Janeth Rud

Santos and Tejada-Ferreira.

DEN 2315 Pharmacology

Fall, December 3, 2018

MID-ATLANTIC#2 (Virginia, West Virginia, Maryland, and Washington D.C.)

A. REGIONAL PARAMETERS

According to the *National Institute of Drug Abuse*, approximately 72,000 deaths related to drug overdose occurred in 2017 in the United States of America. 30,000 of those deaths were due to synthetic opioid (fentanyl) overdose. Over the last ten years, the rise of opioid abuse has increased amongst adults, and children; as young as 12 years old (Bose, Hedden, Lipari, & Park-Lee, 2016). The disorder can be correlated to restrictions not being implemented enough by pharmaceutical companies, and the underlying influence the black trade market has over the United States economy and law enforcement (United States Sentencing Commission, 2017). It's evident that the United States of America is facing a serious issue, but before one can solve the issue; one must be informed where the problem is most prevalent and compare the opioid abuse to the national average. The following will discuss and evaluate the rise in opioid abuse in Virginia, West Virginia, Maryland, and Washington D.C.

The mid-Atlantic drug abuse is extensive, it includes: cocaine (cocaine HCL brand name: Roxane; common street names: Coke, Pearl and Snow; schedule I), cannabis/marijuana (synthetic marijuana brand name: K2; common street names: Mary Jane, Mota, Pot, and Weed; schedule I),

and methamphetamine (brand name: Desoxyn, common street names: Chalk, Crystal, and Meth). In the article, "Drug Overdose Tops 1,400 in Virginia in 2016" by Patricia Sullivan states, "...The most deadly combination in 2016 was a mixture of fentanyl and heroin. Kathrin Hobron, Virginia's forensic epidemiologist, said dealer spiked heroin with cheaper fentanyl and fentanyl analogs, or in some cases sold heroin users fentanyl but described it as heroin." In essence, the blend of fentanyl and heroin increased mortality with regards to opioid overdose in Virginia.

Common illegal schedule I drugs in the mid-Atlantic region are heroin and marijuana. Prescription drugs are the preferred drugs of abuse by young people in affluent suburbs. Few people may start with prescription drugs, and then move on to illegal drug abuse. For example, common legal schedule II drugs consist of OxyContin, Ritalin, Adderall, and methadone ("Title 54.1.Professions and Occupations"). The socioeconomic status of most mid-Atlantic drug abuse consumers is unemployed, along with lower levels of education. In West Virginia heavy manual labor has been correlated to the high abuse rate of opioids. The working class is more often prescribed with opioid painkillers. In essence, this creates a higher probability of dependency for those within that socioeconomic range, due to the drugs being utilized classification.

The mid-Atlantic region has experienced augmentation of those dependent on drugs over the past several decades. The demographic has altered for the worst. Children as young as 12 years old are more likely to abuse drugs over alcohol (Biennial Report on Substance Abuse Services, 2015). Furthermore, heroin use is increasing among young adult ages 18 to 25 (Biennial Report on Substance Abuse Services, 2015). The question remains: how do these young people receive access? It all reverts to the black market, prescription and international trade. China is the largest distributor of fentanyl (Cohn, M. and Rector, K., 2017). In West Virginia, mixed heroin-fentanyl (blue heroin)

comes from Detroit. Mexico is the main supplier of marijuana, heroin, and methamphetamine. Cocaine comes from Ohio transported through delivery services, courier or private vehicle.

According to *the National Institute of Drug Abuse*, in 2016, West Virginia had the highest rate of opioid-related overdose deaths in the United States—a rate of 43.4 deaths per 100,000. In addition, the rate of an opioid overdose resulting in death is slightly higher in Virginia in comparison to the national average. For example, in 2016 there was an estimated "rate of 13.5 deaths per 100,000 persons." Followed by, Maryland and Washington D.C. with a similar rate of nearly 30 deaths per 100,000 persons. The death rate within the region has consistently been above the national average since 1999. The national rate of opioid-related overdose deaths currently is 13.3 deaths per 100,000 persons. Heroin overdose has been a prime contributing factor (National Institute on Drug Abuse, 2018).

