

JANUARY
2019

Opioid Use Disorder & Opioid Misuse in Snohomish County

Using Capture-Recapture to Estimate the Burden of Disease

OBJECTIVES

- Understand the difficulty of opioid surveillance
- Explain methods to mitigate the problem
- Review use of surveillance for disease burden
- Report capture-recapture and disease burden results.

RESULTS:

The Snohomish Health District believes that the range of residents in Snohomish County with opioid use disorder is likely between 5,000 and 10,000 individuals. Furthermore, those who misuse opioids is likely in the range of 35,000 to 80,000 people.

NEXT STEPS:

Moving forward, there are a few key tasks that would be worth completing:

- Refining the estimate of people expressing interest in entering treatment of any kind.
- Determining the availability of treatment based on a survey of the current treatment landscape.
- Determining if a gap exists by comparing the estimate of interest to the availability of treatment services
- Exploring gaps in case management and the need for more wrap-around services.

OPIOID MISUSE

Intermittent use of any of the following that does not meet the definition of opioid use disorder:

- An illicit opioid, such as heroin
- Someone else's prescription opioid
- One's own prescription opioid other than as prescribed (e.g., higher dose, more frequent, for a different reason than prescribed).

OPIOID USE DISORDER

Must meet two or more of the following criteria:

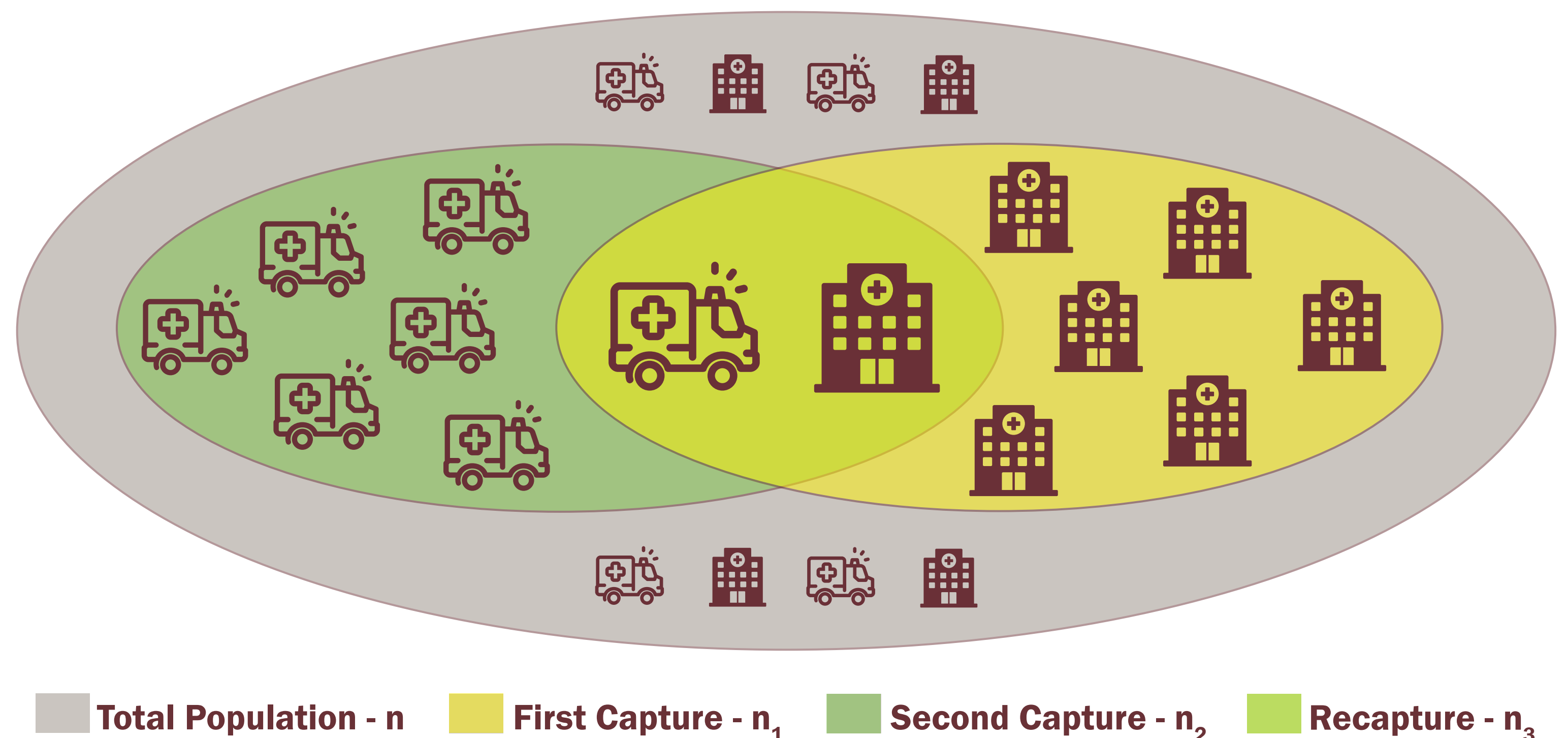
- Impaired control, such as using for longer periods of time or larger amounts than intended, or wanting to reduce use but being unable to do so.
- Social impairment, including repeated use despite substantial harm to relationships.
- Risky use, including use in physically dangerous situations.
- Pharmacological indicators such as increasing tolerance of opioids and withdrawal symptoms when not using.

