Southwest Border remained the main entry point for all drugs: 98% of thee marijuana, 96% of the methamphetamine, 83% of heroin and 44% of

cocaine. They transport illegal drugs to Wyoming mainly through the interstate highway system and commercial air package delivery services.

As today, there are 44 states including Wyoming that legalized marijuana for medical use only.

Washington, Oregon, Colorado, Nevada, California are recreational legalized states. Marijuana is widely abused in Wyoming and legal trade in the neighboring states made it easier to access.

Methamphetamine is a drug of choice in Wyoming and is the most significant abused substance.

The majority of methamphetamine coming to United States originates in Mexico. SouthWest Border accounted for 96 percent (75,509 kg of 78,826 kg) of the methamphetamine between 2011 and 2016. Another available type of methamphetamine is produced in California by Mexican criminal groups. High-purity methamphetamine is also produced in small quantities in Wyoming.

Cocaine abuse in Wyoming remains stable at low levels when compared with national rate.

Fentanyl often imported from China. China is significant source and the way of moving it to the United States by two sources: SouthWest Border moves by Mexican criminal organizations, or by mail shipments by small criminal groups.

Wyoming is one of the largest and least populated state in the nation with more than 100,000 square miles of rugged land and fewer than 573,720 residents. Median age is 37.2 and a median household income of \$59882, 4 % unemployment rate. Majority of the state economy is concentrated in: agriculture, energy and nature tourism. The main agricultural products produced in Wyoming include livestock (beef), hay, sugar beets, grain (wheat and barley), and wool. More than 91% of land in Wyoming is classified as rural.

In 2016, according to Wyoming Opioid Summary, there were 50 opioid-related overdose deaths, making an average rate of 8.7 deaths per 100,000 persons. It is considering low when compared to the national rate of 13.3 deaths per 100,000. CDC statistics for 2015 shows that Wyoming providers

wrote 65.3 opioid prescriptions per 100 persons (making a total of 383,000 prescriptions). In the same year, the average U.S. rate was 70 opioid prescriptions per 100 persons (Wyoming Opioid Summary, 2018). Over time, Wyoming's self-reported nonmedical prescription pain reliever use has varied from 3% to 5%, with 2013-2014 seeing the lowest reported use at 3%.

According to the Wyoming survey and analysis center, published in March 2018, young adults ages 18 to 25 in consistently endorse the highest rates of past year nonmedical prescription pain reliever use in comparison to other age groups. The Wyoming Prevention Needs Assessment (PNA) inquired students about their 30-day misuse (use of prescription drugs in order to get high). Data analysis showed that past 30-day prescription drug misuse decreases among 10th and 12th graders in the state of Wyoming. In most years, past 30-day prescription drug use was more common among black and Native American students compared with white and Hispanic students.

According to Wyoming survey and analysis center for 2016, data show that the rate of drug poisonings in Wyoming are stable on 7.3 deaths for 100,000 population. When the national level continues to increase at 10.4 deaths for 100,000 populations. Also, Wyoming's opioid prescribing rate is 711 prescriptions dispensed per 1000 people, is slightly above the national average at 665 prescriptions per 1000 individuals. Wyoming is consistently below the national average in distributed morphine milligram equivalent doses per capita at 761mg, while nation average is 845 mg.

According to the Opioids Abuse prevention, one of the reasons for the drugs overuse is availability of the prescription drugs. This way, utilizing the drugs that are no longer needed would decrease the attempt for misuse. Wyoming Department of Health created a donation program which accepts donations of prescription medications and offers them to those in need. Drug disposal boxes were installed in each county. As the result, since 2007, the program saved over \$12.5 million worth in prescription medicines. Only in 2016 WMDP offered over \$2.4million of donated prescription

medications free of charge and prevented them from illegal sale. It doesn't only save the money, reducing the risk of overdosing or abusing the substances, but also protects from accidental use by children.

In 2016, the program of overdose prevention developed by the Wyoming Department of Health was awarded the Grant to Prevent Prescription Drug/Opioid Overdose-Related Deaths (PDO) by SAMHSA and the Center for Disease Control and Prevention (CDC). One of the measures of the intervention is distribution of naloxone around the state. Naloxon (narcan) allows to reverse the effects of opioids rapidly, can be used as injection or nasal spray. Normally, Naloxone has to be prescribed by a physician but a Wyoming law (Wyoming §§ 35-4-901 through 35-5-906) allows pharmacists to prescribe it to the residents (Opioid Overdose Response, n.d.).

MONTANA

Marijuana accounts for 57% of drug abuse in 2015, with methamphetamine at 31% following prescribed opioids. Fentanyl and carfentanil, its analogue overdoses are often being recorded recently.

