

Deaths related to opioids and other drugs

Annual Report 2021

Leelanau, Mason, & Osceola County

This report is in memory of those who lost their life or a loved one to substance use. These losses must motivate us all to prevent future deaths.

Purpose: This data was collected by the Office of the Medical Examiner (MEO) in the Department of Pathology at Western Michigan University Homer Stryker M.D. School of Medicine (WMed). Unless otherwise noted, data is from 2021 and includes deaths where drugs were the immediate cause of death. This report is meant to provide up to date statistics to those involved in efforts to reduce the number of drug-related deaths.

Sections with the following headings are approximations and frequencies may be higher than what is reported: Health Factors, Mental Health Factors, Social Factors, Children and Substance Use History.

Sources: All data was extracted from a Medical Examiner database, law enforcement (LE) reports, EMS runsheets, death certificates, obituaries, medical records, toxicology reports, and autopsy reports.

Note: Leelanau, Mason, and Osceola counties are combined to protect decedents' identities due to low count numbers ($n < 10$) in each county.

B=Black/African-American; W=White; F=Female; M=Male

Please email questions to pathology@med.wmich.edu

Office of the Medical Examiner
Department of Pathology
Homer Stryker M.D. School of Medicine

Deaths Related to Opioids and Other Drugs

Mason, Leelanau, & Osceola County

All drug-related deaths: Leelanau

Age	Race	Sex	Death certificate: Substances contributing to death	Injury zip code
33	W	M	fentanyl	49654
38	W	M	ethanol, hydroxyzine, nordiazepam	49670
41	W	M	acetyl-fentanyl, diphenhydramine, fentanyl, methadone, methamphetamine, morphine	49682
60	W	M	diphenhydramine, fentanyl	49664

All drug-related deaths: Mason

Age	Race	Sex	Death certificate: Substances contributing to death	Injury zip code
27	W	F	amitriptyline, citalopram, fluoxetine, mirtazapine, topiramate	49431
28	W	M	fentanyl, methamphetamine	49454
35	W	M	alprazolam, fentanyl, methamphetamine, mitragynine, para-fluorofentanyl	49431
35	W	M	cocaine, fentanyl, methamphetamine	Unknown
36	W	M	fentanyl, methamphetamine, para-fluorofentanyl	49431
38	W	F	buprenorphine, bupropion, methamphetamine, venlafaxine	49431
57	W	F	7-aminoclonazepam, acetyl-fentanyl, cocaine, fentanyl	49431
69	W	F	diphenhydramine, duloxetine, oxycodone, topiramate	49449

