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Skyline High School

Paper and Reflection

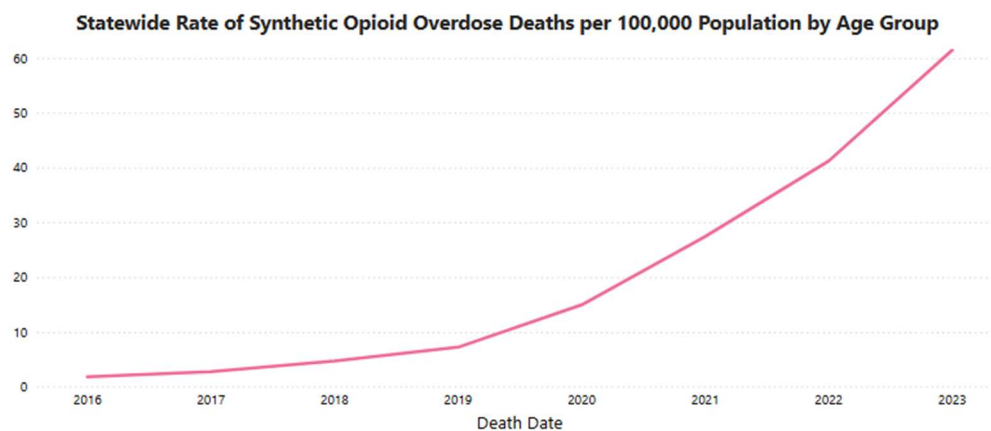
Fentanyl: The Silent Killer – PSA Campaign

Introduction to Campaign:

Over the past couple of years, fentanyl has become one of the most urgent public health crises in the United States. According to the U.S. Drug Enforcement Administration, more than 107,000 people lost their lives in a drug overdose in 2023, with nearly 70% of those deaths attributed to opioids such as fentanyl (DEA). However, this is not just a national problem, but its impact is acutely felt in local communities across Washington state. Data from the Washington Tracking Network has shown how over 80% of opioid related deaths in the state involve illicitly manufactured fentanyl. This deeply reflects both the lethality and growing accessibility of this drug in our communities.

For some context, fentanyl was first created by Dr. Paul Janssen in 1959 as a strong surgical analgesic that is approximately 100 times more potent than morphine (US Food and Drug Administration). Because of its strength, the drug was originally rarely used other than in hospital settings. However, in recent decades, illegally imported versions of the drug started becoming more and more common, leading to the rise of accidental overdoses. These illegal variants often contain unknown and dangerous substances, making them especially deadly and difficult to detect. As a result, accidental overdoses involving fentanyl have risen exponentially, compounding year after year. This has caused a tremendous problem in the field of drug overdosing, which has just compounded throughout the past decade. This is shown in Figure 1, which highlights how synthetic opioid overdose deaths in Washington State have sharply increased each year: from 205 deaths in 2019 with a rate of 7 victims per 100,000, to nearly 3000 deaths in 2023, with a rate of more than 60 per 100,000.

Figure 1: (“WTN”) – “Statewide Rate of Synthetic Opioid Overdose Deaths per 100,000 population by age group



Target Audience:

Initially, when I started this campaign, I intended to focus my projects on teenagers and specifically high school students. This is because the crisis has deeply affected my community: a few years ago, two students at my high school died from fentanyl overdoses.

However, as I looked more closely at Washington overdose data broken down by age groups, I realized that the group most impacted by fentanyl wasn't teenagers but was millennials. People between the ages of 30 and 44 made up a disproportionately high number of deaths. That discovery led me to shift the focus of my campaign to a better address where the crisis is hitting hardest.

Specifically, in the counties of Kitsap, Snohomish, and Whatcom, I found that people aged 35 to 44 experienced the highest number of fentanyl related deaths in 2023, while the rates of teen overdose deaths have decreased since 2021. Figures 2 through 4 illustrate this pattern clearly. In Figure 2, 2023 overdose data shows that deaths among individuals aged 35–44 exceeded every other age group by over 20%. Similarly, data from Snohomish and Whatcom counties (Figures 3 and 4) revealed the same age-specific peak in fatalities. This consistent trend led me to shift my campaign's target audience toward millennials, particularly those between the ages of 30 and 44, since the data showed they were the most impacted. It also became clear from this data that fentanyl overdosing in millennials wasn't just a local issue, but a widespread crisis affecting communities across the entire state.

Figure 2: (“WTN”) – “Kitsap County Percent of Illicitly Manufactured Fentanyl Overdose Deaths by Age Group”

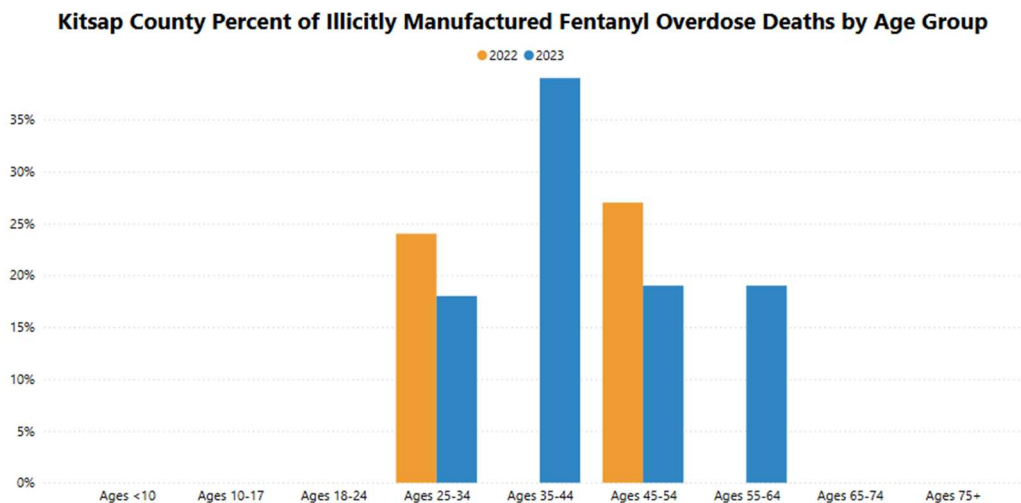


Figure 3: (“WTN”) – “Snohomish County Percent of Illicitly Manufactured Fentanyl Overdose Deaths by Age Group”