Fentanyl: Schedule IIN (also known as Duragesic®, Fentora®), street names: China girl, China white, Dance fever, Friend.

Carfentanil: Schedule II, also known as C50, Drop Dead, Serial Killer. An opioid drug similar to fentanyl, but has 100 times more potency than fentanyl and 10000 stronger than morphine.

Marijuana: Schedule I, also known as Weed, Pot, Grass, Dope

Methamphetamine: Schedule II, street names: Crank, Crystal, Ice, Speed

Carfentanil doesn't have approved human use, it only has restriction for veterinarians.

Most of it being sold on the streets is illegally imported from the China. Until March 1, when China added it to the list of controlled substances, China was able to sell it online. The main source of Montana's drug supply as methamphetamine and cocaine is Canada. Montana's geographic

including mountains, forests and grasslands giving great opportunities to grow marijuana without being noticed. There are two primary ways marijuana is illegally cultivated in Montana:

Indoor cultivation: Under Montana's medical marijuana law, it is allowed the at-home cultivation of up to six mature plants and 12 seedlings.

Outdoor cultivation: Controlled by drug traffic organization located on the public lands.

Once the marijuana is ready for distribution, it's going out at the retail level to residents.

According to the 2018 data, the averaged population of Montana is 1.06 million with land mass of 145,552.43 square miles. What makes for every square mile of land an average of just 6.86 people (2.65 per square kilometer) Montana has one of the highest Native American populations in the US, with about 66,000 people of Native American heritage.

The median age in Montana is 39.8 years of age. The ratio of females to males is approximately 49.7% females to 50.3% males.

According to statistics of Montana Department of Justice for 2017, one in five high school students reported current marijuana use (19.5%), 16% abused prescription drugs in evener in their life. Data is almost similar regarding the adults. According to the 2012-2013 National Survey on Drug Use and Health, 25 percent young adults reported illegal drug use within the last month, 23% of young adults reported currently using marijuana, 9% reported non-medical use of pain relievers (Substance Use in Montana, 2017).

Montana consider to have the lowest rate of opioid related overdose deaths. In 2016, just 42 cases were reported in more than a decade, which makes to 4.2 deaths per 100,000 persons. Comparing to the national rate, which is 13.3 deaths per 100,000 persons.

According to the Montana Opioid Summary for 2018, this state provided 90 opioid prescriptions per 100 persons, which makes it around 722,011 prescriptions. It is higher in comparison with average national rate, which is 70 opioid prescriptions per 100 persons.

Government took actions by approving Prescription Drug Monitoring Program in 2011, became available in November 2012. It gives opportunity to identify potential abused substances, offers ability to search in a patient medical history for controlled substance prescriptions. In 2016 Montana, one of the thirteen states received funds for Data-Driven Prevention Initiative (DDPI). Congress awarded \$70 million on the first year. This program will help to improve data, develop strategies, work with communities in order to end the overdose endemic in the United States.

GRAPHS & TABLES:

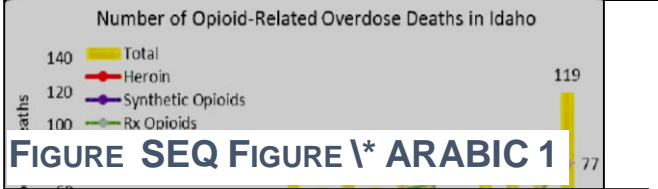
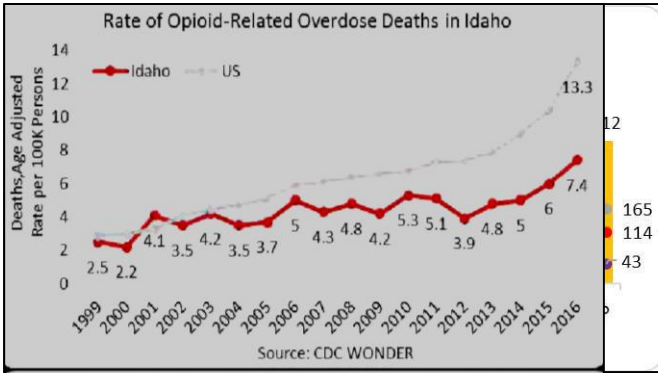
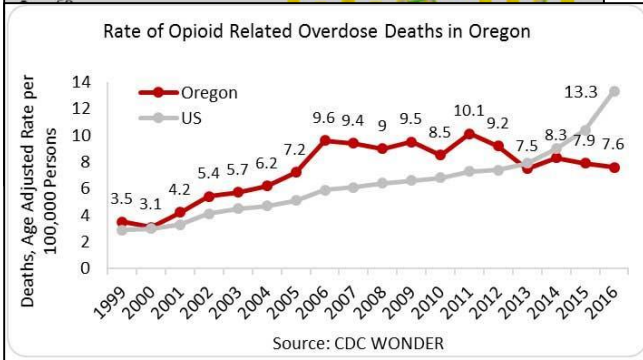
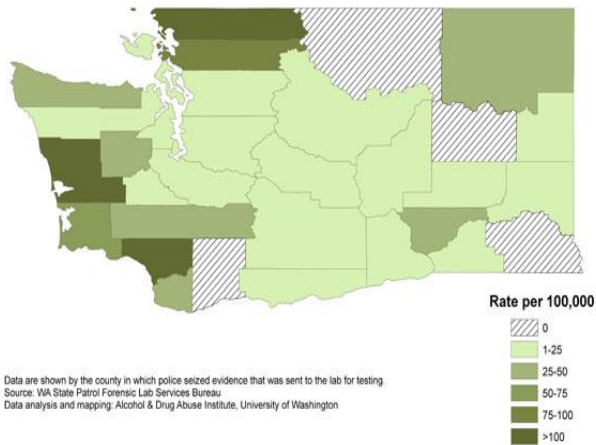