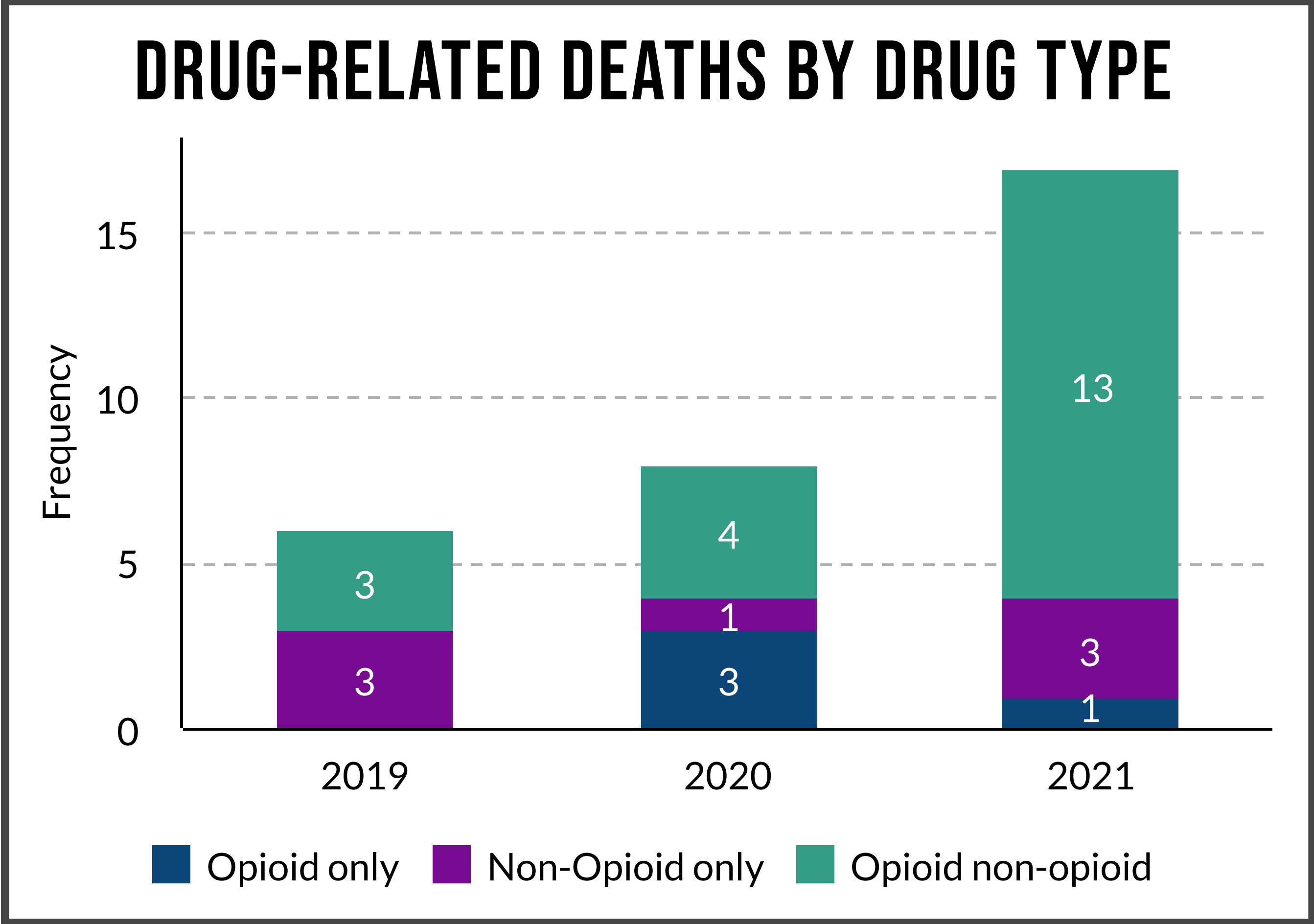
All drug-related deaths: Osceola

Age	Race	Sex	Death certificate: Substances contributing to death	Injury zip code
32	W	M	fentanyl, methamphetamine	49631
34	W	M	fentanyl, cyclobenzaprine, methamphetamine, para-fluorofentanyl, xylazine	49655
51	W	M	fentanyl, methamphetamine, methadone, tramadol	49631