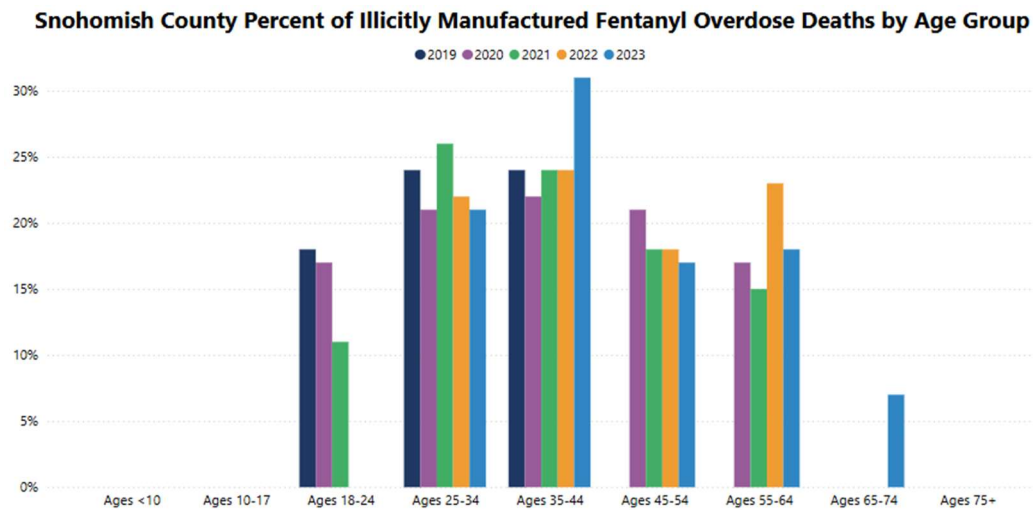
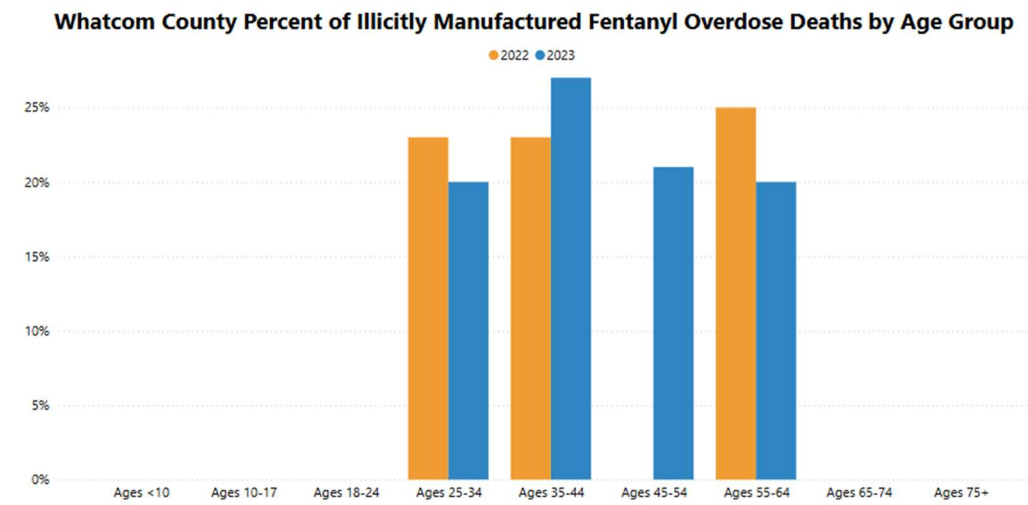


Figure 4: (“WTN”) – “Whatcom County Percent of Illicitly Manufactured Fentanyl Overdose Deaths by Age Group”



Equity/Disparity Impact:

After looking at this data, I wanted to understand why this group was so heavily impacted. What I found is that despite having demographic differences, all three counties shared a striking pattern: all of them had high amounts of overdose rates in marginalized races, particularly African Americans and American Indian/Alaska Natives. This pointed towards significant racial and systemic disparities affecting these communities.

For example, in Whatcom County, American Indian and Alaska Native residents account for roughly 1.6% of the population, yet they represented about 11% of opioid-related deaths in 2023 (Figure 5). This is a 575% disparity.

Similarly, statewide WTN data showed that African Americans, who make up just 3.96% of Washington’s population (U.S. Census Bureau), accounted for approximately 13% of fentanyl overdose deaths (Figure 6), which is an additional 225% disparity. Overall, this data just revealed a significant equity gap that demands attention and led to a further shift in my campaign’s primary audience: Millennials from marginalized racial groups.

