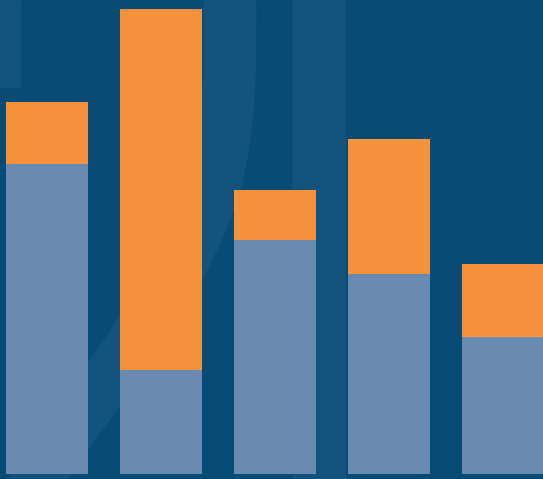


SKAGIT COUNTY

Opioid Dashboard



December 2018



Introduction

In 2015, Skagit County embarked on a Community Health Assessment (CHA) process in collaboration with the Population Health Trust. The community-at-large resoundingly identified the opioid crisis as their greatest concern.

Skagit County Population Health Trust formed the Opioid Workgroup Leadership Team (OWLT), charged with:

1. Understanding the scope of the opioid problem in Skagit County
2. Understanding what was being done throughout the community to address the problem
3. Identifying opportunities to do more
4. Developing an action plan

Preliminary data collected by state and local entities allowed OWLT to begin identifying the scope of the opioid crisis beginning in 2016. OWLT partners knew that initial data would be inconsistent and incomplete because few data collection systems or standards existed. In March of 2018, Skagit County Public Health received funds from the Center for Disease Control and Prevention (CDC) Prescription Drug Overdose Prevention Grant to do a deep-dive into data sources that illuminate the scale and trends of the opioid epidemic and its local impacts. This grant allowed us to better understand populations affected, populations at risk, systems impacted, and services available. We were also able to standardize data collection and methods to ensure comparability. These indicators, when combined together, allow us to track important outcomes related to the opioid epidemic and evaluate the efforts made to combat it. This is the Skagit County Opioid Dashboard.

Indicators presented in the Skagit County Opioid Dashboard echo but also augment the data indicators followed by the *Washington State Opioid Response Plan*¹ and the *North Sound Behavioral Health Organization Regional Opioid Reduction Plan*.² Across these jurisdictions, we are following opioid prescribing patterns, youth misuse of opioids, and opioid overdose reversals reported by syringe service programs. Yet, only through local partnerships are we able to provide additional clarity to data on fatal and nonfatal opioid overdoses as well as naloxone distribution including private purchases. This data dashboard serves as a status monitor for the opioid crisis in Skagit County as well as an evaluative tool for strategies in the *OWLT Community-Wide Action Plan and Call to Action*.³ Going forward, we aim to include more data sources such as law enforcement, jail and corrections, tribal treatment and experiences, and treatment data.

Small Numbers Caveat

Though considered a Metropolitan Service Area by the Census, Skagit County has a relatively small population compared to other jurisdictions. With 124,100 residents in 2017, tracking data and evaluating change is statistically challenging. Skagit County often has similar disease rates compared to other counties (for example, the number of people who have diabetes per 100,000 people). However, when interested in a change in rates over time, the actual number of cases used in the calculation—in this example, the number of people with diabetes at two time points—needs to be sufficiently large to detect significant change. This is sometimes referred to as “statistical power” to detect a difference.

Purpose of this Report:

This report highlights the high-level outcomes of the opioid crisis that OWLT and partners are working to change. This data calls us to action. Though this is not all the data available regarding the opioid epidemic and its causes, these select indicators are the ones we will track into the future to evaluate the progress we are making toward strategies put forward in the *OWLT Community-Wide Action Plan and Call to Action*. Individual strategies or actions in the plan might call on other specific data. Here we present a few key indicators to measure our progress over time.

Our challenge is that data may be affected by random fluctuations between successive measurements, for example for different years. The effect of such random fluctuations on disease or death rates is proportionately larger when the number of cases is small. Thus, when we look at rare but important health conditions like fatal opioid overdoses, we struggle to prove statistically significant change. Nonetheless, tracking this data over time will allow for continued discussion, analysis, and data-informed decisions as partners across Skagit County implement strategies to stop this epidemic.

In this report, we will note where statistically significant differences do exist. When there is no such note, then the difference being examined did not reach statistical significance and one of the reasons this occurs is because of small numbers of cases. [Additional information on statistical methods used is included in the Appendix.]

*Skagit County Public Health convenes partners to **prevent** disease, **promote** wellness, and **protect** the health of our community in order to foster a thriving, collaborative and cohesive community where everyone has the opportunity to reach their health potential.*

Acknowledgements

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- Skagit County Coroner's Office
- Skagit County Emergency Medical Services
- Washington State Department of Health

Skagit County Public Health would appreciate receiving details of any use made of this material in outreach, education, program design, implementation, or evaluation.

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This is the sharp tip of the iceberg. Opioid use disorder wrecks lives in lots of other ways but these are preventable deaths.”

Howard Leibrand
Skagit County Health Officer

Know the symptoms of an opioid overdose:

1. Pinpoint pupils
2. Unconsciousness
3. Respiratory depression

Naloxone can immediately reverse an opioid overdose and save a life. Consider having naloxone on hand.

Naloxone might not work if the opioid is too strong (e.g. fentanyl or carfentanil), if there are other substances affecting the person, or if it is not an opioid overdose.

Call 911.

To find out more on how to identify and respond to an opioid overdose, go to StopOverdose.org.

Fatal Opioid Overdoses

In its most tragic form, the opioid epidemic has led to the deaths of friends and family across the nation and in Skagit County. Though counting deaths does not fully capture the human costs of opioid use disorder and the opioid epidemic at large, it is an ultimate measure of the crisis.

The Skagit County Coroner determines the cause and manner of death for an average of 430 people per year. The Coroner’s Office investigates sudden, unexpected deaths that occur under violent or suspicious circumstances, as well as unexplained deaths. Since 2016, the Coroner’s office has taken additional steps to document drug overdoses and has retrospectively reviewed cases going back to 2009 to develop a more accurate count.

From 2009 to 2017, 126 Skagit residents died from opioid overdoses alone. This means on average 14 people die every year from a fatal opioid overdose (95% Confidence Interval: 11.0-17.0). Deaths include

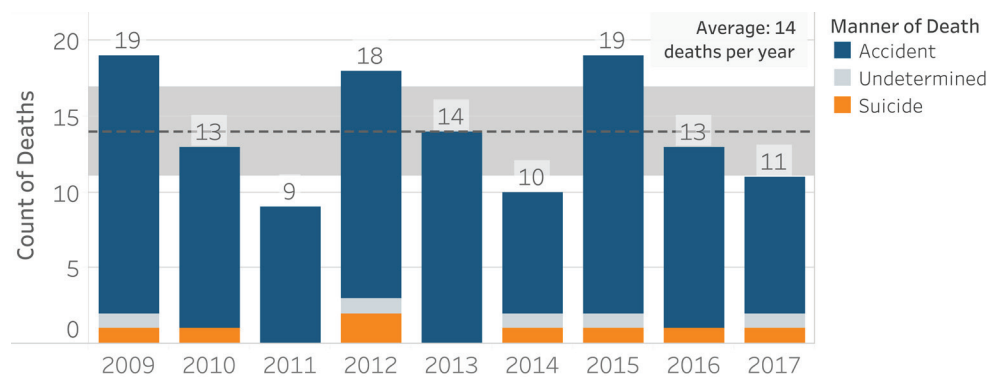
certain (123) and presumed (3) opioid overdoses. Presumed means that there was no toxicology available

to confirm it as an opioid overdose or that toxicology is still pending. Currently, there are immense delays in toxicology testing. Following improvements to the toxicology process, future analysis will examine the type of opioid implicated.