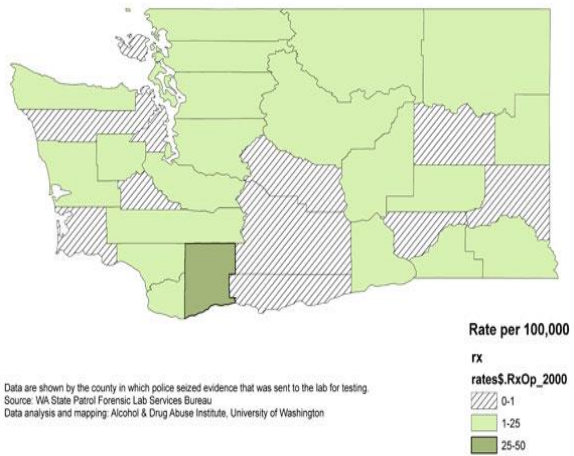
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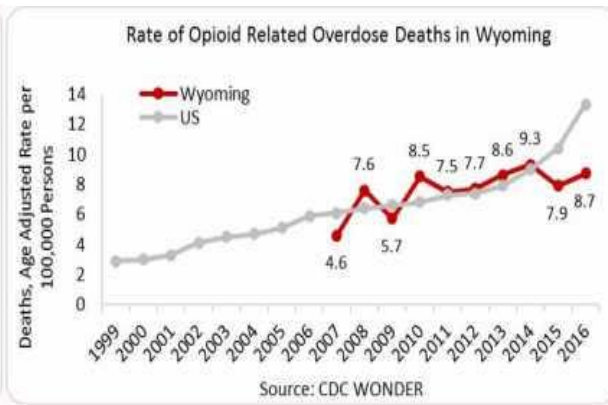
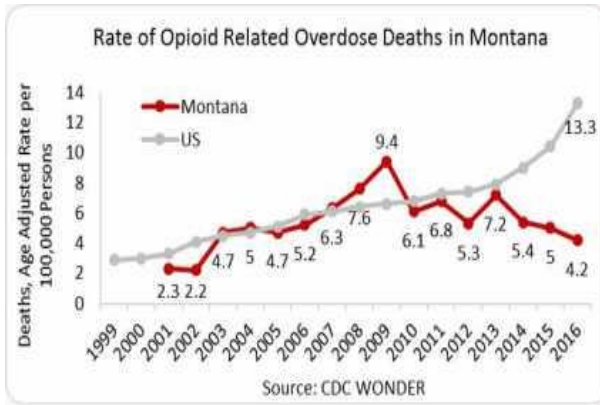


Police Evidence: Heroin 2009



Police Evidence: Prescription-Type Opiates 2000





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PART B: IMPACT STORY

Sadly to say, but this story didn't give any impact on society back fourteen years ago.

It remained as a one of the fourteen incidents happened that year. The young man from Wyoming overdosed with prescription drugs being only 23 years old. He was not alone and his mother did not give up on him but even being a healthcare professional she could not do a lot. The man was addicted already as a teenager being only 14, and found himself at the rehab for the first time at the age of 15. The recidivism was caused by prescription medicine prescribed by the dentist when his wisdom tooth was pulled. Then he needed other teeth pulled and despite the precautions of his mother, he received another recipe for opioid painkillers. This moment touched me the most. In my opinion, the main concern about prescribing opioids, should be safe use, keeping in mind that it can have addictive effect. Especially if the patient has a history of abuse. I'm not sure if it was doctor's neglect or lack of education on handling with opioids prescription, but it played significant role in this particular case.