Figure 5: (“WTN”) – “Whatcom County Rate of Synthetic Opioid Overdose Deaths per 100,000 for American Indian and Alaska Natives”

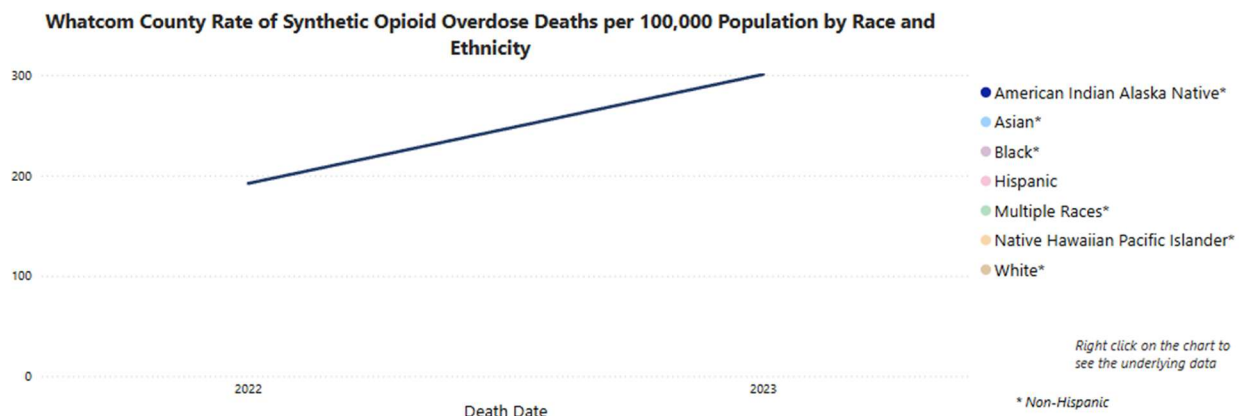


Figure 6: (“WTN”) – “Table for 2023 data on populations surrounding fentanyl overdose rates”

breakdown	2019	2020	2021	2022	2023
American Indian Alaska Native*	5.00%	4.00%	6.00%	6.00%	4.00%
Asian*		2.00%	2.00%	2.00%	2.00%
Black*	7.00%	9.00%	11.00%	10.00%	13.00%
Hispanic	11.00%	13.00%	11.00%	12.00%	11.00%
Multiple Races*	6.00%	5.00%	5.00%	5.00%	5.00%
Native Hawaiian Pacific Islander*				1.00%	1.00%
Unknown Race				2.00%	2.00%
White*	66.00%	66.00%	63.00%	62.00%	61.00%

Finally, when further going through Washington state data, I found it really interesting how Whatcom, Kitsap, and Snohomish County all had higher-than-average rates of opportunity for intervention, meaning someone was present who could have intervened during an overdose, to save a life. In 2023, WTN data showed that intervention opportunities occurred in 85% of cases in Kitsap, 73% in Snohomish, and 65% in Whatcom, which are each equal to or above the

statewide average (63%). Yet, despite these chances of preventing deaths, fatalities continued to climb throughout the year. This contradiction led to me realizing that a lack of awareness, education, and training in marginalized communities has resulted in higher overdose rates.

Overall, the WTN data on age, racial groups, and intervention rates helped me narrow my target audience to millennials from marginalized racial communities. Additionally, it forged my approach to this science communication track by emphasizing the need to raise awareness about the dangers of fentanyl and to educate people on how to respond and potentially save a life during a fentanyl overdose.

Campaign Approach:

To start out with my approach to this awareness campaign, I decided that social media, and specifically Instagram, would be the easiest way to interact with my target audience. The reason for this is that millennials are the population who use Instagram the most, with them being the biggest audience in the country: 28.3% of total users (statista). Additionally, since my campaign focuses on millennials for marginalized groups, I aimed to reach this group by directly tagging 10 of the largest African American and American Indian Washington communities in every post. This would help guarantee that my content would be pushed to the top of my target audience's feeds.

Next, to catch the attention of my audience, I used a strong visual strategy: consistent bold colors over dark backgrounds, eye-catching graphics, bolded text, and informative charts. My goal was to make each post not only visually striking but also emotionally connecting and informative.

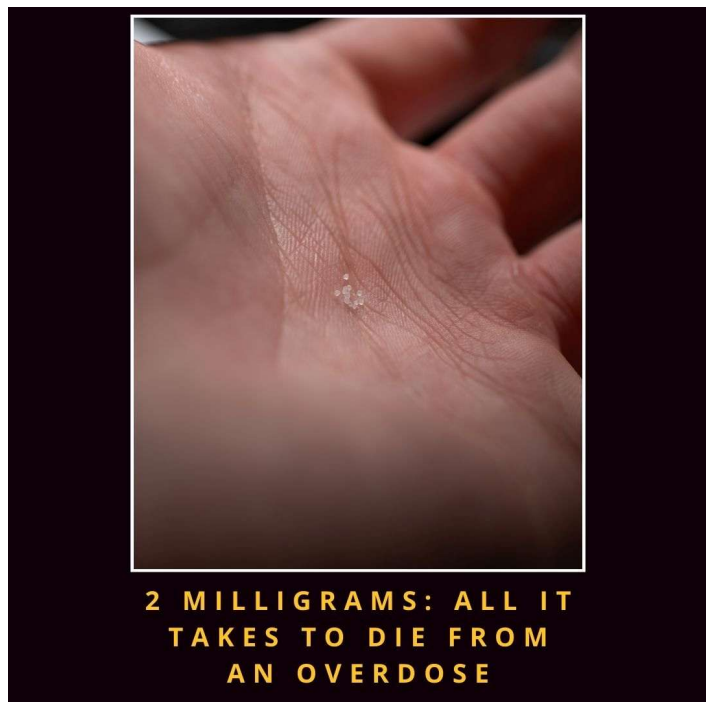
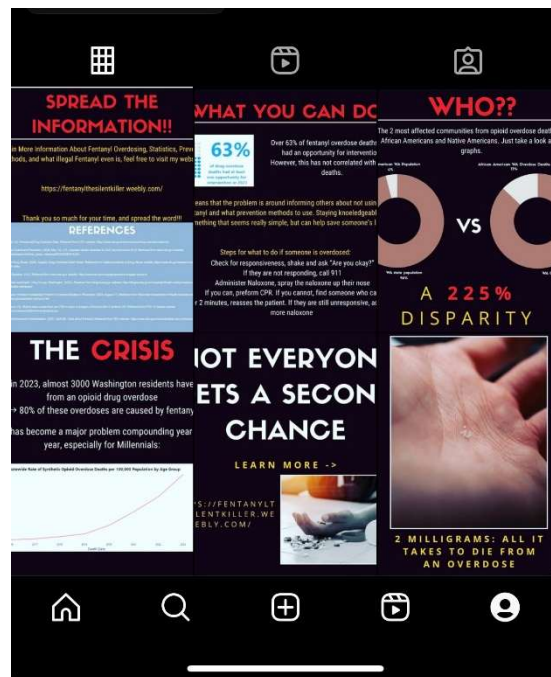
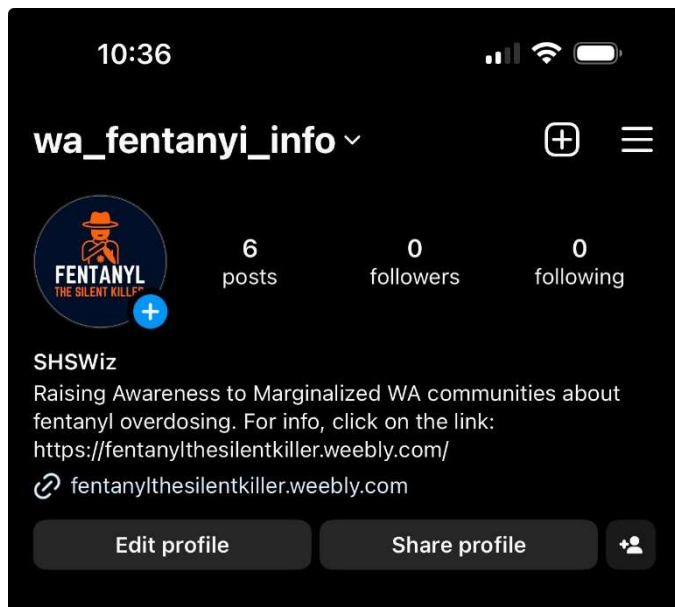
Going through the PSA's one by one, the first 2 posts introduced the scale of the fentanyl crisis by highlighting how even a tiny amount can lead to overdose and death. Additionally, I included my campaign website directly in the 2nd post's graphic to encourage viewers to learn more. Next, my 3rd and 4th posts were all about the disparities going on around fentanyl overdosing, and how the rising overdose rates have disproportionately affected the deaths of African and Native Americans. I used bold colors and text, paired with visuals directly from the WTN database, to highlight these disparities. Finally, my 5th and 6th posts were action oriented by explaining how viewers could intervene in an overdose situation and how they could learn more about this issue by looking at my website.