53	B	M	fentanyl, methamphetamine	49639
61	W	M	methamphetamine	49677

Deaths Related to Opioids and Other Drugs

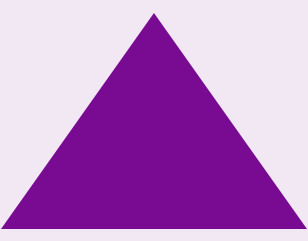
Mason, Leelanau, & Osceola County

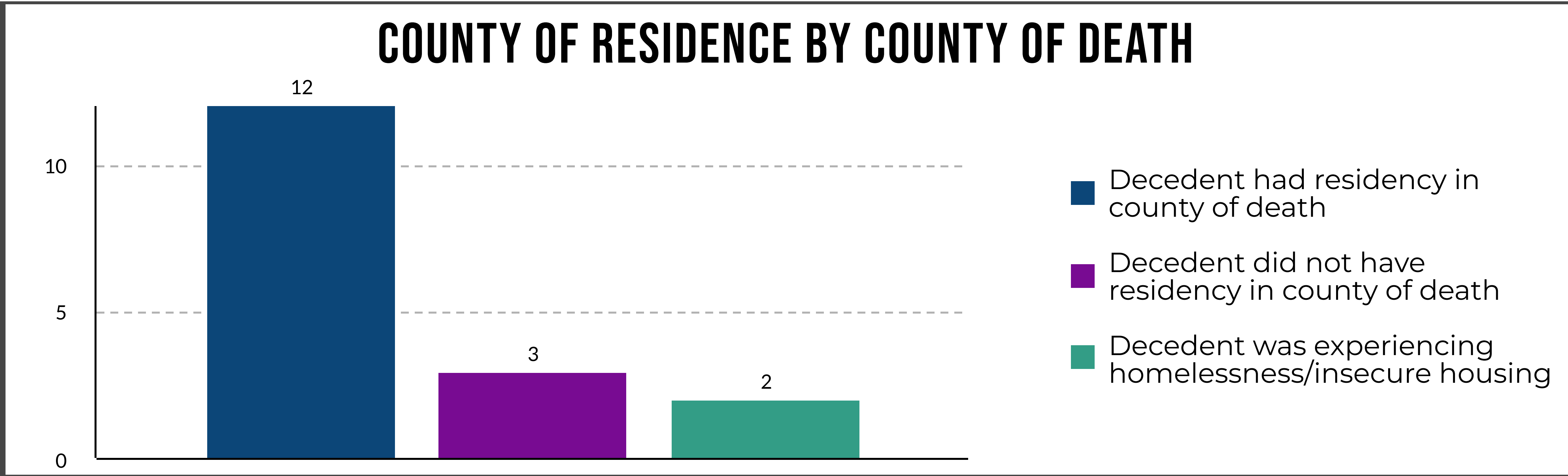
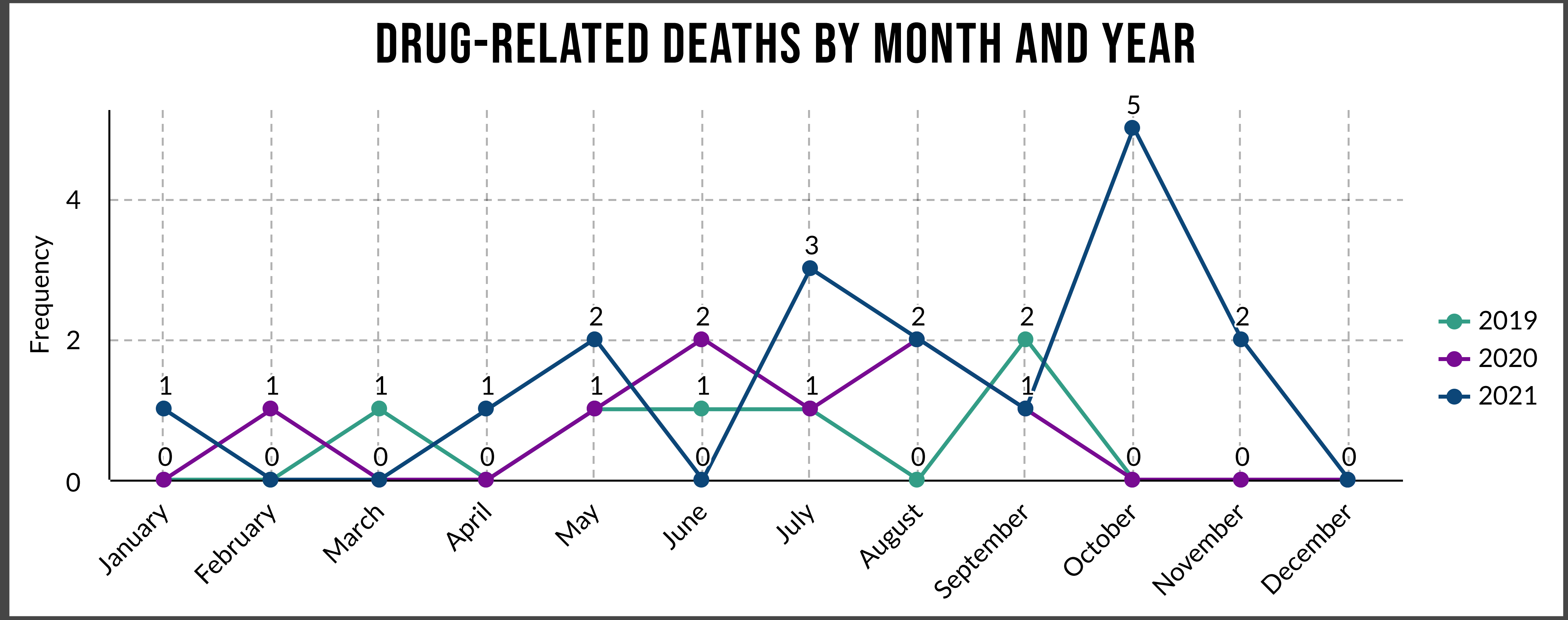
Total Drug-Related Deaths