His mother tried to find him a bed in the rehab center in Wyoming, but unfortunately there are only 8 rehab centers in the whole state. He died 3 days after discharging from the rehab in South Dakota. Even though it happened 14 years ago, the situation with medical providers is not much better. The amount of the rehab centers also cannot fulfill the state's needs until now. And it happens despite the fact that Wyoming is seeing a rise in opioid addiction and overdoses. It is sad, with high prevalence of people suffering from drug, tobacco and alcohol abuse, many people who live in the rural areas don't have access to the rehab centers. People have to face another problem as waiting lists: there's not enough available space for patients who needs the treatment. Having that said, even those willing to

quit, come home and are immersed in the atmosphere of abuse, and this is why the efficiency rate of these programs is not high. Fortunately, change in education had occurred. Even though the opioid abuse level is much less in Wyoming than the national, the state is trying to prevent the problem earlier by creating prevention coalition, supplying healthcare providers with Naloxone.

Part C. Suppose you practice in a region where most of your patients are known to abuse drugs. Describe the impact drug abuse has on the following:

- a. History taking, patient accuracy
- b. Patient communication
- c. Treatment planning
- d. Direct clinical care

Any patient we are seeing in a practice or clinic can be abusing, or have a history of abusing drugs. Some people feeling not necessarily or embarrassed to disclose this sensitive information in a medical history or during an interview. They won't consider it seriously enough to be revealed. Very important to establish friendly environment and trustful relationships, to reassure confidentiality in order to obtain more accurate and complete information.

That's the main reason, why we as a dental hygienist should recognize patients by physical changes or social behavior. In general, patients abusing stimulants can appear irritable, aggressive, drowsy or confused, they might have signs of euphoria. Slowed breathing,

constricted pupils or constipation can be noticeable as well. In the medical history could be multiple pain management drug allergy reported. During communication, the conversation should be friendly. Patient needs to feel confident in his privacy: he won't be reported to the police, either would be judged by hygienist or dentist. We should explain how substances can affect the teeth and mouth in general, the ways to improve or restore it.

During planning the treatment and clinical care, it is necessary to keep in mind that plan might be modified due to physical or emotional limitations patient might have. Patient could be late or absent, or under substance influence and have behavior problems. In some cases, the referral to the physician or counselor might be helpful. Patient, under substance's influence can be contraindicated for local anesthesia or subgingival oraqix application due to vasoconstriction which can increase the cardiovascular risks. Some patients have to receive antibiotic premeditation, if there is an additional medical condition. Original antiseptic mouthwash is contraindicated for alcohol abused population. Neutral fluoride application should have preference to acidulated, if patient presents with compromised dentition.

What do you believe the role of the hygienist is in the following areas:

- a. Self-education on regional drugs
- b. Advising/educating patient on abuse
- c. Remaining current on abuse trends
- d. Ability to identify intraoral markers of drug use

Nowadays, substances are being abused are increasing and being genetically modified.

Drugs and substances can differ from state to state, depending on availability,

socioeconomic status. The best way of keeping up with it is a self-study and remain knowledgeable in this field. Terminology or street names, mode of action, pharmacologic effect, the way it can interact with oral and overall health, individuals who can be at risk of abusing those substances: all this information is helpful to stay educated. But the most important is to recognize complications and be able to manage it the chair side, educate the patients as well and give a referral to proper specialists.

Even the drug abuse is still a big problem among young people and adults, there are some options we can do to help in preventing using illegal substances. Education is the big one. More young people would start to realize how dangerous it is, there's more chance for them to stop it. Many teens don't understand that addiction can become from the first use. We can educate them on what addiction is, the signs and where and how to look for the help as well as effect on the teeth and oral health.

Unfortunately, as one drug becomes unpopular, there's another new and dangerous one takes place. That's why it is important to be familiar with new abused trends in order to be successful with fighting it. The best way of doing it is to focus on parents and medical professionals.

Ability to recognize changes in the oral health and oral pathologies, caused by abused substances is significant. Drug induced xerostomia is one of them, which is suppression or decreases in production of salivary gland. It can lead to rampant caries, tooth enamel loss or erosion, burning mouth feeling or change in taste. Oral mucosa usually becomes affected and appeared as ulcerations, atrophy and dysplasia. Poor oral hygiene can lead to periodontal diseases. Another condition related to opioid addiction is bruxism and candidiasis. But necessary to keep in mind that some conditions have high prevalence to

lead to oral cancer. We, as a Dental Hygienists, can help patients by identifying abusing substances intakes, providing appropriate conversation and dental hygiene therapy.