In all 6 of these posts, I continued tagging Washington based Native and African American advocacy groups, and included the website link in each posts' comments, to drive the traffic beyond Instagram itself, for the desired audiences.

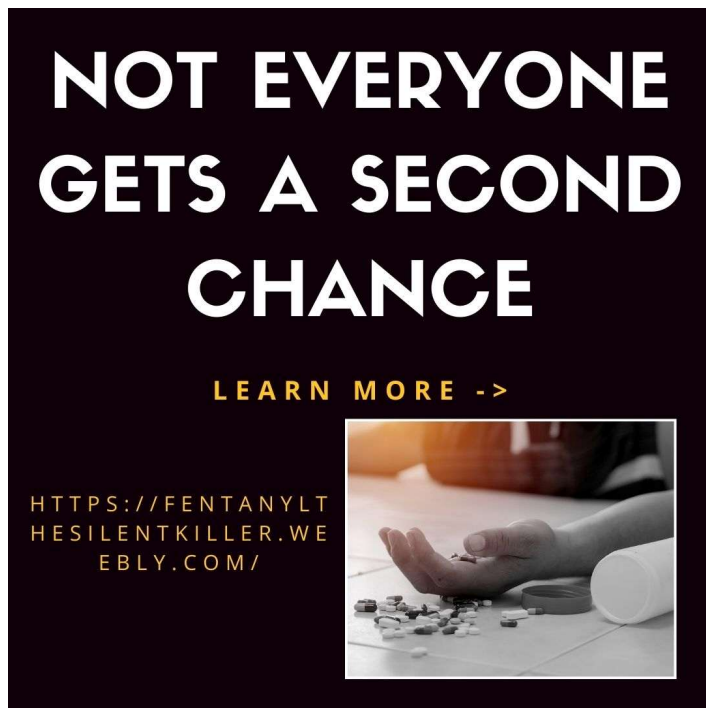
Overall, my goal through this Instagram PSA was not to fully explain all the information about fentanyl overdosing in one post, but to spark curiosity and concern. By connecting with the

viewers visually and emotionally, I hoped to encourage them to click on my website and learn even more, as the pure lack of knowledge is what is leading to overdose deaths.

Posts:



**2 MILLIGRAMS: ALL IT
TAKES TO DIE FROM
AN OVERDOSE**

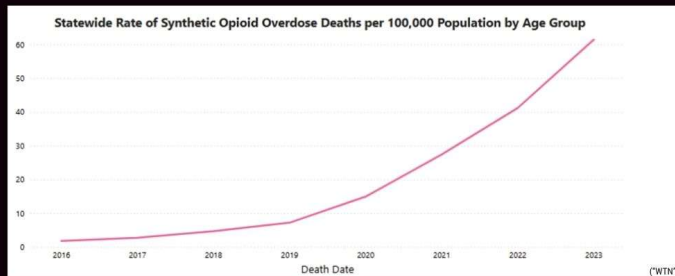


THE CRISIS

Just in 2023, almost 3000 Washington residents have died from an opioid drug overdose

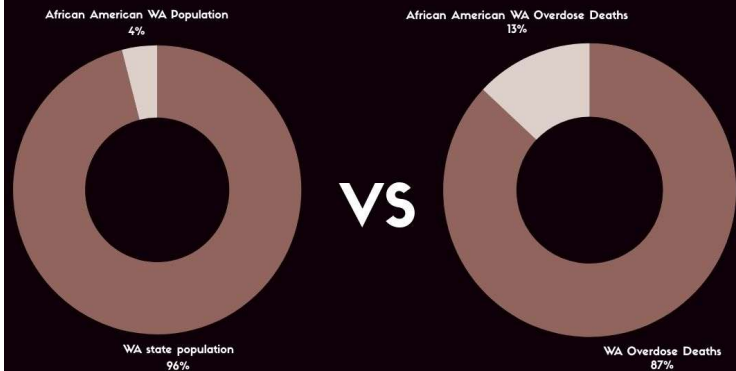
→ 80% of these overdoses are caused by fentanyl

This has become a major problem compounding year after year, especially for Millennials:



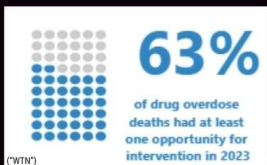
WHO??