Year	Total deaths	Deaths per 10,000
2019	6	0.8
2020	8	1.1
2021	17	2.3

Percent change

 113% from 2020 to 2021

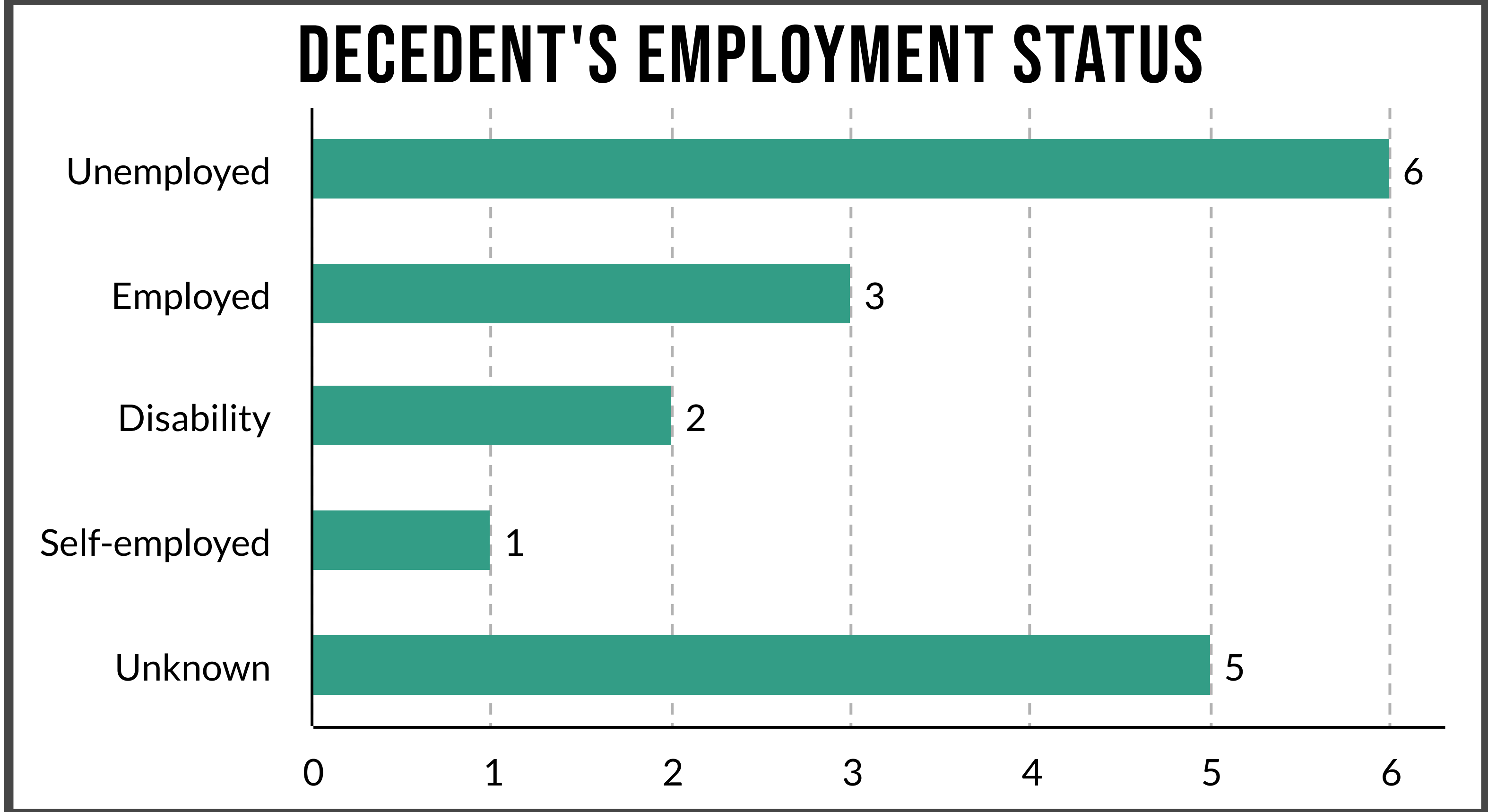


Deaths Related to Opioids and Other Drugs

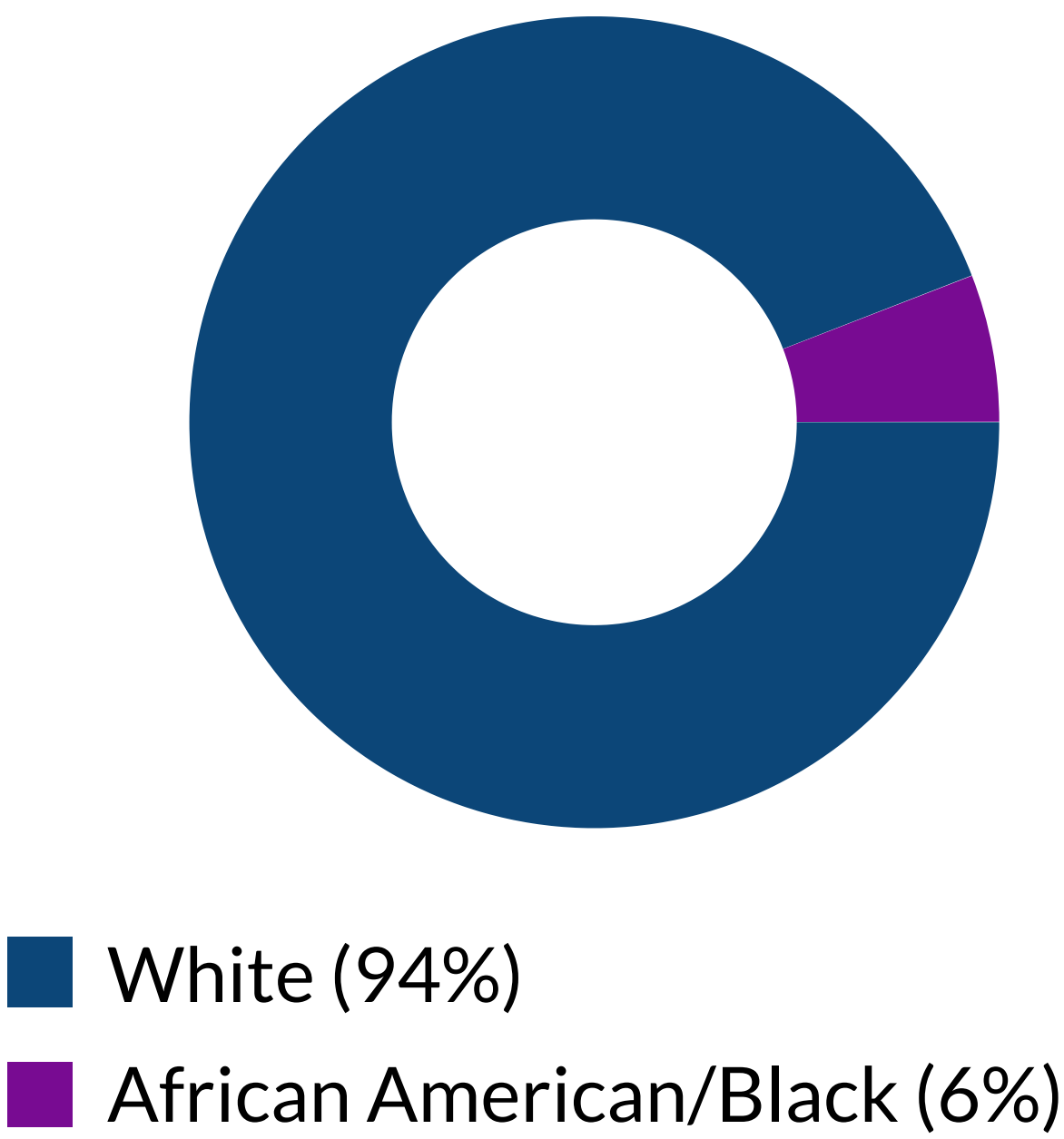
Mason, Leelanau, & Osceola County