From 2009 to 2017, 126 Skagit residents died from opioid overdoses alone.

The Coroner’s Office certifies deaths by cause and manner, which shows that 90% of fatal overdoses are accidents (113/126), 6%, are suicides (8/126), and 4% are undetermined (5/126) [Figure 1]. Only complete years are shown in the graph for consistency. In the first three quarters of 2018, January through September, 16 fatal opioid overdoses have occurred: 12 certain and 4 presumed. All have been accidents.

Figure 1
Fatal Opioid Overdoses in Skagit County, 2009-2017



Note: Dashed line shows mean. Grey bar shows 95% confidence interval around the mean.

Summarizing trends over time is difficult for several reasons. First, local numbers for opioid overdoses currently do not match Washington State data records for Skagit County. Local numbers are higher likely because of increased scrutiny and case finding by the Coroner’s Office. Second, an average of 14 overdoses per year is a small number, yet it has a relatively large impact in our small county. Small numbers mean that there is proportionately greater variability from year to year—decreasing from 13 fatalities to 11 is a 15% decrease.

We can stabilize estimates by combining multiple years of data to increase the total sample size. Using local data and comparing to statewide opioid overdose numbers, Skagit County appears to have a higher rate of fatal opioid overdoses per 100,000 people, adjusted for age. However this difference is not statistically significant. At this time there is no clear and significant trend for fatal opioid overdoses in Skagit County, yet we will continue to monitor these numbers going forward.

Table 1. Opioid Overdose Mortality Rates per 100,000 People*

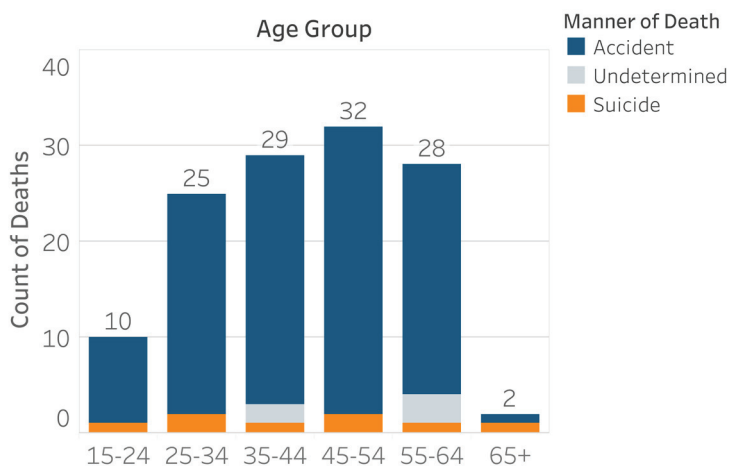
Time Frame	Number of Years Aggregated	Skagit Rate (95% CI)	Washington Rate (95% CI)
2015-2017	3	11.6 (8.2-15.9)	9.4 (9.0-9.8)
2013-2017	5	11.4 (8.7-14.6)	9.2 (8.9-9.5)

*Rate adjusted for age. Methods described in the Appendix.

Demographics

Demographic characteristics of overdose deaths in Skagit County match those seen nationwide: more men than women fatally overdose and overdose affects a wide range of ages—90% being adults 25 to 64 years old⁴ [Figure 2]. Over 9 years, 55% of opioid overdose deaths were men and 44% were women. On average, 7.8 males die of opioid overdose each year (95% CI: 5.8-9.7), compared to 6.2 females (95% CI: 4.7-7.7). Notably, 7 female overdoses, compared to 1 male, were suicides. This is consistent with national trends that females are more likely to commit suicide by poisoning.⁵

Figure 2
Fatal Opioid Overdoses by Age Group and Manner, 2009-2017



Keep in Mind

Due to many competing forces, we cannot always pinpoint a specific cause for changes in the number of fatal opioid overdoses year to year. An increase could be because potent synthetic opioids like fentanyl or carfentanyl, known to be 50 and 5,000 times stronger than heroin⁶, have been intentionally added to the drug supply. It could be compounded by a lack of naloxone available to reverse opioid overdoses; it may take more than one naloxone kit to reverse a more potent opioid. It could also be because of an increase in the underlying population misusing opioids; then, in the context of this larger population, the greater number of fatal overdoses remains proportionate. Any of these forces can be working together to drive these trends. Regardless of cause, the data is still important for understanding the impact of the opioid epidemic in our community.

On Average

14 people
DIE EVERY YEAR

FROM A FATAL
OPIOID OVERDOSE
(2009-2017)



Going Forward

“There are lots of other causes of death of people with opioid use disorder besides overdose.” Howard Leibrand, Skagit County Health Officer, points out. “Overwhelming sepsis, blood infections, heart valve infection, resulting congestive heart failure... All of those other things kill more people than the opioid overdoses. But on death certificates, we have been lax in attributing them to the underlying opioid use disorder.”

There are efforts underway by the Coroner’s Office to better document deaths where opioid use was a contributing factor. However, the Coroner’s Office does not investigate all deaths in Skagit County, and thus does not have jurisdiction over most natural or unexplained deaths. Instead, we will have to encourage other experts to document a history of opioid use and determine if it contributed to the cause of death. Ideally, future data would begin to measure the full impact of opioids on life expectancy and mortality.



These are near misses. This is how many instances where the bullet flew over their heads.

The fatal ODs are the ones that hit home.”

Lin Tucker

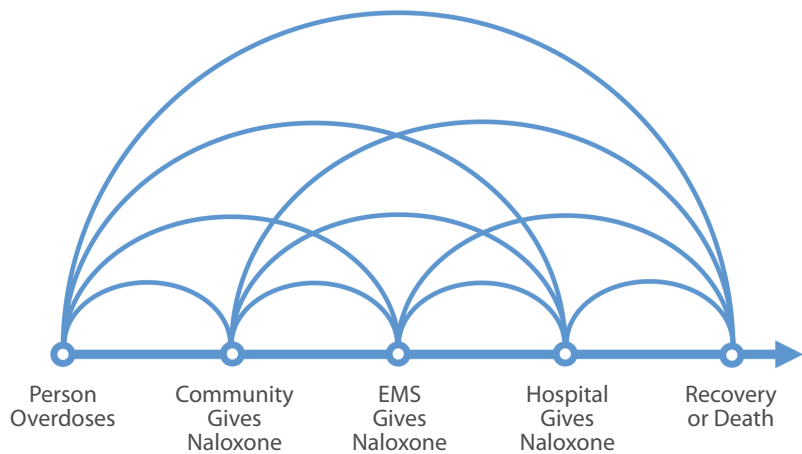
Chief, Sedro Woolley Police Department

Naloxone is the antidote to an opioid overdose. With a sufficient dose, naloxone immediately revives a person. Naloxone lasts between 30 and 90 minutes, while the effects of opioids may last longer. A person should be monitored even after being revived with naloxone because they may still have opioids in their system that can cause them to go into an overdose again. Naloxone has no effects on a person who is not experiencing an opioid overdose. Other names for naloxone are Narcan® and Evzio®.

Nonfatal Overdoses

When attempting to assess instances of nonfatal overdose, we quickly faced challenges because there are many different ways a person can get care for an overdose. “The whole issue of overdoses and of counting overdoses has been hard from the very beginning,” per Howard Leibrand, Skagit County Health Officer. A person could overdose and then get naloxone from a friend (or not), get treated by EMS (or not), sent to the hospital (or not), and then recover (or not). People in Skagit County have gotten help in a myriad of ways [Figure 3]. Any of these touch points can then report the overdose. Thus, our challenge is to count one overdose, one time.

Figure 3
The Many Combinations of Ways a Person Gets Help for an Overdose



To identify unique overdoses, we matched Emergency Medical Services (EMS) and Phoenix Recovery Needle Exchange data. EMS tracks each naloxone administration. If a patient improved with naloxone, we considered it a probable opioid overdose. Phoenix Recovery gives out free naloxone kits and when people come back for a refill, Phoenix asks if the person used the kit and the circumstances of the overdose. We considered these self-reported overdoses to be cases of community opioid overdoses. Based on date, location, and whether a community member called 911 or not, we are able to make a best-guess match between EMS and Phoenix data so we count a shared overdose only once between the two data sources. [To learn more about this method, please see the Appendix.]