THE CAPTURE-RECAPTURE PROCESS

Disease burden estimates are challenging to complete in populations that are difficult to identify or pinpoint. The capture-recapture method was originally developed to estimate population size in wildlife studies and had been adapted for studies of human conditions.

This method requires overlapping datasets that are presumably incomplete but intersecting. It is particularly effective for estimations of elusive populations.

Capture-Recapture



Where:

n = Size of population

n_1 = Number cases in FirstWatch = 73

n_2 = Number cases in PRMCE ED = 29

n_3 = Number of matches = 18

$$n = \frac{n_1 \times n_2}{n_3}$$

SNOHOMISH OVERDOSE PREVENTION

A COMMUNITY COMING TOGETHER TO STOP
SNOHOMISH COUNTY'S OPIOID EPIDEMIC

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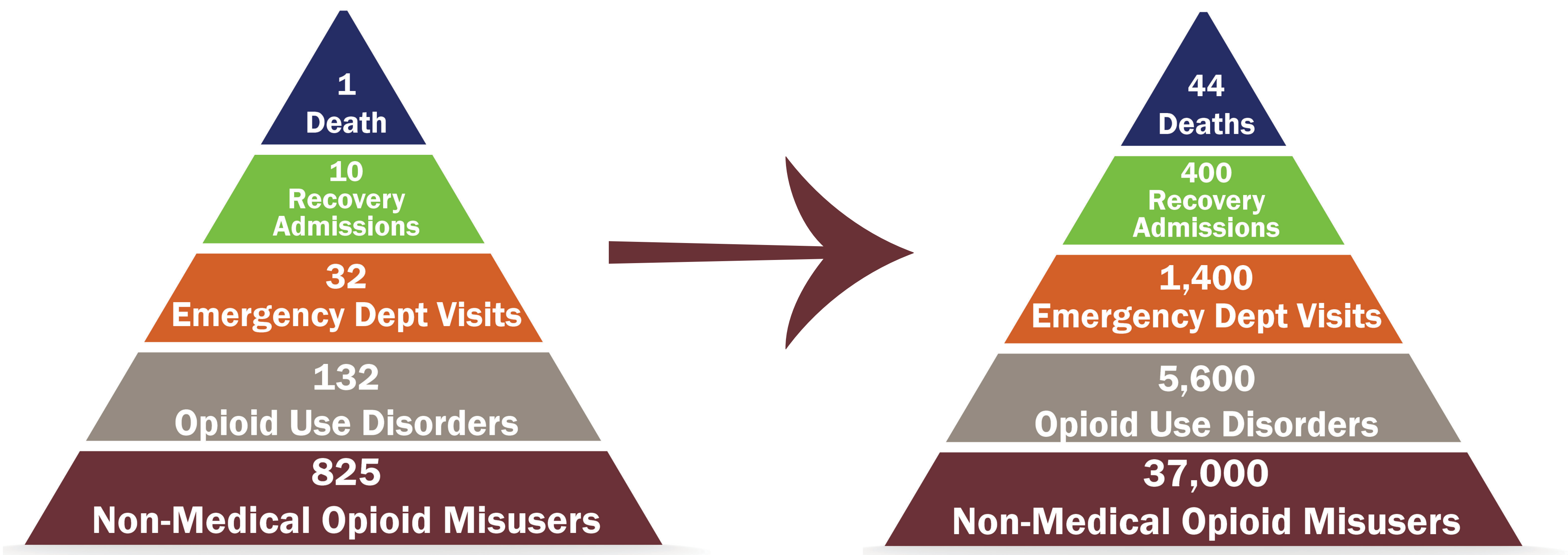
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CDC MODEL

The Centers for Disease Control and Prevention (CDC) published a policy impact report the included a diagram with the relationship between different opioid crisis outcomes. This relationship indicates that for every death, there are 10 treatment recovery admissions, 32 emergency department visits, 132 people with opioid use disorder, and 825 people misusing opioids.

ESTIMATES FOR SNOHOMISH COUNTY

The capture-recapture method estimates 1,400 emergency room visits annually for opioid related overdoses in Snohomish County. Applying CDC model estimates, the result is an estimate of 5,600, or 0.8%, of people over 11 years of age in Snohomish County having opioid use disorder. This is consistent with other independent data sources.



CROSS-VALIDATION OF RESULTS

In order to validate the results of this process, other independent datasets were utilized to test the model and develop ranges.

Data from those sources were applied to the CDC model used in the burden of disease calculations. The results are shown in the adjacent table.

This analysis validates the final burden of disease estimates when using the capture-recapture method applied to the CDC model.

Dataset	Deaths	Recovery Admissions	Emergency Dept. Visits	Opioid Use Disorder	Opioid Misusers
Burden of Disease with Capture-Recapture Method	44	400	1,400	5,600	37,000
2016 National Survey on Drug Use and Health	41	400	1,300	5,400	34,000
2017 Washington Syringe Exchange Health Survey	70	700	2,300	9,400	59,000
2017 Snohomish County Opioid-related Death Data	100	1,000	3,000	13,000	83,000
2018 Point-in-Time Study	90	900	3,000	12,000	80,000

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