



SILENT KILLER

THE FENTANYL EPIDEMIC IN WISCONSIN

DALE KNAPP, DIRECTOR

Executive Summary

A Silent Killer

Like the nation, Wisconsin is in the middle of an epidemic of drug overdoses, particularly fatal ones. The cause of this epidemic is fentanyl. Between 2015 and 2021, overdose deaths in Wisconsin involving fentanyl totalled more than 4,300. More than half of those deaths occurred in 2020 and 2021.

For decades, legally-produced fentanyl has been used by doctors to treat patients with severe pain. The recent surge in deaths has been driven by fentanyl illicitly-produced outside the United States and smuggled into the country. The drug is added to fake pills that look like OxyContin®, Percocet®, or Adoral®. It is also sold in powder and liquid form and is cut into drugs like heroin and cocaine. Because fentanyl is undetectable by taste, smell, or sight, many users are unaware they are taking it. As little as two to three milligrams of the drug can be deadly.

While the epidemic has affected residents of all ages, it has disproportionately impacted men, Black and American Indian residents, and those from 25 to 54 years of age. The mortality rate for fentanyl among men is 2.6 times greater than among women. Mortality rates for Black and American Indian residents is nearly three times greater than the rate for white residents. For Wisconsin's Black population, mortality rates nearly tripled between 2019 and 2021.

By age, those 25 to 34 have been hit the hardest, with a 2020 mortality rate of 44.6 per 100,000 residents, twice the overall rate of 22.3. Those 35 to 44 (40.7) and 45 to 54 (27.4) also had relatively high mortality rates. In each of these age groups, fentanyl-related deaths are now the number one killer, and by a wide margin. In both the 25 to 34 and 35 to 44 year age groups, the number two killer was motor vehicle deaths. Fentanyl-related deaths were 2.6 and 3.3 times greater in the respective age groups. Among those 45 to 54, fentanyl-related deaths were 1.4 times higher than alcoholic liver disease, which was the number two cause of death.

Preliminary figures from the U.S. Center for Disease Control and Prevention indicate that the number of fentanyl-related deaths in 2022 were about the same as in 2021. The approximately 1,300 deaths remains too high, but it represents a reprieve from the double-digit growth rates in prior years.

However, the fight is far from over. In 2022, the U.S. Drug Enforcement Administration (DEA) seized more than 50.6 million fentanyl laced pills, double the number seized in 2021, and 10,000 pounds of fentanyl powder. DEA estimated that these seizures represented more than 379 million potentially deadly doses of fentanyl. That figure is greater than the population of the U.S.

A Silent Killer

The Fentanyl Epidemic in Wisconsin

Dale Knapp, Director

Like the nation, Wisconsin is experiencing an epidemic of drug overdoses, particularly fatal ones. The surge in overdose deaths since 2015 has been driven by fentanyl, a powerful opioid that is used medically to treat severe pain. However, in recent years it has been illicitly added to other drugs and to fake pills that look like prescription drugs, making them deadly.

Because they are derived from the poppy plant, opioids have been around for centuries. During the Revolutionary and Civil Wars, opium and morphine were used to treat pain in wounded soldiers. After both these wars, the addictive nature of these drugs became evident as many soldiers developed dependencies on the drugs.

In the early 1900s, the United States placed restrictions on these drugs, requiring a prescription to access them. During this time, the nation also outlawed heroin, which had been developed as a less addictive pain relieving drug.

The introduction in 1995 of OxyContin® marked the beginning of the opioid crisis that received much attention during the 2000s and 2010s. During this period, OxyContin®, which was marketed as a less-addictive opioid pill, and similar opioids were heavily prescribed resulting in more addictions and overdoses. The crisis led to lawsuits against the manufacturers, distributors, and retailers of these drugs.

Since about 2015, the opioid crisis has transitioned into a new public health emergency—one caused primarily by fentanyl. For decades, this drug has been used by doctors to treat patients in severe pain or those in end-of-life situations. It is 100 times more powerful than morphine, but also more addictive.

Because of its cost and potency, though, illegally-produced fentanyl is increasingly being added to heroin and other illicit drugs as well as to fake pills. Most users do not know the drug or pill contains fentanyl. Because it is so potent, it takes very little fentanyl to cause death.