Next, we brought in data from the three hospitals in Skagit County (Skagit Valley Hospital, PeaceHealth United General Hospital, and Island Hospital). Hospital staff diagnose patients with opioid overdose based on symptoms, toxicology, or a positive reaction to naloxone. Billing staff then code the diagnosis as an ICD-10 code. Using ICD-10 codes standardized for opioid overdoses by the CDC, hospitals were able to get aggregate numbers of opioid overdoses. Only in 2017 did all three hospitals have data on opioid overdoses due to changing electronic medical record systems. We did not have patient-level information from hospitals, but based on EMS and Phoenix data we know which of those overdoses ended up at the hospital. We subtracted this number from the hospital data to get the best estimate of documented and deduplicated overdoses in 2017. These represent single overdose events, not unique people who overdose. If a person overdosed multiple times in the year, each overdose event is counted.

Using this method, we identified 298 nonfatal overdoses and 11 fatal overdoses in 2017. Adjusted for the county population, this is 240.1 nonfatal overdoses per 100,000 people (95% CI: 214.0-268.6). This is a conservative estimate; we know there are overdoses that are not reported to Phoenix Recovery, EMS or local hospitals. We also know that not every opioid overdose reverses with naloxone, for example overdoses from synthetic opioids like fentanyl. In an effort to be precise, this method is specific so that conditions other than opioid overdoses are removed from the figure. [See Appendix for more information.]

Though opioid overdoses can be life threatening, few ended in death (4%). Yet near-death experiences like nonfatal opioid overdoses are severe outcomes, and are likely to happen again. People who have nearly died from an opioid overdose are more likely to overdose again, and to die from a subsequent opioid overdose.^{7 8} Additionally, nonfatal overdoses can be important opportunities for intervention. A near-death experience can create strong change narratives for some individuals. It can also illuminate the dangers of prescribed medication among those who did not realize the risks.

2017:
298
NONFATAL OVERDOSES

&

11
FATAL OVERDOSES

- Among the 298 nonfatal overdoses in 2017:**
- 17% never saw a medical professional (EMS or hospital) (52/298)
 - 79% were seen by the hospital at some point in their care (236/298)
 - 4% were seen by EMS at some point in their care and were not transported to the hospital, either per protocol or because the patient refused (11/298)

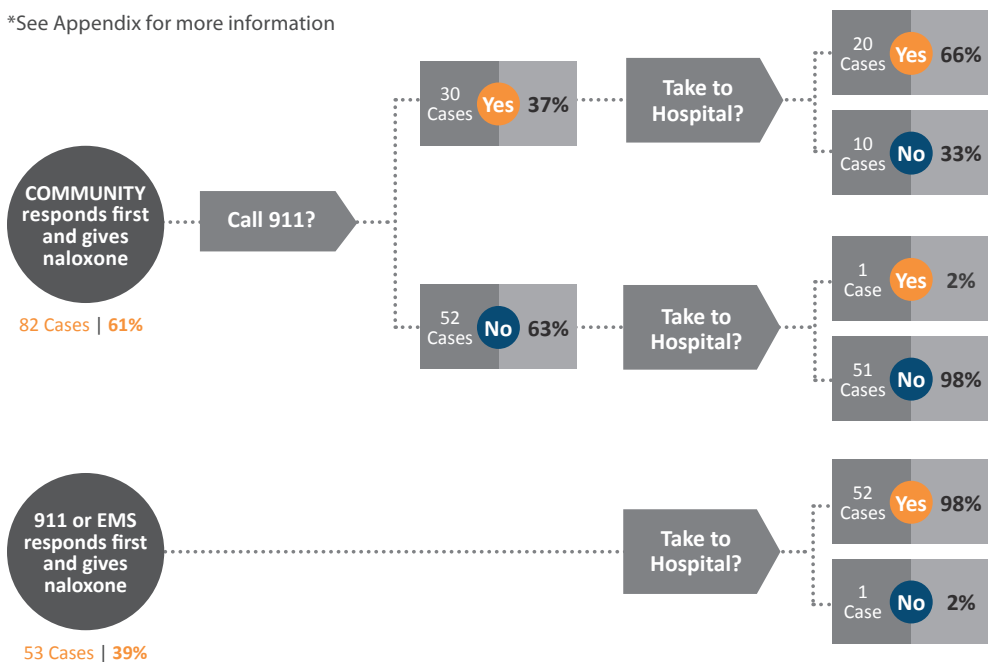
Pre-Hospital Overdoses

More than half of the overdoses presented *only* at the hospital and we found no record of them being seen by EMS or community (163 overdoses, 55%). For the remaining 135 overdoses (45%) that did have a community or EMS record, we can outline the care continuum and show the touchpoints for overdoses in 2017 [Figure 4]. We refer to community and EMS-reported overdoses together as “pre-hospital overdoses”.

Figure 4
Pre-Hospital Overdose Responses | 2017

Matched Phoenix Recovery and EMS Data | 135 overdoses | Fatal outcomes unknown*

*See Appendix for more information



People who have nearly died from an opioid overdose are more likely to overdose again, and to die from a subsequent opioid overdose.

Pre-Hospital Overdose Takeaways:

- 61% of pre-hospital overdoses began with a community member giving naloxone; in 39% of cases, EMS was the first to respond and give naloxone
- Out of the overdoses that began with a community member giving naloxone, 62% did not see any medical provider (EMS or a hospital) (51/82)
- When EMS responded first, they transported 98% of the time; when community responded first and then called 911, EMS transported 66% of the time

Geographical Distribution of Pre-Hospital Overdoses

We can also present pre-hospital overdoses by where they occurred. We do not have event location for the 163 overdoses only seen by a hospital so the data presented below is a *limited* picture of overdoses. However, it is important to track the locations of overdoses to understand how different areas are affected.

We present both the number of overdoses and the rate per area, which adjusts for the population of that area. Both numbers are important because the total number of overdoses between two areas may be the same, but the proportional impact on the community is different in a large city versus a small town [Table 2].

Usually, the standard is to show rates per 100,000 population. However, since we are showing geographies with less than 100,000 people, we are matching the rate to the context by using a standard of 10,000 people. From darkest to lightest, the color gradient ranks the areas from highest to lowest, respectively, by their overdose counts and the rate per 10,000.

From 2016 to 2017, no area experienced a statistically significant change in their rate of pre-hospital overdoses. However, we will continue to follow these numbers and trends going forward. [See Appendix for methods.]

Table 2. Count and Rate of Pre-Hospital Overdoses by Area

Year	Statistic	Area					
		Skagit County	Mount Vernon	Sedro Woolley	Burlington	East County	West County
2016	Pre-Hospital Overdoses	105	37	26	20	12	10
	Population	122,270	48,225	25,272	19,518	5,109	25,828
	Rate per 10,000* (95% C.I.)	8.59 (7.1-10.4)	7.67 (5.5-10.5)	10.29 (6.9-14.9)	10.25 (6.4-15.5)	23.49 (12.7-39.9)	3.87 (2.0-6.9)
2017	Pre-Hospital Overdoses	135	60	25	24	14	12
	Population	124,100	49,134	25,400	19,787	5,210	26,219
	Rate per 10,000* (95% C.I.)	10.88 (9.2-12.8)	12.21 (9.4-15.6)	9.84 (6.5-14.3)	12.13 (8.0-17.8)	26.87 (15.3-44.0)	4.58 (2.5-7.8)

Legend: Highest Number      Lowest Number

*Number of overdoses divided by population of area, and then multiplied by 10,000.

Note: The population sizes used for sub-county geographies do not add up to total estimated population of the county because of zip code bleed-over across county lines.