In Virginia, there were approximate"70 opioid prescriptions per 100 persons" therefore, "approximately 5.6 million prescriptions," parallel to the United States mean and Washington D.C. (National Institute on Drug Abuse, 2018). However, prescriptions in West Virginia was greater, for instance, "110 opioid prescriptions per 100 persons." In essence, some patients have a combination of multiple opioid prescriptions throughout the year. Whereas, Maryland in 2015 opioids prescription depreciated by 7.3% compared to the national average.

To understand and be more empathetic to people with drug addiction; one must evaluate the: mechanism of action, potential for abuse, and adverse effects of the drug(s). Heroin "acts agonistically on central nervous system (CNS) opioid receptors mu, kappa, and delta" (Huecker, 2017). Therefore producing analgesia, euphoria and respiratory depression; by decreasing the neurotransmitters into the synaptic cleft. Due to its drug schedule, there is a high potential for abuse.

Adverse effects include, but not limited to, constipation, miosis; a decrease in blood pressure, pulse, and most worrisome respiratory depression (Huecker, 2017).

Fentanyl also works in the brain by inducing euphoria; in essence, it diminishes feelings of discomfort and stimulates reward and pleasure (Ramos-Matos, 2017). Nevertheless, the risk for dependency is great, and it may also cause constipation, nausea, and vomiting. Methadone binds to mu-opioid receptors and is metabolized in the liver. Just as fentanyl and heroin, methadone can create an intense dependency. Adverse effects may consist of clammy skin, coma, drowsiness, miosis and can be potentially fatal ("Methadone", 2018).

As part of the medical emergency response to overdose in the region; some states, such as Virginia and Maryland created programs like REVIVE and ORP (Overdose Response Program) to train people to recognize, along with assisting in an overdose emergency. In addition, the use of Naloxone, also known as Narcan is safe and easy to administer and is widely used by first responders in the area.

One of the objectives by legislators in the region is to expand the access to health care and individualize treatment options (Pembleton, M. & Zickuhr, K., 2018). Without a doubt, one of the best ways to increase access to care is utilizing the internet. Where one can chat with a professional, or someone who has further information for where an individual or other patients can seek recovery (Virginia Drug Rehab and Addiction Treatment Options., n.d.), for example, *Curb the Crisis*. Hospitals are expanding their treatment centers and becoming more readily prepared as to what to do in the event that an adult, child, or infant has overdosed, and/or in a state of withdrawal. For instance, the House of Delegates in collaboration with Maryland General Assembly House Opioid Workgroup; have created a legislative package in an endeavor to make treatment more accessible, prevention, public awareness, and education. The media has brought awareness on broadcasts, in

newspapers, and advertisements on social platforms directed towards treatment and prevention. On the online government site, *Virginia Governor*, the newsroom shares a bountiful of information regarding the issues Virginia faces with the opioid crisis. Moreover, the government website, like others, also discussed the future objectives and grants the U.S. Department of Education has made to the cause (Pyle, 2018). The opioid crisis affects not only these states within this region, but it's a national issue that needs to be resolved as a country together. Legislators, professionals, and everyday citizens know drug abuse will have a major impact on the: national economy, nation's health, and future generations because it already has.

B. Impact Story: https://wamu.org/story/17/10/10/drug-cop-daughter-opioids-one-familys-story-addiction/

The story was about a drug cop in Western Maryland. Kevin Simmer had a daughter named Brooke who was prescribed with Percocet(a pain medication). She was taking it everyday. Kevin Simmer wanted her to go into inpatient treatment where there is an access to care 24hours a day. Request from the insurance company was denied. The reason was that Brooke's case wasn't that serious. As a drug cop, he knew that taking prescription pills could escalate to her being a heroin addict. Brooke's addiction had grown and she started using heroin everyday. Because of this addiction, an aspiring athlete turned into a thief and worked as a prostitute in order to sustain her addiction. As a father, Kevin was devastated and felt helpless. He was a drug cop but he couldn't do anything to help his daughter. Brooke wanted treatment but getting treatment requires approval from the insurance company. In their area, there is a 10 day wait for inpatient treatment. While Brooke was doing the treatment, Kevin was so proud of her daughter but then he knew her chance of overcoming a heroin addiction was very low. After treatment, she went back to using heroin. This time was