The 2 most affected communities from opioid overdose deaths are African Americans and Native Americans. Just take a look at the graphs.



A 225% DISPARITY

WHAT YOU CAN DO



Over 63% of fentanyl overdose deaths have had an opportunity for intervention. However, this has not correlated with fewer deaths.

This means that the problem is around informing others about not using illicit fentanyl and what prevention methods to use. Staying knowledgeable is something that seems really simple, but can help save someone's life!

Steps for what to do if someone is overdosed:

- Check for responsiveness, shake and ask "Are you okay?"
- If they are not responding, call 911
- Administer Naloxone, spray the naloxone up their nose
- If you can, perform CPR. If you cannot, find someone who can
- After 2 minutes, reassess the patient. If they are still unresponsive, administer more naloxone

SPREAD THE INFORMATION!!

To Gain More Information About Fentanyl Overdosing, Statistics, Prevention Methods, and what illegal Fentanyl even is, feel free to visit my website:

<https://fentanylthesilentkiller.weebly.com/>

Thank you so much for your time, and spread the word!!!

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The pre-evaluation survey was a quiz I created that asked participants to rate their knowledge of fentanyl and opioid misuse on a scale from 1 to 5, based on different topics. Most respondents scored themselves at a 1 or 2, which confirmed my assumption that many people in our community simply don't know enough information about fentanyl. This data supported the central goal of my campaign, which was to bridge the information gap in these target populations, to prevent overdose deaths. (See Figure 7 below for the questions asked, and Figure 8 to see response breakdown.)

Pre-Lesson Survey: Fentanyl

This quiz is designed to check your pre-existing knowledge and understanding of fentanyl and opioid misuse. It is not graded and is meant to help guide the lesson. No pressure, and just answer each question to the best of your ability.

1 = No idea, 5 = Can teach the class

hasith.shs@gmail.com [Switch account](#)

Not shared

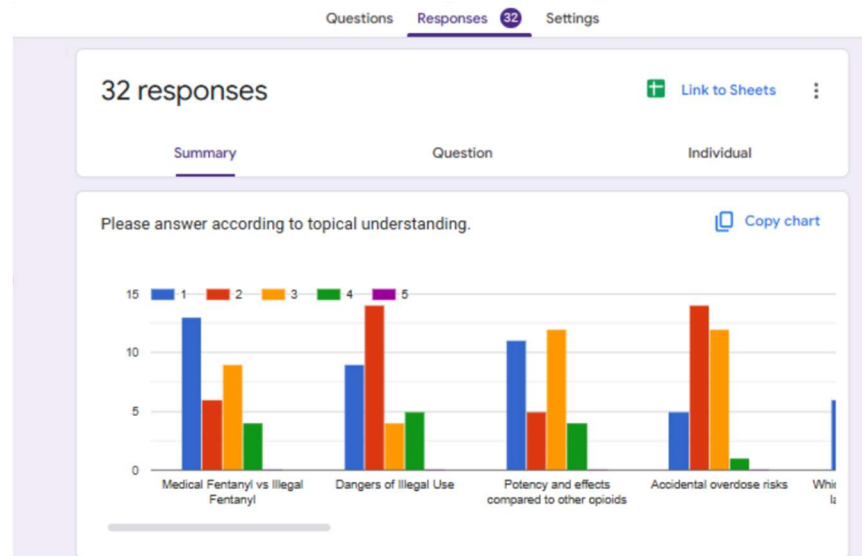
* Indicates required question

Please answer according to topical understanding. *

	1	2	3	4	5
Medical Fentanyl vs Illegal Fentanyl	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dangers of Illegal Use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Potency and effects compared to other opioids	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accidental overdose risks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which substances can be laced with Fentanyl	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How fentanyl affects the brain and body	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physical and psychological dependence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Long-term health effects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Signs and symptoms of overdose	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Emergency response procedures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use of naloxone (Narcan)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Influence of peer pressure and media representation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safe use and harm reduction approaches	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Addiction treatment options	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure 7: (“Google Forms”) – “Pre-Evaluation Survey Responses”