How we defined areas:

Mount Vernon: Big Lake, Conway, Lake McMurray, Mount Vernon

Sedro Woolley: Clear Lake, Sedro Woolley

Burlington: Alger, Allen, Bay View, Bow, Burlington, Edison

East County: Concrete, Hamilton, Lake Cavanaugh, Lyman, Marblemount, Rockport

West County: Anacortes, La Conner

Geographical Differences in Pre-Hospital Overdose Responses

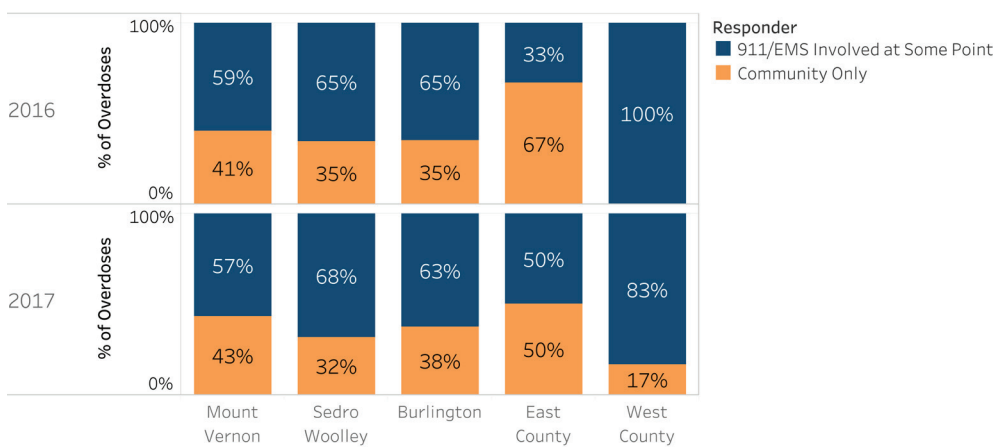
The response to pre-hospital overdoses also differs by area [Figure 5]. Here we compare overdoses reversed by community members alone to overdoses in which 911 or EMS was involved at some point in the care for the overdose.

In **Mount Vernon**—the area with the most pre-hospital overdoses—ratios have remained consistent. More than half of overdoses involved 911/EMS at some point (59% in 2016, 57% in 2017)

West County shows the highest proportion of pre-hospital opioid overdoses that involved 911/EMS at some point (100% in 2016, 83% in 2017)

East County shows the highest proportion of community-reversed overdoses without any 911/EMS involvement (67% in 2016, 50% in 2017)

Figure 5
Pre-Hospital Overdose Response by Area



Keep in Mind

Getting a true count of nonfatal opioid overdoses remains challenging. We are only able to report the number of *documented* opioid overdoses. For example, currently only Phoenix Recovery is tracking community-reversed overdoses. When someone returns to Phoenix for a new naloxone kit, Phoenix asks details about when the person used their previous one. If someone purchased or received naloxone elsewhere, they likely would not report it to Phoenix. Therefore, many opioid overdoses reversed in the community go undocumented. However, the current way we track overdoses is systematic and repeatable. Therefore, even though we know the figure to be an undercount of the true number of opioid overdoses, this method allows us to observe trends over time.



Going Forward

Finding the best way to measure nonfatal opioid overdoses is an evolving process. We will continue to work to improve our system to better measure the number of opioid overdoses in our county. If we, or our partners at Phoenix Recovery, EMS, and the Skagit hospitals, find a better way to get a more accurate number we will provide that updated data and highlight the changes made.

ONE OVERDOSE REVERSED FOR EVERY FIVE Kits

handed out by
PHOENIX RECOVERY
in 2017

Get a naloxone kit from:

- Your health care provider
- Phoenix Recovery Services
- Events like *International Overdose Awareness Day*
- Pharmacies that will dispense naloxone on behalf of a health care provider; identify one near you at StopOverdose.org

Naloxone Distribution

A key tool in fighting the opioid epidemic is naloxone, the antidote to an opioid overdose. Increasing the number of naloxone kits in the community and in the hands of first responders or community organizations is an evidence-based strategy to save lives⁹. Local data from Phoenix Recovery Needle Exchange proves this. In 2017, Phoenix distributed 469 kits used on 93 overdoses. This means for every 5 kits handed out by Phoenix Recovery, 1 overdose was reversed. We also know that kits distributed are saving lives beyond Skagit County borders. Since 2016, 15% of overdoses reversed with Phoenix Recovery naloxone kits were outside of Skagit County and reached from Clark to Whatcom counties. In total, from February 2016 to November 2018, Phoenix Recovery naloxone kits reversed 270 overdoses.

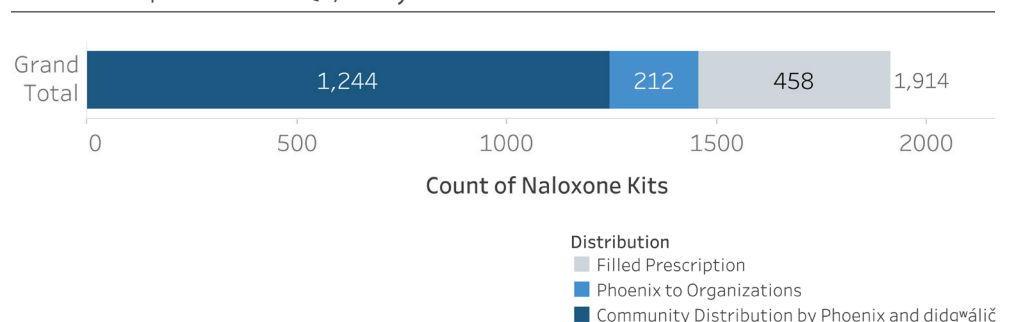
So far, Phoenix Recovery is one of the only sources we have to know whether a community member used a naloxone kit to reverse an overdose. When someone returns to Phoenix Recovery for a new kit, they are asked about the circumstances in which they used their naloxone. Only then can we find out about overdoses reversed by community members. Currently there is no way to follow up on naloxone purchased in pharmacies, so we cannot know whether those kits were used to save lives. Yet we can tally the total number of kits distributed or purchased in the county to understand the community's ability to respond to the opioid epidemic.

To understand the number of kits distributed, we obtained data from three sources:

- 1 ADAPT Pharma:** data on the number of naloxone kits purchased by individuals, including Narcan®, Evzio®, and naloxone brand purchases. Data available 2016 to present.
- 2 Phoenix Recovery Needle Exchange:** data on naloxone kits provided free of charge to community members and organizations. Data available 2016 to present.
- 3 didg^wálič Wellness Center of the Swinomish Indian Tribe:** data on naloxone provided free of charge to community members and data on prescribed naloxone purchased at the La Conner Pharmacy (this pharmacy was not accounted for in the ADAPT Pharma data). Data available January 2018 to present.

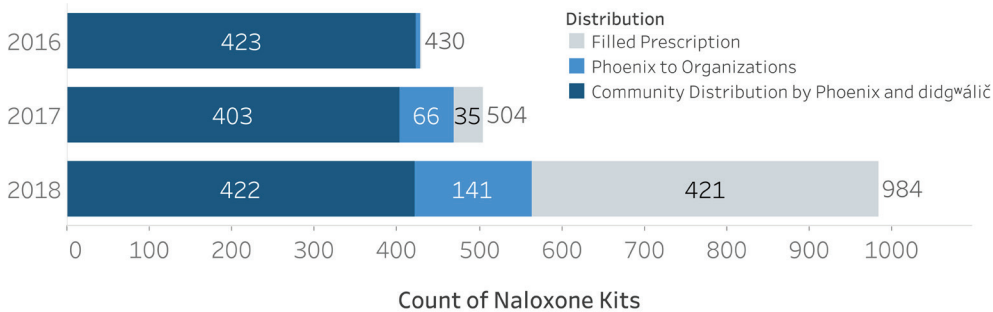
From 2016 through September 2018, a total of 1,914 naloxone kits have been distributed in Skagit County [Figure 6]. The majority of kits were provided free of charge to community members (65%). Another 11% of kits were provided to community organizations like police departments and training organizations. The remaining 24% of naloxone kits were purchased by individuals at pharmacies, and the majority of those purchases occurred in 2018. There were 421 naloxone kits purchased in the first three quarters of 2018 alone, compared to 35 naloxone kits purchased in all of 2017.