worse. Brooke was found unconscious in the basement with a tourniquet around her arm. She was revived with a dose of Narcan, a drug that can counteract an opioid overdose. After few days, she was back on the street again looking for drugs. She was uncontrollable and was in prison for a drug charge. In her 4month stay in jail, she told her father she wanted to build a place for women battling addiction. She wanted it to be clean and nice unlike the places she stayed for the treatment. After she got out from prison, she went back to using drugs. This time, she wasn't able to survive. She called her sponsor not her father. She told her sponsor she didn't want her father to be disappointed anymore. She went to the church where she used to play basketball when she was a kid. She was found in the back seat of her car dead from the heroin overdose.

The outpouring of support from the community was enormous. Family, friends and people who knew Brooke from her treatment program were there at Brooke's funeral. The incident was an eye opener for everyone in the community. Kevin Simmer, who lost his precious child said that incarceration of drug addicts is not the answer. The answer is drug treatment. Kevin's mission was to build a treatment facility that helps young women. I was touched when the father said he never let his daughter out of his sight when she needed him the most. It showed how much he loved and cared for his daughter. He tried anything he could do but drugs overpowered it. Abused of drugs is common in the region as Hagerstown is on a drug route for dealers coming from Baltimore. The availability of the treatment and medical care are regional factors that affected the outcomes and consequences in the story. The author of the article mentioned that only 1 out of 9 people seeking help for addiction is able to find treatment (Tumer, 2017). For someone like Brooke, treatment should be started right away. They waited for almost a week for availability. Another factor was medical care. Brooke was prescribed Percocet, a strong pain medication. Brooke's father wanted her to be treated in a facility where there's access to care available for 24 hours a day. The insurance

denied the request for in-patient treatment. Losing a child is never easy, but losing a child to addiction is even worse. Parents should talk with their kids about the devastating effect of drugs while they're growing up. Prescription medication should be kept away from the children. Never share medication with the family. Drug education should be part of school curriculum as well. Campaigns against drugs should be supported by the community so young people would be aware of the dangers of illegal drugs. Drug addiction is a huge problem not only in Hagerstown but all over the world. A drastic action should be taken before it consumes more lives.

C. Role of the dental hygienist:

The dental management of drug abuse in patients can often become a daunting task. Drugs can have both physical and mental effects. Drug addict patients can become mentally unstable. When taking medical history, they may not tell the truth or forget the things they wanted to say. As a dental hygienist, I need to be very patient in communicating with them. Choose appropriate words not to offend them as most of them are often sensitive. This include question such as what kind of drugs they are taking. Mutual trust should be made between the dental hygienist and the patient. As part of my profession, I should be aware of issues concerning treatment and be alert to the possibility of resistance to painkillers and anesthetics. Mouth rinses containing alcohol should be avoided in patients with drug abuse who also have fungal infection and severe xerostomia. Also, I should be knowledgeable enough about the drugs available in the region. It is very important to be familiar with these drugs as many of these abused substances have devastating effect on oral health. Discuss these effects with the patients. At present, the most common highly abused drugs is opioid drugs. In case of heroin abuse, increased number of decayed, missing and filled teeth can be detected in the mouth. Marijuana abuse can lead to acidic erosion of enamel. Also, these patients develop dental caries, tongue carcinoma, leukoplakia, inflammation and gingival hyperplasia. Methamphetamine

can cause large carious lesion in buccal surface areas and fractured teeth. As all this information is relevant to the patient's health, a thorough explanation should be delivered to them. They may not listen but at least I showed them that I care not only for their oral health but also their general well-being.