Demographics

DECEDENT'S EMPLOYMENT STATUS



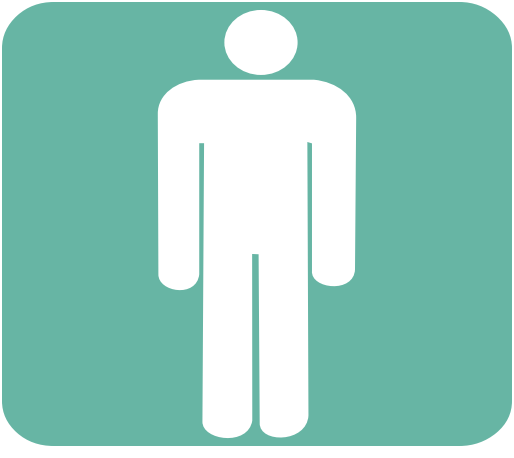
RACE



SEX

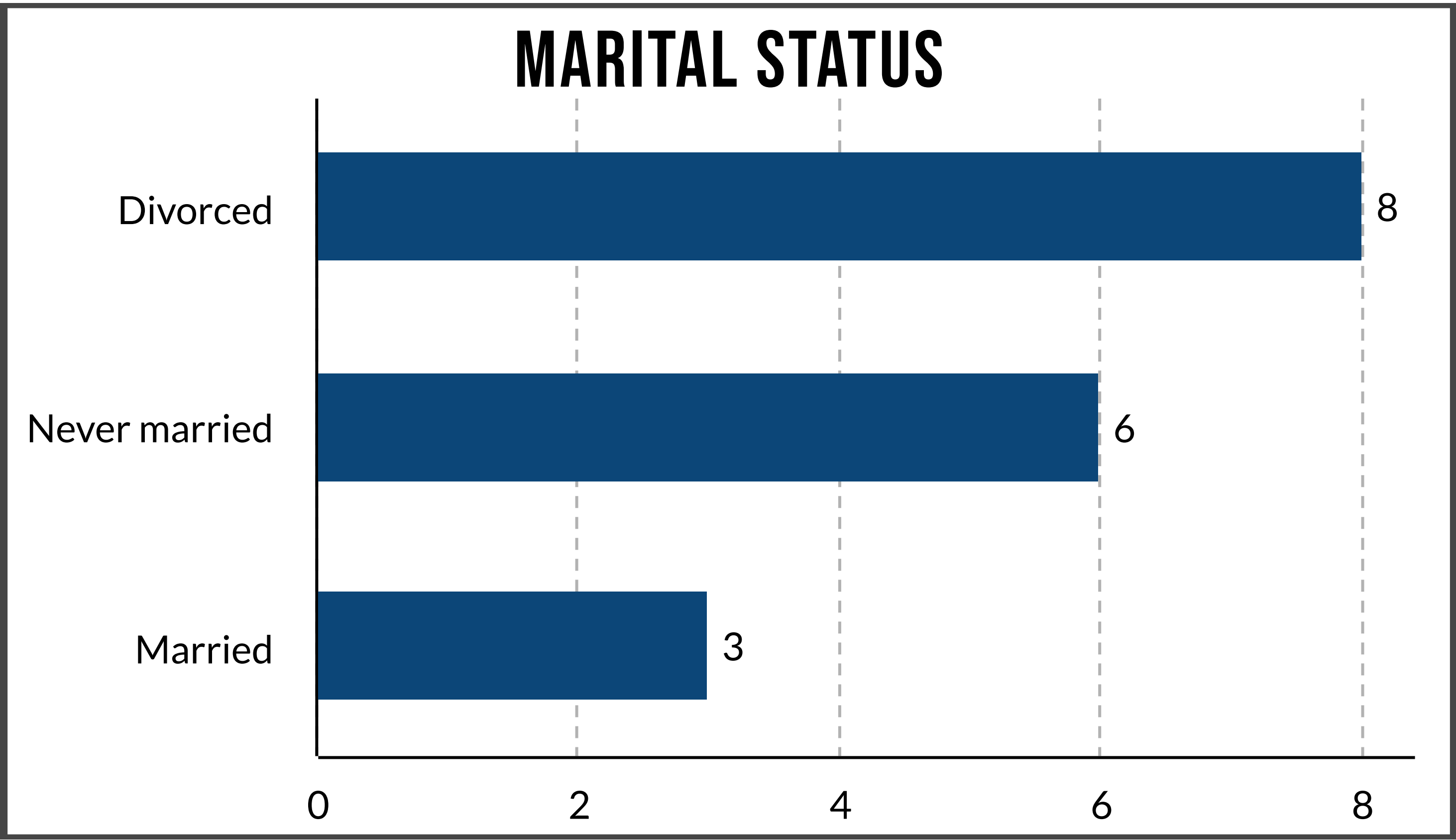


31%

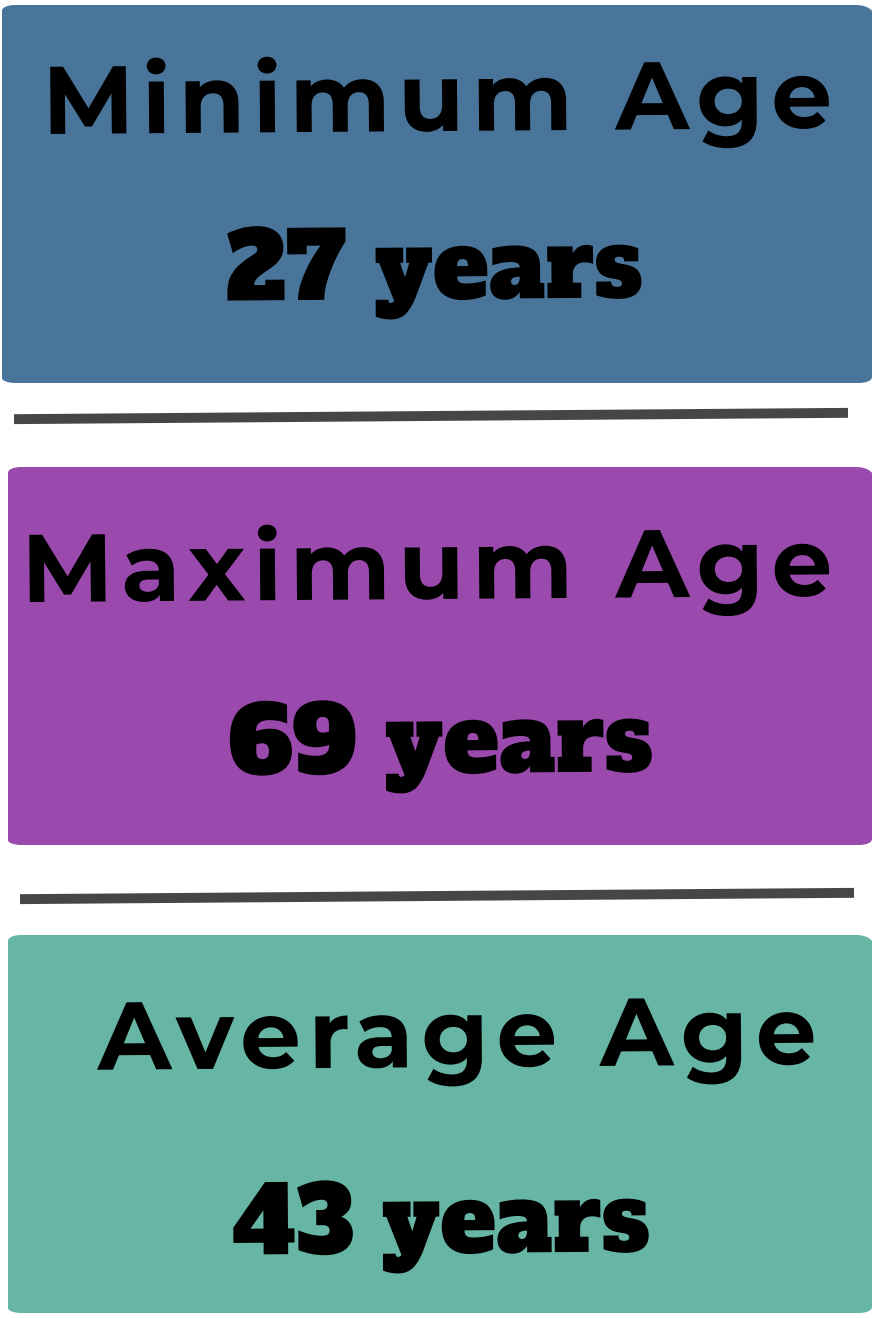


69%

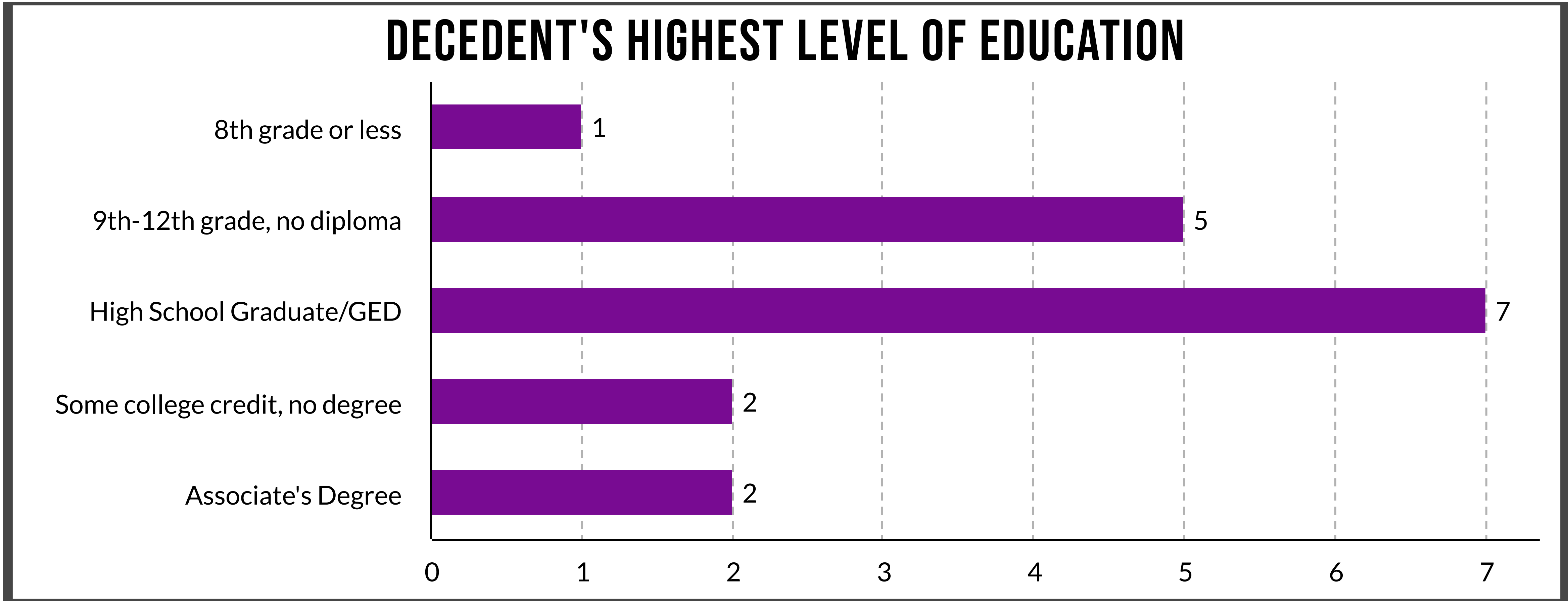
MARITAL STATUS



AGE