Figure 6
Grand Total | 2016 - 2018 Q3, 2.75 years



Individual purchases are an important indicator because they might signal an increasing effort by healthcare providers to talk about overdose risks with patients receiving high-dose opioids or risky co-occurring prescriptions. Citizens might also prefer getting naloxone from pharmacies and prescribers rather than established community-based organizations. Because of the increase in individually purchased naloxone from pharmacies, the number of naloxone kits increased dramatically overall from 2017 to 2018 [Figure 7].

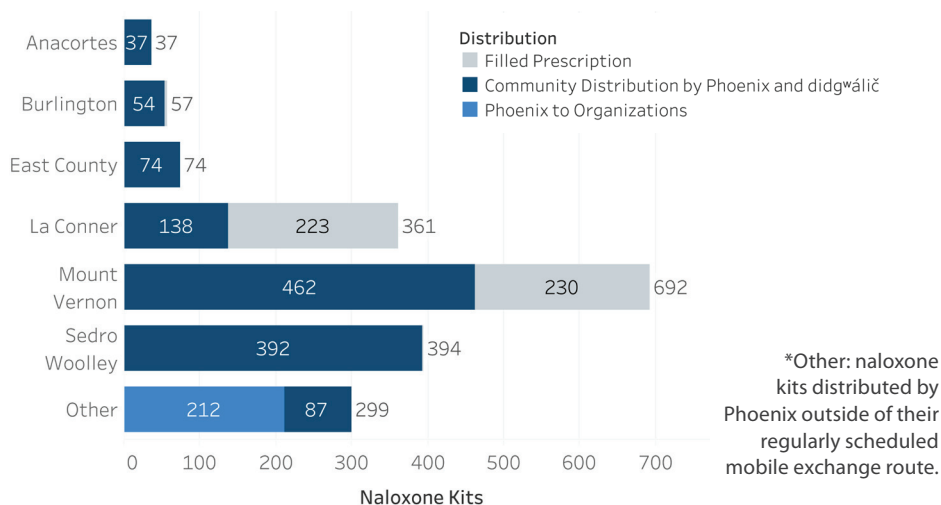
Figure 7
Naloxone Distributed by Year | 2016 - 2018 Q3, 2.75 years



The number of kits given directly to community members has also increased: in the first three quarters of 2018 more kits have been distributed than the total of 2017 (422 compared to 403). This is in part because didgʷálič Wellness Center began providing medication-assisted treatment (MAT) for opioid use disorder in January 2018 and has since distributed 138 kits to community members. Phoenix Recovery has consistently been the biggest provider of community naloxone and has handed out 1,110 kits to community members and 222 kits to organizations since 2016.

Geographically, Mount Vernon residents purchased and received the most naloxone kits. La Conner prescribed nearly as many naloxone kits from didgʷálič Wellness Center’s MAT program. Sedro Woolley received a substantial amount of naloxone from Phoenix Recovery but did not show any individual prescription purchases [Figure 8].

Figure 8
Naloxone Distributed by Community | 2016 - 2018 Q3, 2.75 years



*Other: naloxone kits distributed by Phoenix outside of their regularly scheduled mobile exchange route.

Feb 2016 - Nov 2018
PHOENIX RECOVERY
NALOXONE
KITS HAVE
REVERSED
270
Overdoses

Keep in Mind
There are some challenges to individual prescription data. ADAPT Pharma provided individual prescriptions by pharmacy zip code. However, pharmacies were notably missing based on data obtained from other sources, like La Conner Pharmacy. We presume that if a corporate pharmacy has a zip code based on its headquarters, which may be outside of Skagit County, then the prescriptions would not show as Skagit County prescriptions. It would improve data quality to have patient zip code rather than pharmacy zip code; however, this data is not available currently.

What is opioid misuse?

This term includes the misuse of prescription opioid pain relievers and/or the use of heroin. Misuse of prescription opioids means taking a medication in a manner or dose other than prescribed; taking someone else's prescription, even if for a legitimate medical complaint such as pain; or taking a medication to feel euphoria (i.e., to get high). Opioid misuse does not expressly indicate whether a person has opioid use disorder.

We estimate
PHOENIX RECOVERY
NEEDLE EXCHANGE

SERVED
1,599
OPIOID USERS

WHO INJECT DRUGS
IN 2017

Adults and Opioid Misuse

A complex question we, and others, are trying to answer is how many individuals in the community misuse opioids and how do we reach them? The 2017 National Survey on Drug Use and Health showed 4.2% of people aged 12 years or older misused any opioid within the last year, the vast majority of whom misused prescription opioids (4.1%).¹⁰ If we use this estimate and apply it to Skagit County, this would mean approximately 5,212 people misused any opioid, of which 5,088 misused prescription opioids in 2017. Unfortunately, this information is based on a national representative sample and therefore does not specifically reflect our local context. The local data we do have comes from the Washington State Syringe Exchange Health Survey which tracks detailed information on the population that injects drugs.¹¹

In 2017, all syringe exchange programs in Washington conducted a voluntary, anonymous survey among clients 18 and older. Phoenix Recovery Needle Exchange surveyed 67 individuals on a breadth of information regarding healthcare, behaviors, perceptions, drug preferences, and syringe use and reuse. The survey used a convenience sample method. A total of 1,079 individuals were surveyed statewide.

Using data from this survey and the number of syringes exchanged through Phoenix Recovery, we can approximate the total population of people who inject drugs in Skagit County [Table 3]. In 2017, we estimate that Phoenix Recovery Needle Exchange served 1,786 people who inject drugs of any type. Nearly 90% used opioids in the last 3 months. Thus we estimate the Needle Exchange served 1,599 opioid users who inject drugs in 2017. This is equivalent to 1.7% of the Skagit County adult population. The majority of respondents reported heroin as their main drug (67%). However, it is evident that most beneficiaries use multiple substances: 76% of respondents mixed opioids and stimulants. Statewide, 53% of respondents reported being “hooked on” prescription opiates before beginning to use heroin.

Table 3. Skagit County Estimates of People Who Inject Drugs (PWID)

Based upon 2017 Washington State Syringe Exchange Health Survey & Number of Syringes Exchanged

Indicator	Source of Data	Number
Average # of days survey respondent injected in the past week	Survey	6.5
Average # of times injecting per day	Survey	3.6
Average # of times using a syringe	Survey	2.3
Average # syringes used per day	Calculated*	1.45
Average # syringes per year per person	Calculated*	530
Total # of syringes exchanged in Skagit in 2017	Program	947,280

People Who Inject Drugs

Estimated # of people who inject drugs in 2017	Calculated*	1,786
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Opioid Users Who Inject Drugs

% of survey respondents who reported any opiate use	Survey	89.6%
Estimated # of people who inject drugs who use opioids	Calculated*	1,599

Opioid Users Who Inject Drugs Interested in Reducing or Stopping Use

% of survey respondents “very” or “somewhat” interested in reducing or stopping opioid use	Survey	55.2%
Estimated # of people who inject drugs interested in stopping or reducing opioid use	Calculated*	882

*See Appendix for formulas for calculated fields

Overdoses are common in this population with 69% of respondents reporting that they witnessed an overdose in the last 12 months. Approximately 1 in 5 reported that they mixed benzodiazepines or alcohol with opioids at least “some of the time”—a serious risk factor for overdose (18%). Another 73% reported injecting alone at least “some of the time.” Only a few reported using fentanyl recently (4%). Encouragingly, the majority of respondents had a take-home naloxone kit from Phoenix Recovery within the last 3 months (76%).