References

Bernstein, L., & Zezima, K. (2018, February 15). One small town, two drug companies and 12.3 million doses of opioids. Retrieved November 22, 2018, from https://www.washingtonpost.com/national/health-science/one-small-town-two-drug-companies-and-123-million-doses-of-opioids/2018/02/15/6436fe16-11a0-11e8-8ea1-c1d91fcec3fe_story.html?utm_term=.39c08f0a856b

Biennial Report on Substance Abuse Services (2015). *Virginia Department of Behavioral Health and Developmental Services*. Retrieved November 24, 2018 from http://www.dbhds.virginia.gov/library/substance%20abuse%20services/2015biennialreportonsubstanceabuseservices.pdf

Bolen, J. (2008). A Guide to State Opioid Prescribing Policies State Opioid Prescribing Policy: West Virginia. *Medscape Neurology & Neurosurgery.*, 1-4. Retrieved November 22, 2018.

Bose, J., Hedden, S. L., Lipari, R. N., & Park-Lee, E. (2016, September). Key Substance Use and Mental Health Indicators in the United States: Results from the 2015 National Survey on Drug Use and Health. Retrieved November 23, 2018, from https://www.samhsa.gov/data/sites/default/files/NSDUH-FFR1-2015/NSDUH-FFR1-2015/NSDUH-FFR1-2015.htm#sudyr04

Cohn, M. and Rector, K. (2017, October 13). Fentanyl makes its way from China labs to Baltimore streets, with deadly consequences. *The Baltimore Sun.* Retrieved November 23, 2018 from https://www.baltimoresun.com/health/bs-MD-fentanyl-from-china-20170913-story.html

D.C. Law 21-186. Substance Abuse and Opioid Overdose Prevention Amendment Act of 2016. (2017, February 18). Retrieved November 22, 2018, from https://code.dccouncil.us/dc/council/laws/21-186.html

Huecker MR, Marraffa J. Heroin. [Updated 2017 June 26]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2018 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK441876/

Methadone. (2018, November 21). Retrieved November 22, 2018, from https://en.wikipedia.org/wiki/Methadone

Morbidity and Mortality Weekly Report (MMWR). (2018, March 08). Retrieved November 23, 2018, from https://www.cdc.gov/mmwr/volumes/67/wr/mm6709e1.htm

Morrisey, P. (2016). Best Practices for Prescribing Opioids in West Virginia. *State of West Virginia Office of the Attorney General Consumer Protection and Antitrust Division,* 1-4. Retrieved November 22, 2018.

National Institute on Drug Abuse. (2018, March 06). Opioid Overdose Crisis. Retrieved November 22, 2018, from https://www.drugabuse.gov/drugs-abuse/opioids/opioid-overdose-crisis

Opioid Overdose. (2018, October 03). Retrieved November 22, 2018, from https://www.cdc.gov/drugoverdose/maps/rxrate-maps.html

Overdose Prevention in Maryland. (n.d.). Retrieved November 22, 2018, from

https://bha.health.maryland.gov/OVERDOSE_PREVENTION/Pages/Index.aspx

Pembleton, M., & Zickuhr, K. (2018, April 30). How the D.C. region is responding to the opioid crisis. Retrieved December 2, 2018, from https://www.dcpolicycenter.org/publications/how-the-d-c-region-is-responding-to-the-opioid-crisis/

Pyle, C. (2018, October 10). Governor Ralph Northam announced today that Virginia has received a five-year, $3.75 million grant from the U.S. Department of Education to improve outcomes and support services for students in rural school divisions most affected by the opioid crisis. Retrieved November 24, 2018, from https://www.governor.virginia.gov/newsroom/all-releases/2018/october/headline-83202-en.html

Ramos-Matos, C. F. (2017, October 16). Fentanyl. Retrieved November 22, 2018, from https://www.ncbi.nlm.nih.gov/books/NBK459275/

Revive. (2018, November 23). Retrieved November 24, 2018, from http://dbhds.virginia.gov/behavioral-health/substance-abuse-services/revive