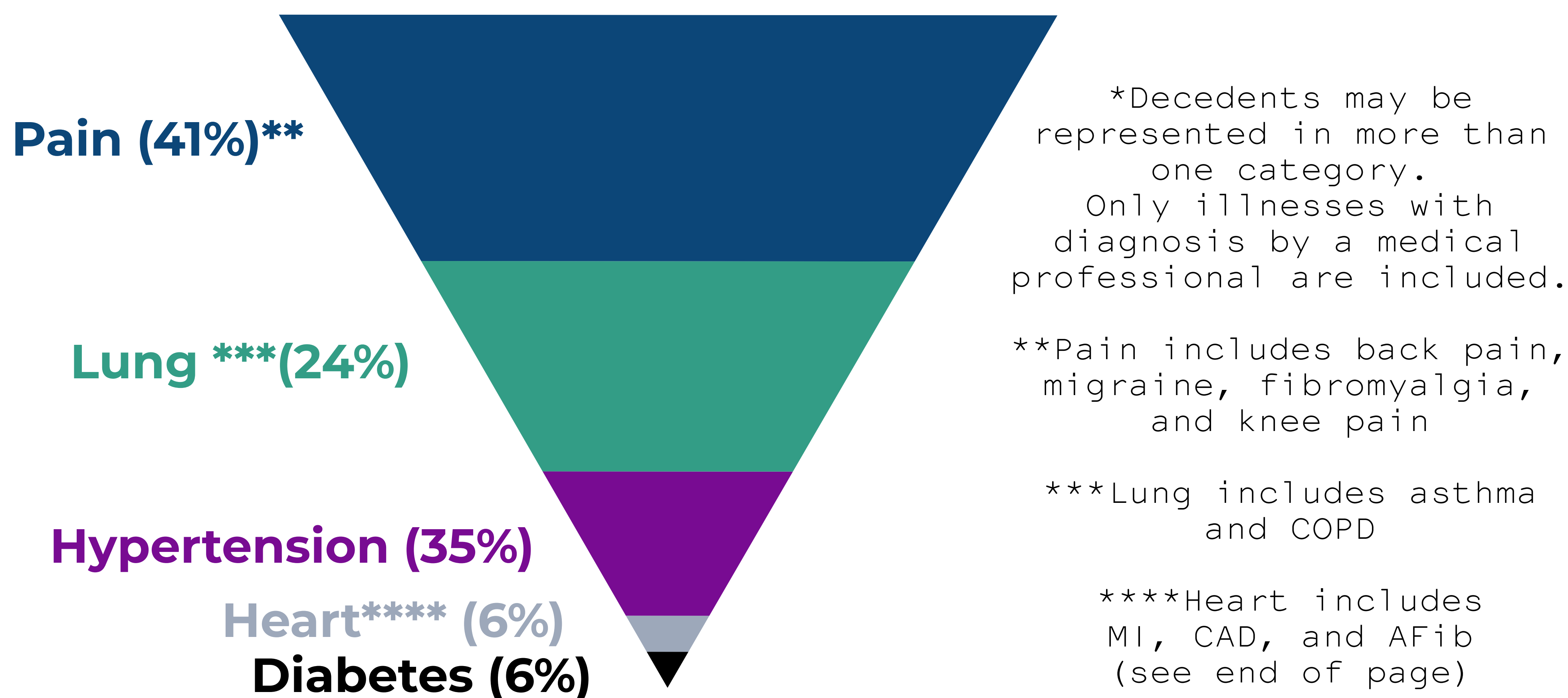


DECEDENT'S HIGHEST LEVEL OF EDUCATION



Mason, Leelanau, & Osceola County

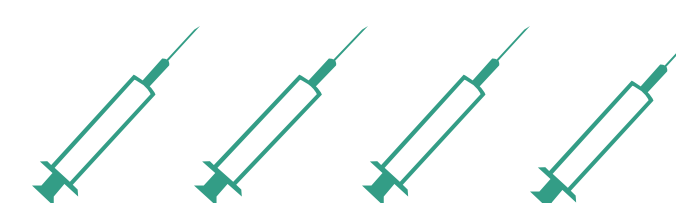
MOST COMMON AILMENTS*



A diagram showing five purple spherical cells arranged in a horizontal row. Each cell is filled with