Treatment

More than half of the respondents who used opioids indicated wanting to reduce or stop their opioid use, meaning an estimated 882 people who inject drugs might be interested in treatment services (55%). Survey respondents were most interested in medication-assisted treatment (MAT) (66%), followed by 1-on-1 counseling for addiction (38%), and outpatient treatment services (34%). It is also important to note that not all people who use opioids want to reduce or stop their use; 33% of respondents

882 people who inject drugs might be interested in treatment services.

who used opioids were not interested in reducing or stopping their use at the time of the survey. The remaining 12% were not sure they wanted to reduce their use.

Co-occurring disorders are also a concern: over half of respondents were concerned about their mental health (54%).

Demographics

Demographics of the survey show that the majority of respondents were white (85%) and male (64%). The average age of respondents was 36 years old but ranged from 20 to 70. Evidently, respondents began injecting at a young age: 61% started before the age of 26, and 31% started before the age of 18. Only 37% of respondents had permanent housing while 33% reported being homeless and 30% had temporary or unstable housing.

Keep in Mind

These numbers are likely an *underestimate* of the population who inject drugs, inject opioids, and are interested in reducing their opioid use. Not everyone gets syringes at Phoenix Recovery Needle Exchange. Plus this information is based off the responses of 67 individuals, which may not be representative. Still, most percentages match statewide data. Additionally, this survey only captures people who inject drugs; this misses other populations with opioid use disorder such as people who take licit or illicit prescription opioids.

“There are clearly at least two populations. There is the population who inject drugs and we have a lot of data on that and the numbers are pretty solid. What we don’t have are the population who use pills that are subject to fentanyl tampering. We need to figure out a way to quantify that and reach out to them.”

Duncan West
OWLT Member & Analytical Consultant



Going Forward

Needle exchange programs are a critical harm reduction and safety strategy. They provide people who inject drugs with health information and access to treatment resources when they are ready. The service prevents the costly spread of infectious diseases like HIV and hepatitis C, reduces the number of needles found in the community, and creates a pathway to recovery for those who want to reduce or quit using opioids.

“The opportunity we have to build relationships with the people who come to the Exchange van, is the most significant thing we do. This often leads to positive change in the lives as they are able to open up with us about the services they may need. We are often the first point of contact.”

Katie and Randall,
Phoenix Recovery
Needle Exchange

We will continue to follow the Syringe Exchange Survey results, which are available every two years. Moreover, we will work to see whether there are ways to connect with other adults with opioid use disorder who do not access services through the needle exchange. By sharing the same type of health and safety information with this different population, we can support harm reduction and a path to treatment and recovery.

Youth and Opioid Misuse

Some of the only local data we have on prescription opioid misuse comes from the Healthy Youth Survey (HYS), which also captures youth heroin use.¹² Since 2002, HYS has monitored youth attitudes, behaviors, and health status statewide. Schools opt to participate and survey 6th, 8th, 10th, and 12th graders every two years. Currently, HYS provides survey data from 2006 to 2016. HYS expects to release data from the 2018 fall survey in the spring of 2019. When available, we will update our data to reflect the most recent information.

Questions from the Healthy Use Survey:

Recent prescription opioid use: "During the past 30 days, on how many days did you: Use a pain killer TO GET HIGH, like Vicodin, OxyContin (sometimes called Oxy or OC) or Percocet (sometimes called Percs)?"

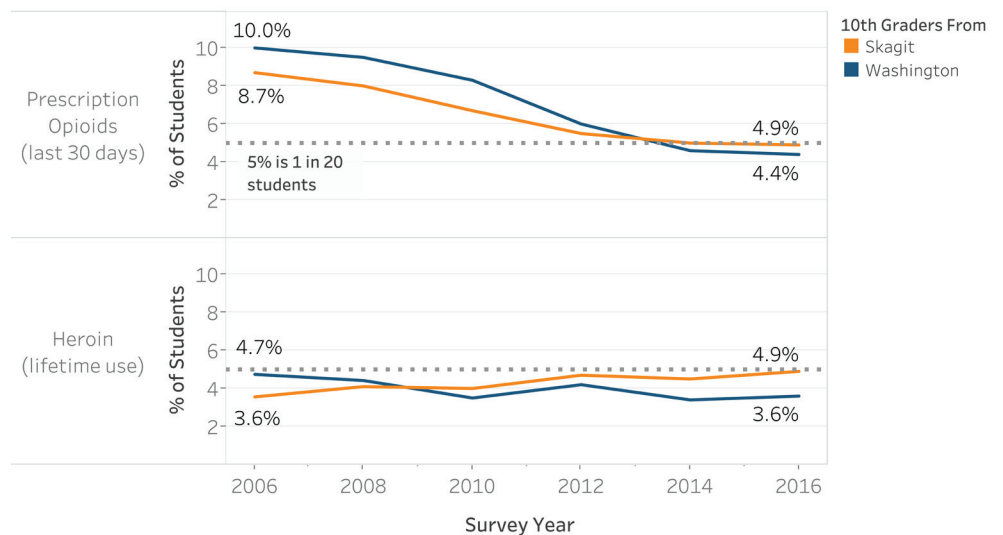
Lifetime heroin use: "Have you ever, even once in your life, used heroin?"

Though HYS makes data available for all grades surveyed, this dashboard highlights 10th grade responses. This is due to concerns that 12th graders likely to misuse opioids may no longer be represented in the survey if they dropped out. We rely on 10th grade data to avoid underestimating misuse.

In 2016, 4.9% of 10th graders surveyed reported misusing prescription opiates at any point in the last 30 days (95% CI: 4.0-5.2). Peak misuse among 10th graders was in 2006 with 8.7% of students surveyed misusing (95% CI: 6.5-10.9). To date, the percent has dropped significantly, but it has stagnated around 5% since 2012 [Figure 9].

Similarly, 4.9% of Skagit 10th graders in 2016 reported using heroin at some point in their life (95% CI: 2.9-6.9). This makes 2016 the year with the highest reported rate of heroin use. Unlike prescription opioids, lifetime heroin use has increased in Skagit County, albeit slowly and not significantly, from 3.6% in 2006 to 4.9% in 2016. By comparison, Statewide rates of heroin use among youth have decreased slowly over time. Skagit County and statewide rates do not differ significantly for both recent prescription opiate misuse and lifetime heroin use.

Figure 9
10th Graders Misusing Prescription Opioids or Heroin

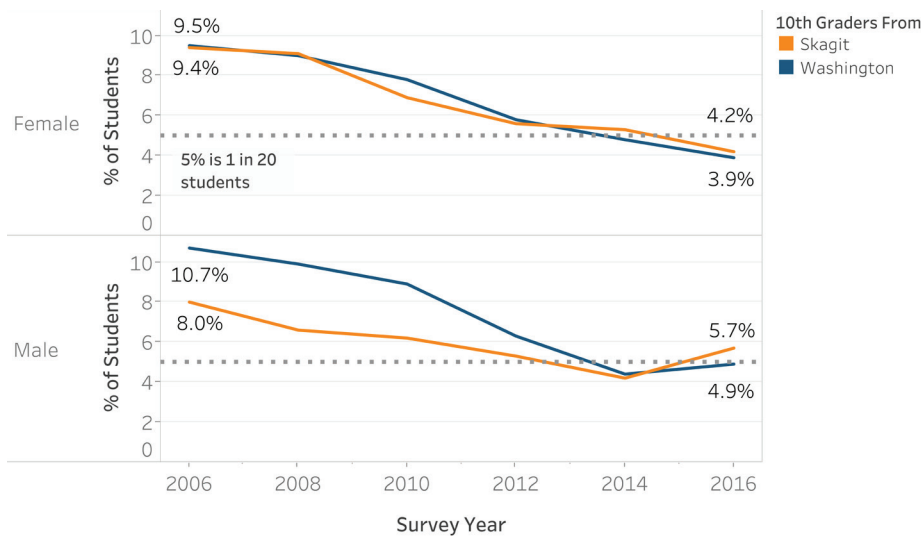


IN 2016
5%
OF 10th GRADERS
took a
PRESCRIPTION OPIOID
withIn the
last month
—
THAT IS
1 in 20
10th GRADE
STUDENTS

5%
OF 10th GRADERS
reported using
heroin
AT LEAST ONCE
IN THEIR LIFE

There is a notable gender difference in rates of opioid misuse, though it does not reach statistical significance. In 2016, 5.7% of male 10th graders misused prescription opioids compared to 4.2% of females. More concerning is that misuse among males increased 1.5 percentage points from 2014 to 2016 yet it decreased 0.8 percentage points among females. We can only do subanalyses for prescription opioid use due to small sample sizes and therefore confidentiality concerns for those that reported using heroin [Figure 10].