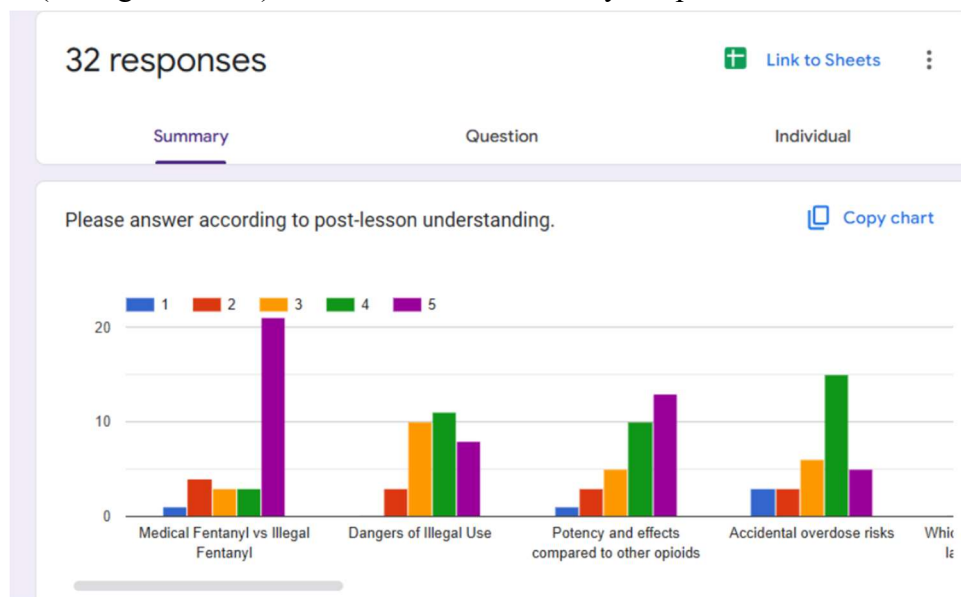
After this pre-evaluation survey, my website included a slideshow to my PowerPoint presentation. This presentation digs deeper into the topic of overdosing, covering a lot of different information. All in all, it goes over:

- What Fentanyl is
- What IMF's are
- How much Fentanyl it takes to overdose,
- The physical and societal impacts of fentanyl
- Community statistics surrounding fentanyl
- Racial and Equity concerns
- Solutions and prevention strategies

I used data from both the WTN database and national sources, to make the information as accurate and relevant as possible, so that my audience could get the best information possible.

Additionally, to see if the presentation was effective, I also created a post-evaluation survey with the same 1-5 knowledge scale on the same topics. The results were just as exciting, as most participants rated themselves a 4 or 5 after going through the presentation. It was also really surprising how there was the same number of responses in this second form, showing how I retained the attention of my audience. This shows that my campaign did what it was meant to, which was improving understanding and awareness about fentanyl usage and prevention in specific communities, which it will continue to do. Results from the Post Evaluation survey are shown in Figure 9 below.

Figure 9: (“Google Forms”) – “Post-Evaluation Survey Responses”



Finally, to make the experience a bit more interactive for the audience, I also included a Kahoot quiz. However, since my campaign was asynchronous and fully online, I couldn't host a live Kahoot game. Instead, I was able to post all the questions and answers for the Kahoot on the bottom of the website, so people could test their own knowledge.

Overall, this online PSA project gave me the opportunity to build a resource heavy, accessible campaign that easily reaches millennials who are particularly from African American and Native American communities, in a meaningful way. Based on the strong engagement in both surveys and the traffic to my site, I'm confident that this campaign is making a difference. And while this is only the beginning, I believe that the momentum from my website and Instagram efforts will continue to grow, spreading awareness and hopefully even saving a life.

Challenges:

One of the biggest challenges I faced during this campaign was working with data. At the time of my research, there was not much available overdose data for 2024, which meant I had to rely on some older. This made it harder to fully capture the current scale of the fentanyl crisis. Additionally, over 50% of counties in Washington State did not allow their data to be displayed on the WTN dashboard. This left me with a very restricted pool of information, forcing me to focus only on the few counties that did report usable data, like Kitsap, Snohomish, and Whatcom. Another major challenge was designing an engaging, fully asynchronous campaign. I couldn't interact with my audience in real time, so I had to rely on tools like Instagram tagging and visual storytelling to ensure my message reached marginalized millennial communities. Despite these limitations, I used strategic outreach, survey data, and careful analysis of the

limited datasets available to build a campaign that I believe is still effectively spreading awareness.

Assistance:

I would like to thank a friend – Haowen Zhang – for helping me take pictures and edit photos (specifically the one with salt on a hand) so that I could integrate new information onto my PowerPoint, website, and Instagram posts. Additionally, I would like to thank my parents, and fellow school students as they helped me choose this topic of fentanyl overdosing, and it has led me a long way.

Reflection:

Over the course of this campaign, I worked to develop a public health project that would raise awareness about the dangers of fentanyl overdosing, particularly among millennials in marginalized racial groups in Washington State.

Starting out, the process began with me analyzing overdose data from the Washington Tracking Network (WTN), which allowed me to identify the most affected age and racial groups. As I looked at the data more closely, I found that many recorded fentanyl overdose deaths had clear opportunities for intervention, yet these moments didn't lead to fewer fatalities. This means that in many cases, someone had a chance to intervene before the overdose occurred but lacked the knowledge to act, risking someone's life. Realizing this, I shaped my campaign around raising awareness and expanding access to information about the dangers of fentanyl, with a focus on supporting African American and Native American communities who are disproportionately affected.

For my PSA, I created a 2-part outreach campaign that uses Instagram and an interactive website. Starting out, I used Instagram to reach my primary audience through targeted social media posts. Then, to drive engagement, I applied graphic design strategies that encouraged viewers to visit the website link. This website then included a PowerPoint presentation, interactive quizzes, and evaluation surveys to inform and educate my target audience on the dangers of fentanyl overdose and prevention strategies.

Overall, my goal through this campaign was to create a science communication project that could deliver important health information in an engaging, accessible way to the people who need it most.

Throughout this process, I faced many barriers. Starting out, one of the most significant challenges was the lack of up-to-date data as there was not much 2024 data available from WTN, so I had to rely on older data and identify patterns from previous years. Additionally, most of the counties in Washington did not display overdose data on the WTN dashboard, making it difficult to present a complete picture of the overdosing crisis.

Moving onto the campaign, it was challenging to find ways to communicate complex scientific and health information through platforms like Instagram, where attention spans are short, and engagement depends on visual impact. In addition, designing a completely asynchronous campaign added another layer of difficulty, since I couldn't interact with viewers directly and had to ensure the content could stand alone while still being informative and impactful. This proved challenging since it was extremely time consuming, from having to build google surveys, to a website, social media account, PowerPoint, Kahoot, etc.