In a span of just six years, the number of Wisconsin deaths associated with fentanyl or other synthetically produced opioids has soared from 113 in 2015 to nearly 1,300 in 2021. While that number may seem small, the rate of growth is not. During 2018 through 2021, deaths increased an average of 37% per year.

It is unclear what the solution is to this epidemic, but education is clearly part of it. This report attempts to be a part of that solution by highlighting the dangers of illicit fentanyl and exploring the many facets of this epidemic, including those population groups and regions that have been most affected.

OPIOIDS, AN OVERVIEW

Opioids are a broad group of drugs that are either derived from the poppy plant or created synthetically in a laboratory to mimic natural substances found in that plant. They have been used as a painkiller since the nation's inception. Opium was used in the Revolutionary war and morphine was given to injured Civil War Soldiers to ease their pain.

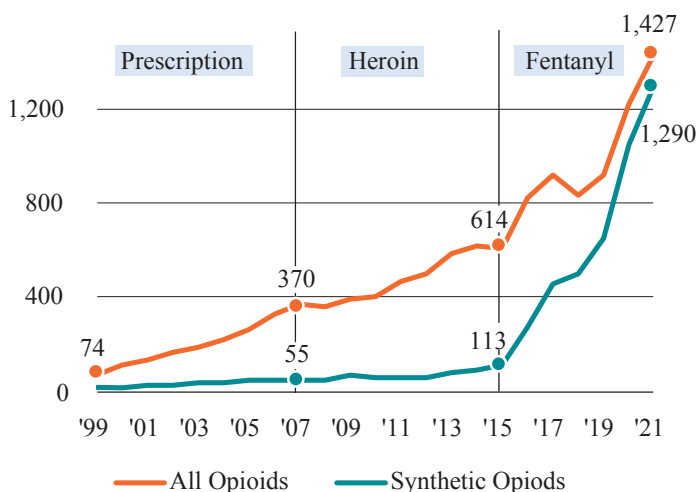
Today, a variety of legal opioids—codeine, morphine, oxycodone, methadone, and fentanyl—are prescribed by doctors to help patients deal with pain following surgery, from an injury, or for other sources of pain. When taken as prescribed, they can be extremely beneficial.

Of the fentanyl-laced fake prescription pills analyzed by the U.S. Drug Enforcement Administration in 2022, 60% contained a lethal dose of the drug.

They also come with the risk of overuse and addiction. These drugs trigger the release of endorphins in the body which temporarily muffle the user's perception of pain. They can also boost feelings of pleasure. Long-term use of these drugs can, over time, slow the body's production of endorphins. When this happens, the same dose provides less pleasurable feelings, leading some users to begin increasing the amount they take. This increased use of opioids can lead to dependence or addiction.

It is difficult to identify who is most likely to become dependent on these drugs. According to the Mayo Clinic, a person's history and length of opioid use play a role, but "it's impossible to predict who's vulnerable to eventual dependence on and abuse of these drugs."

Figure 1: History of Opioid Deaths in Wisconsin 1999-2021, Drivers of the Increase Listed For Each Period



In addition to the legal opioids mentioned above, there are illegal ones as well. At the top of this list is heroin which is used by some people to create feelings of pleasure. Because it is an opioid, it is very addictive, which is one of the reasons it is so dangerous.

Fentanyl

Fentanyl is a synthetically-produced opioid that was developed in 1959 and initially used as an intravenous anesthetic in the 1960s. Today it is prescribed by doctors for patients with severe pain, especially after surgery and for those with advanced-stage cancer.

Fentanyl is a very potent drug, about 50 times stronger than heroin and 100 times stronger than morphine. Just two milligrams of fentanyl can cause death.

While legal fentanyl is produced in the United States under strict controls, the illicit fentanyl making its way into this country is primarily coming from drug cartels in China, India, and Mexico. Because of its potency, this drug is now being used as an adulterant in many illicit drugs, in "street versions" of opioid pills such as OxyContin® and Percocet® and in street versions of Adderall®. These pills are increasingly deadly. According to the U.S. Drug Enforcement Administration, of the fentanyl-laced pills analyzed in 2022, 60% contained a lethal dose of the drug. That figure is up from 40% of pills analyzed in 2021.