Figure 10
10th Graders Using Prescription Opioids to Get High in Last 30 Days, by Gender



Where do these prescription opioids come from? The Washington State Department of Health Prescription Drug Monitoring Program (PMP) counted 737 unique youth (10 to 17 years old) who received a legally prescribed opioid in 2017.¹³ This is equivalent to 5.9% of that population. However, national data speaks to misusers getting their opioids from others. The 2017 National Survey on Drug Use and Health shows that among individuals 12 years old and older, 53% who misused a prescription opioid got the medication from a friend or relative.¹⁰ This includes medication given, bought, and taken. In the same survey, 36% of people who misused opioids reported getting the opioid from a doctor.

Keep in Mind

Based on research, we know many disorders accompany opioid use disorder, for example mental health disorders. In Skagit County, 10th graders who reported an inability to stop or control their worrying, depression, or contemplation of suicide were significantly more likely to misuse prescription opioids. We also see that students using other types of drugs—including recent alcohol use or lifetime marijuana, heroin, inhalant, methamphetamine, cocaine or crack use—are significantly more likely to also misuse prescription opioids. Again, we see opioid use is a multifaceted issue where polysubstance use and mental health are important factors.



Going Forward

This dashboard does not delve into the statistics of co-occurring or contributing factors to youth opioid misuse like mental health and polysubstance use. However, we will continue to follow and evaluate that data as part of the *OWLT Community-Wide Action Plan and Call to Action*.

Opioid Prescribing

Enough
**PRESCRIPTION
OPIOIDS**

are dispensed in
Skagit County for

7 in 10

PEOPLE

**TO HAVE
AN OPIOID**

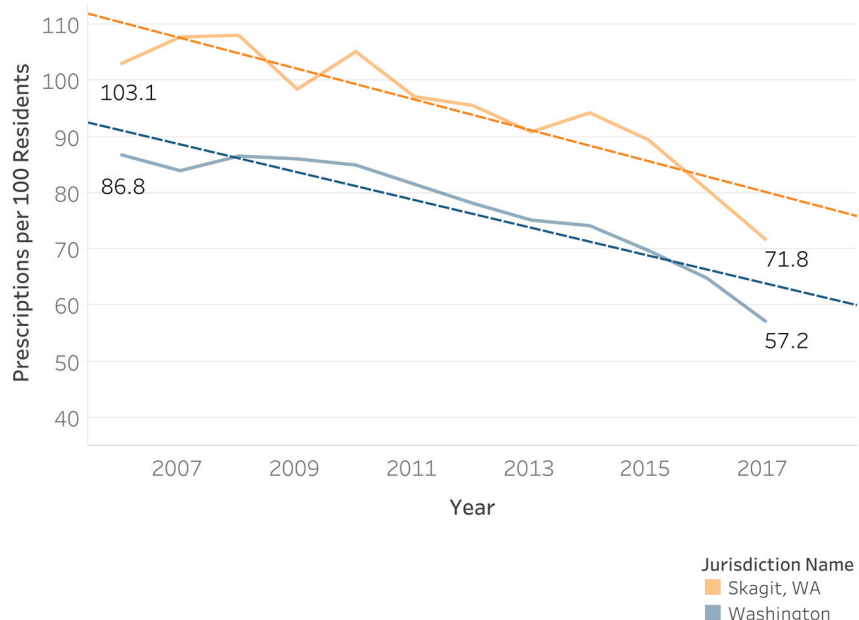
(retail pharmacies only)

Statewide and nationwide, opioid prescribing practices have been changing in response to the opioid epidemic. Though opioids are important tools for pain management, healthcare providers must carefully consider their addictive properties and the possibility of interactions with other medications. Pharmaceutical companies reformulated several opioid medications to deter abuse, most notably OxyContin® in 2010. Still, 53% of people who inject drugs in Washington began their opioid use “hooked on” prescription opioids according to the 2017 Washington State Syringe Exchange Health Survey.¹¹ What is more, there is no overdose-safe prescription opioid on the market. Available opioids still have strong potential for overdose when taken in excess or combined with sedatives such as benzodiazepines and alcohol.

The CDC tracks opioid prescriptions dispensed at retail pharmacies for every county in the United States, not including mail order prescriptions.¹⁴ Their tallies exclude Schedule V opioids such as cough or cold opioid formulations and buprenorphine or methadone used for opioid use disorder treatment. Drawing on this data, in Skagit County enough opioids were dispensed by retail pharmacies for 7 out of 10 residents to have a bottle of pills in 2017 (71.8 prescriptions per 100 residents). This is substantially higher than the statewide rate of 57.2 prescriptions per 100 residents. In reality, there are patients receiving multiple prescriptions throughout the year thus not every prescription represents a patient. However, this measure helps us understand the volume of prescription opioids in the community.

These rates have changed over time. Data shows that the prescribing rate has significantly decreased for the state and Skagit County by 2.5 and 2.7 fewer prescriptions per 100 residents per year, respectively. However Skagit County dispenses substantially more opioids overall: on average, Skagit pharmacies dispensed 17.8 more opioid prescriptions per 100 residents compared to the state. At its peak in 2006, there were more prescriptions dispensed at retail pharmacies than there were residents in the county (107.1 prescriptions per 100 residents at its peak in 2008). [Figure 11]

Figure 11
Filled Opioid Prescriptions per 100 Residents | Annual Rates and Trend Lines



Keep in Mind

Data from the CDC is based on prescription opioids sales in retail pharmacies but they exclude cough/cold medications (nearly all of which are listed under Schedule V) and prescriptions from mail order pharmacies. It is not clear how the CDC deals with Veterans Administration (VA), Indian Health Service (IHS), and tribal pharmacies. This means that the CDC count of prescription opioids underestimates the total number of opioids dispensed in the county.

By contrast, the Washington State Prescription Drug Monitoring Program (PMP) tracks and analyzes all opioid prescriptions including mail order, VA, IHS, and tribal pharmacies and includes cough medication with opioids in its calculations. At this point in time, PMP presents its data in terms of patients receiving prescriptions, rather than our indicator of interest which is the total prescriptions issued.¹⁵ PMP also presents data on a quarterly basis rather than annual. So the two sources are not currently comparable.

Conclusion

This report is one of Skagit County's first attempts to aggregate all available data and begin the process of determining if we are making an impact on the opioid epidemic. We are grateful for the funding and analytic interest from the CDC and the Washington State Department of Health. We all want to determine if our strategies, policies, programs and services are bending the epidemic curve. We expect this type of analysis is emerging throughout the country and it is our hope this data will inform our community's action and contribute to the pool of information nationwide. We look forward to working with our regional, state and national partners to better understand this problem and employ the right strategies to eradicate this epidemic.



Going Forward

In the future, PMP will provide annual counts of unique patients receiving opioid prescriptions as well as total opioid prescriptions written. When this is available, we will rely on their more comprehensive data to evaluate opioid prescribing in Skagit County.

Additionally, the PMP tracks and analyzes the other opioid metrics recommended by the Bree Collaborative including the number of patients with high-dose opioid prescriptions, overlapping benzodiazepine and opioid prescriptions, and chronic opioid prescriptions. We do not duplicate these existing dashboards in this report as they are already featured by the Department of Health.

Appendix

Fatal Overdoses

Means and 95% confidence intervals around the mean computed using SAS and Tableau. Local and state rates calculated using direct age standardization. We used a gamma distribution method to calculate 95% confidence intervals for these rates.