This project was deeply personal to me, as a major influence on my thinking came from a real-life tragedy at my own school, where two students lost their lives due to fentanyl overdoses. This motivated me to dive far into the data and seek out the most vulnerable populations so that I could create a campaign that truly makes a difference.

I received meaningful support from my peers, parents, and community members. My friends helped give me feedback on my website and Instagram posts. On the other side, my parents and community members at my local library looked over my PowerPoint to give feedback on how to make it more interesting/interactive. This support helped me keep refining my materials and maintain the focus of my project throughout the months I worked on it.

One of the biggest lessons I learned was that impact doesn't require perfection, but what matters is clarity, evidence, and purpose. Even with limited data, I was still able to create a campaign that resonated with my audience and made them more informed. Early on, I was very concerned that no one would look at my presentation or website, which would leave me without a strong dataset for my pre- and post-evaluation surveys. However, I realized that community members do care deeply about issues impacting our neighborhoods, especially when those issues, like fentanyl overdoses, are directly affecting people around them.

Going forward, I know that advocacy and education can begin with a single, well-informed message. This experience taught me how to communicate science in a meaningful way, and I will carry that skill with me into future work.

AI Usage Reflection:

Throughout this entire paper, reflection, website, PowerPoint, Instagram posts, Kahoot, and google docs, I did not use AI at all to give me any information or write anything. The only thing I have used is Grammarly to recheck my grammar and spelling.

PowerPoint (Download and Viewable links on website too):

Website: <https://fentanylthesilentkiller.weebly.com/>

By: Hasith

FENTANYL: THE SILENT KILLER

Before you go
through this
presentation, please
fill out this prior
knowledge form (on
website) ->



Presentation Agenda:

- What is Fentanyl?
- What are IMFs
- Lethal Amount of Fentanyl
- Direct and Indirect Effects of Fentanyl
- Equity Concerns/Overdose Impact
- Kahoot!

What is Fentanyl?

- Fentanyl is a prescription drug that could be both legal and illegal depending on its content and dose.
- Similar to Morphine, it's a drug that typically used in hospitals to treat patients with severe pain, especially after surgery.
- Fentanyl was first developed in 1959 and introduced in the 1960s as an intravenous anesthetic. Fentanyl was created by Dr. Paul Janssen as an intravenous surgical analgesic. The drug is 50–100 times more potent than morphine. .



What are IMFs?

- There is a type of Illicitly manufactured fentanyl, known as IMF that could be easily causing overdoses and extremely life-threatening situations due to the unknown chemical substances it contains.
- It is a synthetic opioid made in illegal labs that are most commonly found in powder form oppressed into counterfeit pills and can be smoked, snorted, injected, or ingested, and can be fatal when taken.
- Mexico and China are the primary source countries for fentanyl and fentanyl-related substances to be trafficked directly into the United States, usually through cartels and other illegal ways of selling.



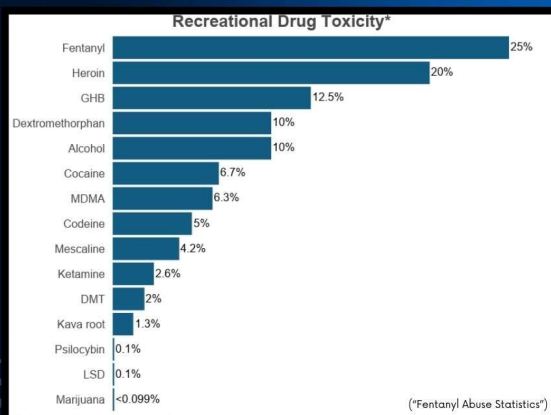
How much Fentanyl does it take to kill someone?

- The drug is 50–100 times more potent than morphine.
- Lethal dose of Fentanyl would be considered to just be 2 milligrams
- This became even more life threatening when it comes to the illegal fentanyl being sold by the cartels, which can involve heroin, cocaine, methamphetamine, and other drug composition being mixed altogether. As a result, many people may not know they're ingesting fentanyl, leading to an accidental poisoning.

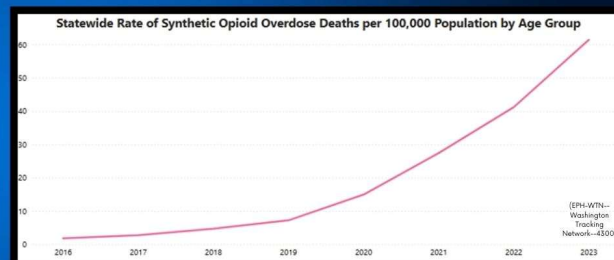


Skyline High School Football Player named Luke Connor Beirer who sadly passed away due to Fentanyl overdose.

Real life Statistics



Fentanyl is the most toxic drug in circulation



Fentanyl overdose deaths are only increasing

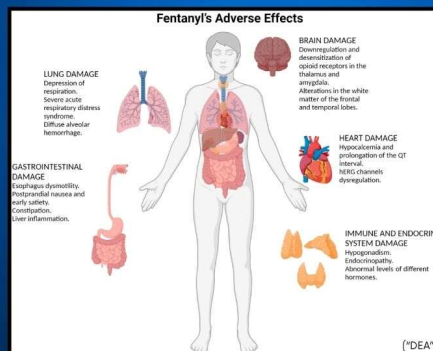
Additional Statistics

- More than 107,000 people lost their lives in a drug overdose in 2023, with nearly 70% of those deaths attributed to opioids such as fentanyl (DEA)
- Over 80% of overdose deaths in Washington state were a direct result of illicitly manufactured Fentanyl (WTN)
- Synthetic opioid overdose deaths in Washington State have sharply increased each year: from 205 deaths in 2019 with a rate of 7 victims per 100,000, to nearly 3000 deaths in 2023, with a rate of more than 60 per 100,000 (WTN)

Direct and Indirect Effects of Fentanyl

Direct Effects:

- Immediate Pain Relief
- sedation and drowsiness
- Constricted Pupils
- Lower heart rate and pressure
- nausea and vomiting
- death due to overdoses (if taken in a large quantity)

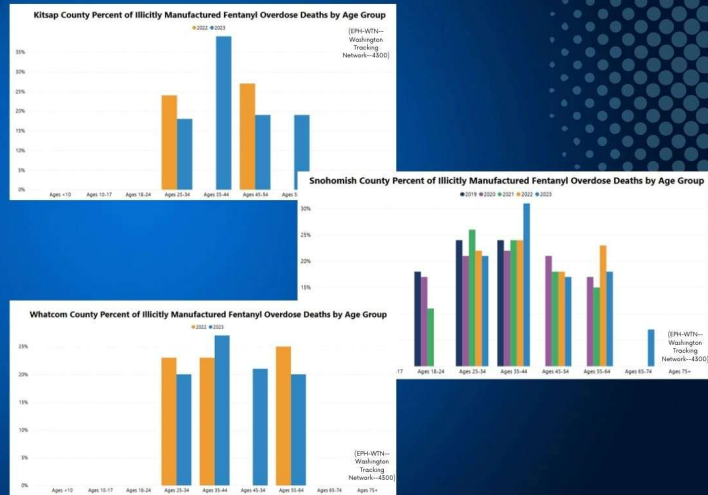


Indirect Effects:

- Gradual addition and dependence
- Risk of overdoses due to high frequency
- Withdrawal symptoms when trying to abstain.
 - Anxiety
 - Sweating
 - Weakness
 - Severe Cravings

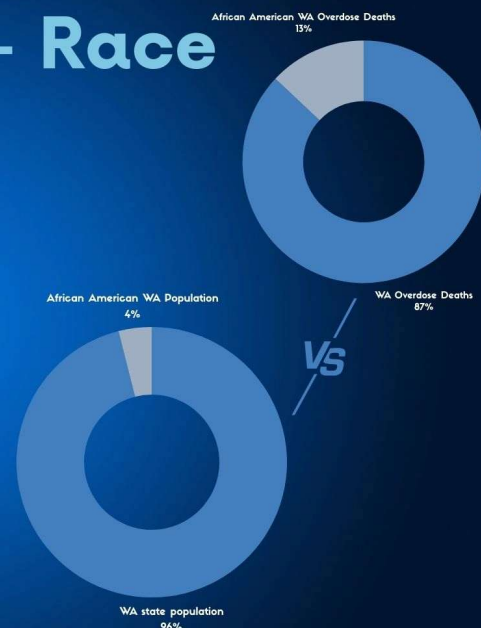
Where is the issue in our community?

By looking at public state data, it can be seen how millennials and those specifically aged 35-44 have the most fentanyl overdosing deaths. This is especially shown in three of the communities most affected by fentanyl overdoses: Kitsap, Snohomish, and Whatcom counties.



Additional Findings - Race

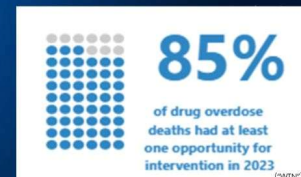
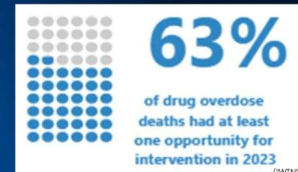
Additionally, it can be seen how the 2 most affected communities from opioid overdose deaths are African Americans and Native Americans. There is a 225% disparity for African Americans getting an overdose and a 112% disparity for American Indian Alaska Natives (WTN). This is an unacceptable disparity that needs to be stopped.



What can we do as a community - Part 1?

When looking at additional Washington State Department of Health data, it can be seen how on average, 63% of overdose deaths had at least one opportunity for an intervention.

Additionally, this rate has gone up to almost 85% in counties like Kitsap, but the overdose rates continue to rise every single year. This highlights how big of an effect YOU can have on saving a life!!



What Can You Do - Part 2?

01

Spreading Fentanyl and drug related education to further make people in our community aware of the dangers of overdose and its illegal form

02

Participate or forming non-profit organization to help with the problematic occurrence of drug addiction/death. **If you see something, say something.**

Overall Solutions

In terms of our attempt to control the Fentanyl Crisis:

We can...

Expand distribution and use of naloxone and overdose prevention education in hopes of providing the future with knowledge to deal with these kinds of situations.

AND

Spread the awareness in our community by advocating fun learning activities to keep more people engaged in drug addiction and death associated with it.

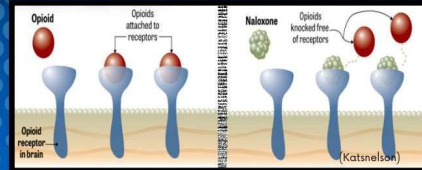
What to do in a critical situation?

1. Check for responsiveness, shake and ask "Are you okay?"
2. If they are not responding, call 911
3. Administer Naloxone, spray the naloxone up their nose
4. If you can, perform CPR. If you cannot, find someone who can
5. After 2 minutes, reassess the patient. If they are still unresponsive, administer more naloxone

Treatment for Addiction

In terms of medicines can be used to treat for Fentanyl addiction:

- Methadone, an opioid receptor full agonist, attaches to and activates opioid receptors to ease withdrawal symptoms and cravings.
- Buprenorphine, an opioid receptor partial agonist, attaches to and partially activates opioid receptors to ease withdrawal symptoms and cravings.
- Naltrexone, an opioid receptor antagonist, prevents fentanyl from attaching to opioid receptors, thus blocking its effects.



Things to Think About

1. What do you think you could do in your community to slow fentanyl consumption?
2. What should you do if you know someone close to you is actively taking fentanyl?
3. To what extent should the government be involved in stopping drug use overall?

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Thanks for your attention!
Make sure to spread the
information!!!!!!

Please fill out the feedback
form before you go!
(It is on the website)

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