Fentanyl is also sold illegally as a powder which can be snorted, and in liquid form which can be dropped onto blotter paper or put in nasal sprays and eye droppers.¹

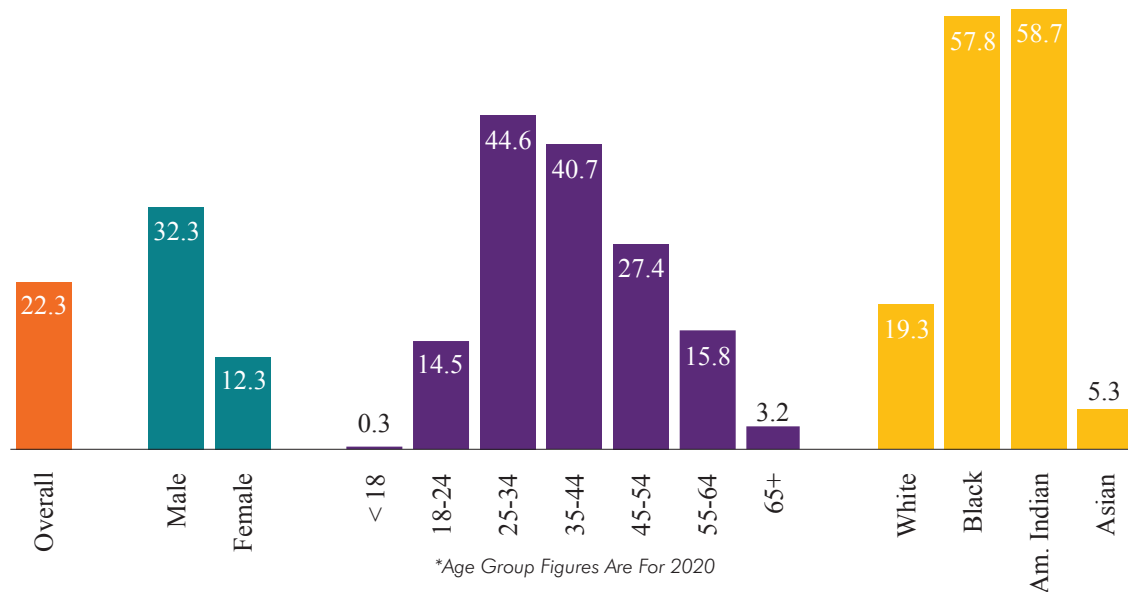
The combination of fentanyl's potency and the fact that users often do not know how much fentanyl, if any, is in a particular drug makes it easier for a user to overdose. The increasing presence of fentanyl in drugs and pills purchased on the "street" has led to an alarming increase in overdose deaths in Wisconsin.

OVERDOSE DEATHS INVOLVING FENTANYL

During the past 22 years, the number of drug overdose deaths in Wisconsin has soared, due largely to rising deaths involving opioids. From 1999 through 2021, drug overdose deaths increased more than 700%. During that same

¹ National Institute on Drug Abuse, 2021, Fentanyl Drug Facts.

Figure 2: Synthetic Opioid Mortality Rates
By Sex, Age*, and Race; 2021



period, overdose deaths involving opioids soared more than 1,800% (see orange line in Figure 1, page 6). While opioids were involved in about a third of drug overdose fatalities in 1999, they were involved in more than 80% in 2021.

The 22-year surge was driven by three different types of opioids, each being the major contributor to overdose deaths for six to eight years. During 1999 through 2007, prescription opioids were the primary driver. In 1999, prescription opioids were involved in less than 60% of all opioid overdose deaths. By 2007, that figure was 77%.

Over the ensuing eight years, from 2007 through 2015, heroin abuse drove opioid deaths. The number of deaths involving this illicit drug increased more than 700% during that period and heroin's share of opioid deaths rose from 9% in 2007 to 46% eight years later.