Nonfatal Overdoses

Categorizing and Cleaning Nonfatal Overdoses

For each data source, we developed inclusion and exclusion criteria to ensure the highest specificity for Skagit County opioid overdoses.

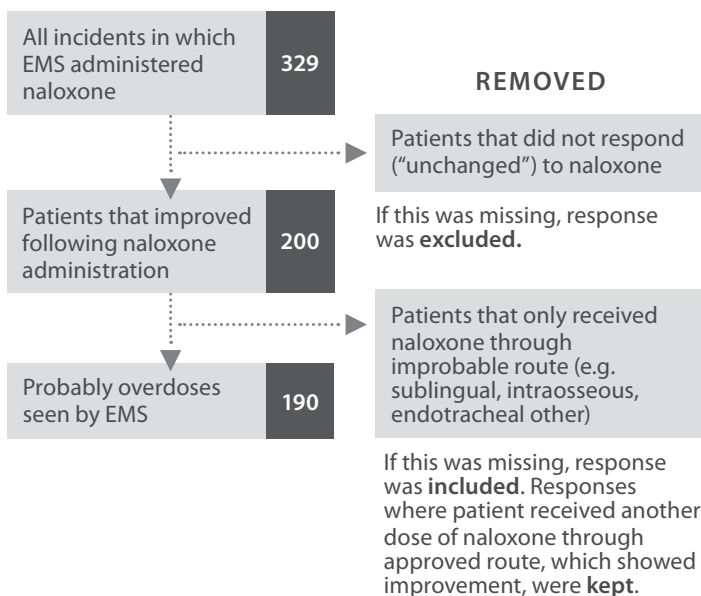
For **community-reported overdoses** collected by Phoenix Recovery, we excluded reported overdoses that occurred outside Skagit County.

For **EMS overdoses**, we developed a multi-tiered exclusion criteria. EMS data does not provide ICD-10 codes or diagnosis codes so we had to develop inclusion and exclusion criteria based on naloxone administration. EMS records any time a responder administered naloxone. Because naloxone has no affect on someone not experiencing an overdose, it has become a routine and first-line medication given to unconscious patients. However not all of these end up being opioid overdoses. Thus, we only considered patients that improved with naloxone administration to be probable overdoses. Second, some records indicated intraosseous or endotracheal administration of naloxone, which is not possible. These may have been record-keeping errors but to ensure data quality, they were excluded. [See **Figure 12** for detailed inclusion and exclusion flowchart.]

This may have led to excluding true overdoses for several reasons:

1. EMS did not administer sufficient naloxone to see improvement during the run;
2. Naloxone was administered successfully prior to the arrival of EMS and thus EMS did not need to administer;
3. Recording errors in the record such as infeasible administration routes (e.g. intraosseous, endotracheal, etc) for naloxone meant the record could not be used reliably.

Figure 12. Inclusion and Exclusion Criteria for All EMS Data (May 1, 2015 - July 23, 2018)



Using a matching algorithm [Table 4], we deduplicated overdoses shared by community and EMS reports. We then limited the pre-hospital dataset to the date range Jan 1, 2016 to Dec 31, 2017 to show complete years.

Table 4. EMS and Community (Pre-Hospital) Data Matching Algorithm

Classification	EMS Data	Phoenix Recovery Naloxone Refill Survey Data	Dichotomized Variable
Community and EMS Match	EMS incident record + Same town + Same setting + Incident date within 6 weeks prior to the community report*	911 called + Same town + Same setting	911 or EMS Involved
Community 911 w/out Matching EMS**	EMS incident record that does not match one or more of the above criteria	911 called	
Community Only		911 not called	Community Only
EMS Only	Remaining unmatched EMS incidents		911 or EMS Involved

*Phoenix Recovery community overdose reports record the date the overdose was reported rather than the incident date. Thus, we assumed that an individual might come in for a naloxone refill within 6 weeks after using their kit on an overdose event.

**As mentioned before, we based EMS opioid overdoses on a positive reaction to naloxone. Therefore, we may have been unable to make a match between EMS data and community reports because the EMS classification was narrow to ensure accuracy.

Hospital overdoses drew on ICD-9 and ICD-10 codes standardized by the CDC. Hospitals used ICD-9 codes up until Q3 2015 and then switched to the updated ICD-10 codes. We still included ICD-9 codes in the query to catch any diagnoses made during the transition. The codes that identify opioid overdoses and include:

ICD-9 Codes: 965.0, E962.0, E980.0, 965.00, 965.01, E950.0
ICD 10 Codes: T40.0, T40.1, T40.2, T40.3, T40.4, T40.6

Hospitals ran the query through their information services and electronic health records vendors to give us a total number of patients diagnosed with an opioid overdose. All 3 hospitals provided complete data for 2017. Because we received an aggregate number of hospital overdoses, not individual patient data, we used EMS and community reports to deduplicate records. After completing the pre-hospital matching algorithm, we subtracted the number of deduplicated EMS and community records that reportedly went to the hospital from the hospital data.

In the pre-hospital overdoses response flowchart, we note that fatal outcomes are unknown. This is because if the patient made it to the hospital after getting care from community or EMS, we do not have patient-level data from hospitals to match cases and show whether they recovered or died. No community-reported overdose noted a fatality, however some individuals left the scene prior to the patient's full recovery. If EMS responded to an overdose and could not revive the patient, they were removed by the algorithm because they did not improve with naloxone. Thus fatal outcomes cannot be mapped in this pre-hospital overdose data.

Analyzing Nonfatal Overdoses

Rate and corresponding confidence intervals of all nonfatal

opioid overdoses and the subgroup of pre-hospital overdoses were calculated in OpenEpi using Mid-P exact test. Statistical significance determined by comparing confidence interval overlap.

Adults with Opioid Use Disorder

Dr. Caleb Banta-Green of the Alcohol and Drug Abuse Institute at the University of Washington developed the formulas used to calculate the population who inject drugs in Skagit County, as well as the population that uses opioids and would like to reduce their opioid use. The formulas are as follows:

Average number of syringes used per day per person:

$$\frac{(\text{Avg \# of days survey respondent injected in past week}) \times (\text{Avg \# of times injecting per day})}{(\text{Avg \# of times using a syringe})}$$

Estimated number of people who inject drugs:

$$\frac{(\text{Avg \# of syringes used per day per person}) \times (365 \text{ days per year})}{(\text{Total \# of syringes exchanged in Skagit County in 2017})}$$

Estimated number of opioid users who inject drugs:

$$(\text{Estimated \# of people who inject drugs in 2017}) \times (\% \text{ of survey respondents who reported opiate use})$$

Estimated number of opioid users who inject drugs interested in reducing or stopping use:

$$(\text{Estimated \# of opioid users who inject drugs in 2017}) \times (\% \text{ of survey respondents "somewhat" or "very" interested in stopping opioid use})$$

Youth Misuse

Confidence intervals generated by HYS using SAS.

Opioid Prescriptions

We used linear regression in SAS to calculate the trend line of prescriptions dispensed per 100 residents over time. The state rate did not differ significantly from the Skagit County rate. CDC did not provide standard errors or confidence intervals to be able to calculate statistical differences between specific years.

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Opioid Use in Skagit County: 2017



Enough prescription opioids are dispensed in Skagit County for

7 in 10
PEOPLE

TO HAVE AN OPIOID
(retail pharmacies only)

There are an estimated
1,599 opioid users
who inject drugs in Skagit County

882

(55%) WANT TO REDUCE
OR STOP THEIR USE

1 in 20
(OR 5%) OF 10TH GRADERS
recently took
prescription opioids
to get high*



17%

of nonfatal overdoses
NEVER SAW A
HEALTHCARE PROVIDER

1 overdose was
REVERSED

for every

5 naloxone kits
distributed

distributed by Phoenix Recovery



5%
OF 10th GRADERS
reported using

heroin

AT LEAST ONCE
IN THEIR LIFE*