Reynolds, V., Causey, H., McKee, J., Reinstein, V., & Muzyk, A. (2017, May/June). The Role of Pharmacists in the Opioid Epidemic. Retrieved November 22, 2018, from http://www.ncmedicaljournal.com/content/78/3/202.full

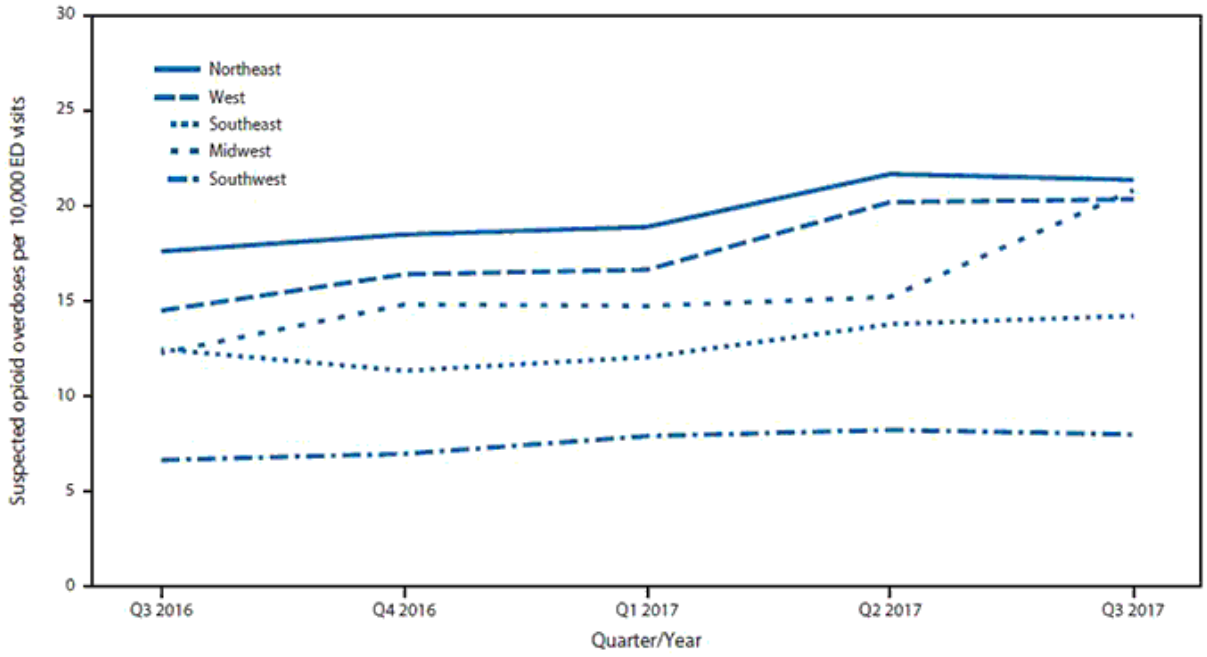
Sullivan, P. (2017, April 13). Drug overdose deaths top 1,400 in Virginia in 2016. Retrieved November 24, 2018, from https://www.washingtonpost.com/local/virginia-politics/drug-overdose-deaths-top-1400-in-virginia-in-2016/2017/04/13/c970f382-1fc4-11e7-ad74-3a742a6e93a7_story.html?noredirect=on&utm_term=.db895f84e5db

Title 54.1. Professions and Occupations. (n.d.). Retrieved November 24, 2018, from

https://law.lis.virginia.gov/vacode/title54.1/chapter34/section54.1-3448/

Virginia Department of Health. (2018). Retrieved November 22, 2018, from http://www.vdh.virginia.gov/data/opioid-overdose/

Virginia Drug Rehab And Addiction Treatment Options. (n.d.). Retrieved from https://www.addictioncampuses.com/virginia



Source of image: Morbidity and Mortality Weekly Report (MMWR). (2018, March 08). Retrieved November 23, 2018, from https://www.cdc.gov/mmwr/volumes/67/wr/mm6709e1.htm