The most recent surge in opioid overdose deaths is being driven by synthetic opioids, particularly fentanyl. The number of deaths involving these types of opioids increased more than 1,000% over six years (teal line in Figure 1 on page 6). In 2015 less than 20% of opioid overdose deaths involved these drugs. By 2021, that figure had surged to 90%, with the primary synthetic opioid being fentanyl.

DEMOGRAPHY OF THE EPIDEMIC

In 2021, the mortality rate (deaths per 100,000 residents) for fentanyl (synthetic opioids) was 22.3. The rate was 1.6 in 2014 and 8.7 in 2018.

The fentanyl epidemic has affected nearly every demographic group in the state, but certain population groups have been impacted more than others. As highlighted in Figure 2, the epidemic has disproportionately affected:

- males compared to females;
- residents 25 to 54 years of age compared to the rest of the population; and
- Black and American Indian residents compared to white and Asian residents.²

A Greater Impact on Men

While the fentanyl epidemic has affected both men and women, it has had a much greater impact on Wisconsin's male population. In 2021, the male mortality rate for fentanyl-involved deaths was 32.3. That figure was 45% higher than the overall rate and 2.6 times higher than the rate for females (12.3).

² Wisconsin Department of Health Services reports deaths in five race categories: White, Black, American Indian, Asian, and Other. It also reports Hispanic and Non-Hispanic, though mortality differences between those groups is relatively small.

During 2015-21, fentanyl was linked to more than 4,300 deaths in Wisconsin, resulting in 155,000 years of potential life lost.

Young and Middle-Aged Adults

When deaths are grouped by age, three 10-year age groups stand out.³ Among those 25 to 34, the mortality rate was over 44. Mortality among those 35 to 44 was only slightly lower at just under 41. Finally, the 45 to 54 year old group also had an elevated mortality rate at 27.4.

Although not shown in Figure 2, males ages 25 to 44 have been hit particularly hard. This group's mortality rate was 61.7, more than three times the overall rate in 2020.

Variations By Race

Mortality rates among Wisconsin's Black and American Indian populations were even more elevated with rates above 57 per 100,000. For the Black population, mortality rates have nearly tripled since 2019, from 22 to 58. During that same period, the overall rate doubled. The state's Asian population was impacted the least among the four races reported by the Department of Health Services.

Combining race and age data from 2020 highlights several population groups that were most impacted.

- The mortality rate for 55 to 64 year old black residents (126.5) was 12 times higher than its white counterpart (10.4).
- For 45 to 54 year old black residents, the rate was nearly four times higher (90.2 vs. 23.2) than white Wisconsinites of the same ages.
- Among American Indian populations ages

25 to 64, the mortality rate was 2.5 times higher than for white residents (73.5 vs. 28.8).

A Top Killer

The figures above make clear that there are significant differences in fentanyl-related mortality among various demographic groups. A related question is: How do these mortality rates compare to overall rates? The answer is that fentanyl is the number one killer in several age groups.

Wisconsin's Department of Health Services provides mortality rates for 113 causes of death. Fentanyl-related overdose deaths fall in the category of "Accidental poisoning and exposure to noxious substances." If fentanyl-related deaths were treated as a specific cause of death, it would have ranked 59th in 2015, 26th in 2018, and 14th in 2020 among the state's total population. Cause of death data for 2021 were not available at time of publication.

As Figure 2 shows, those under 18 or over 65 have not yet been greatly affected by this epidemic. It is primarily young and middle-aged adults ages 25 to 54.

"Accidental poisoning and exposure to noxious substances" has been the number one killer in these age groups for many years. For Wisconsinites 35 to 44, this has been the top cause of death since 2005. For those 25 to 34 (2008) and 45 to 54 (2013), it became number one a little later. Since these years predate the fentanyl epidemic, this drug is not the reason this cause of death became number one. However, fentanyl does explain why it is now number one by a wide margin.

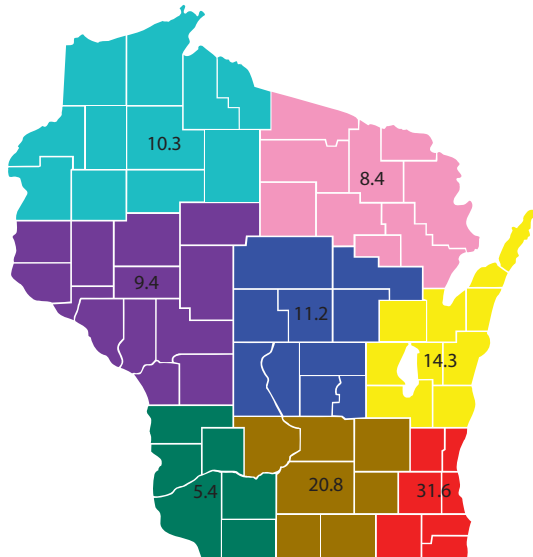
If fentanyl-related deaths was a ranked cause, in 2020 it would have been 2.6 times greater (332 vs. 126) than the number two killer (motor vehicle accidents) among those 25 to 34. Among those 35 to 44, motor vehicle deaths was also number two, but fentanyl-related deaths were 3.3 times greater (291 vs. 88). In the 45 to 54 year old group, the margin was narrower with fentanyl-related deaths 1.4 times greater than deaths from alcoholic liver disease at number two. With fentanyl deaths rising rapidly in 2021, these gaps widened significantly and will continue to grow until the epidemic is tamed.

Years of Life Lost

The number of deaths related to fentanyl is a tragedy. From 2015 through 2021, that number

³ Detailed population numbers were not available for 2021, so 2020 data are used. The overall mortality rate increased from 18.0 in 2020 to 22.3 in 2021.

Figure 3: Mortality Rates by Region
Deaths Involving Synthetic Opioids Per 100,000
Residents, 2020-21



totaled more than 4,300. Because it hit young and middle-aged adults so hard, another statistic better reflects the loss associated with the epidemic: the number of potential years of life lost.

Potential years of life lost is the difference between a person's age at death and some standard age, which varies depending on what a researcher is trying to measure. For this study, the standard age is the national life expectancy of 76 years.

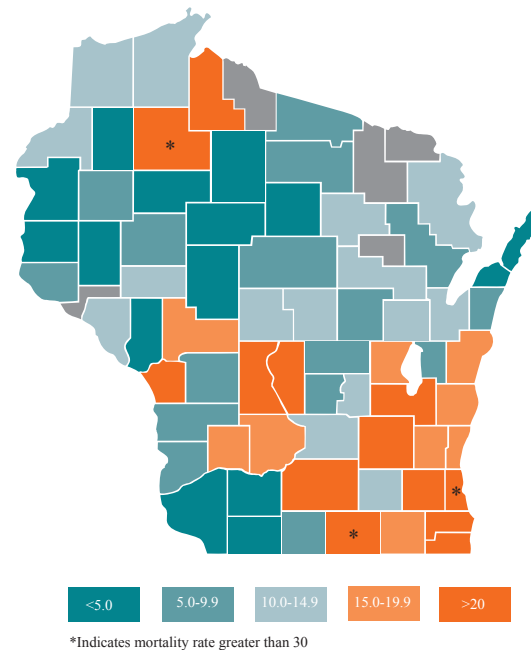
Between 2015 and 2021, the 4,300 deaths resulted in an estimated 155,000 years of life lost. In 2021 alone there were approximately 44,000 potential years of life lost, meaning that the cumulative total is likely to continue to grow rapidly.

The Geography of Deaths

While demographic characteristics show stark differences in fentanyl mortality, geographic differences exist but are a little less clear. There are both urban-rural and regional mortality differences, but the range of outcomes within these groupings is wide. In this report, an urban county is defined as one that is part of a metropolitan statistical area (MSA). In Wisconsin, 26 counties fit this definition.

Combining fentanyl-involved deaths for 2020 and 2021 show the average urban mortality rate was more than double the average rural rate (23.1 vs. 11.4). That urban/rural differential is much higher than the U.S. average. A 2022 National

Figure 4: Mortality Rates by County
Deaths Involving Synthetic Opioids Per 100,000
Residents, 2020-21



Center for Health Statistics report noted that in 2020, the national urban mortality rate was 18.3 compared to the rural rate of 14.3. Focusing in on rural Wisconsin, the epidemic was more acute in the rural south (mortality rate of 12.6) than in the rural north (8.0).

The fentanyl epidemic also has a regional component (see Figure 3), some of which is driven by urban/rural differences. Taken as a whole, the seven counties in the southeast corner of the state had the highest mortality rate in 2020-21 at 31.6, followed by south-central Wisconsin at 20.8, and east-central Wisconsin at 14.3 per 100,000 residents.

Rural southwest Wisconsin had lowest average rate at 5.4, about a quarter of the state average. In central, west central, and northern Wisconsin, mortality rates averaged between 8.4 and 11.2 per 100,000 residents.

While the urban-rural and regional rates provide broad patterns of fentanyl-related deaths, there were significant county variations within these groupings (see Figure 4). A good example of this variation is Sawyer County, a rural county in northwest Wisconsin. During 2020-21, the county's fentanyl-related mortality rate was 35.9 per 100,000 people, which was the second-highest

Fentanyl mortality rates have nearly tripled for Black Wisconsinites recently, rising from 22 per 100,000 residents in 2019 to 58 in 2021.

rate in the state behind urban Milwaukee County. Sawyer's rate was significantly above the average rural rate and the average rate in its region.

Another example is Adams and Juneau counties in central Wisconsin. Mortality rates in these two counties were 25.1 and 22.3, respectively. These rates were more than double the regional rate and about three times the rural rate.

What's Ahead?

The pattern of double-digit percentage increases in fentanyl-related deaths over the past nine years is alarming. However, incomplete data for 2022 provide some hope. Provisional figures from the U.S. Center for Disease Control and Prevention show overdose deaths involving synthetic opioids were about the same in 2022 as in 2021. Certainly, the number of deaths remains too high. But the reprieve from large increases is a step forward.

PREVENTION

There is no magic bullet that will end the fentanyl epidemic. However, steps can be taken to reduce the risks created by fentanyl.

Street Names

Users of illicit opioids often try to keep their use private or semi-private. This is especially true for minors. Knowing the common street names of these drugs can alert friends or family members to possible use. Common street names for fentanyl include: *Apache, China Girl, China Town, Dance Fever, Friend, Goodfellas, Great Bear, He-Man, Jackpot, King Ivory, Murder 8, Poison and Tango & Cash*.⁴

4 U.S. Drug Enforcement Administration, *Fentanyl Facts*.

Test Strips

Because fentanyl is undetectable by taste, smell, or sight, many users of illicit drugs do not know they are taking it. However, fentanyl test strips are available to identify the presence of fentanyl in unregulated drugs, powders, and pills.

NARCAN

A third prevention strategy for those using fentanyl or for someone who is around a user is access to naloxone or NARCAN®. This is a nasal spray drug that can temporarily reverse the effects of an opioid overdose. It blocks the opioid's effects on the brain and restores breathing. The drug is harmless if given to someone who isn't experiencing an overdose and has no potential for abuse.

NARCAN® is widely available in the state and can be purchased at hundreds of pharmacies. It can be obtained at no cost to people who attend a free training session at one of the many agencies that are part of the NARCAN® Direct Program. Most county health departments can assist in locating NARCAN® or test strips.

Educate

Most Wisconsinites have heard of fentanyl, but many do not know much about it. Educating oneself and others on fentanyl is part of the solution to this epidemic. Wisconsin's Department of Health Services website (<https://www.dhs.wisconsin.gov/opioids/facts.htm>) is a great place to start. Their brief video (<https://www.youtube.com/watch?v=OVuGHI7FE6Q>) on fentanyl is particularly helpful.

FINAL THOUGHTS

Illicit fentanyl has been a scourge on the nation and Wisconsin since 2015. Through last year, this drug has been associated with more than 5,600 deaths and an estimated 200,000 potential years of life lost in the state.

While the increase in deaths appears to have waned in 2022, the fight is far from over. In 2022, the U.S. Drug Enforcement Administration (DEA) seized more than 50.6 million fentanyl laced pills, double the number seized in 2021, and 10,000 pounds of fentanyl powder. DEA estimated that these seizures represented more than 379 million potentially deadly doses of fentanyl. To put that number in context, the entire population of the U.S. is 332 million.