a solid purple color and contains several small black dots. The cells are connected to each other by short horizontal black lines. Each cell has several black spikes or projections extending from its outer surface.

At least **2** decedents were
Hepatitis C positive

1 of these decedents was known to use substances intravenously



Decedent used tobacco

82%



Decedent drank alcohol*

41%



*Moderate to heavy use

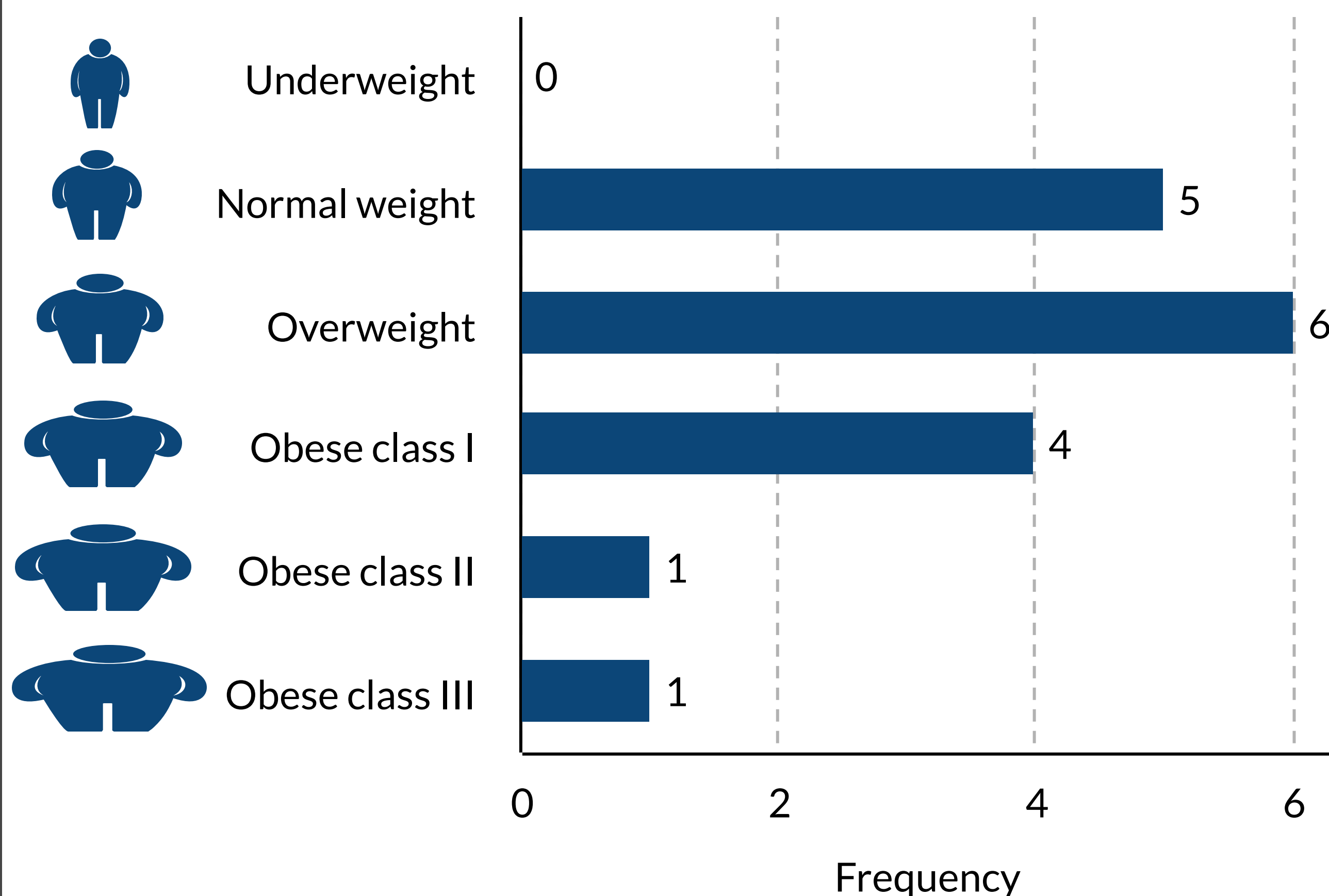
**Decedent
had
a PCP***

12%



*Primary care physician

BODY MASS INDEX (BMI)



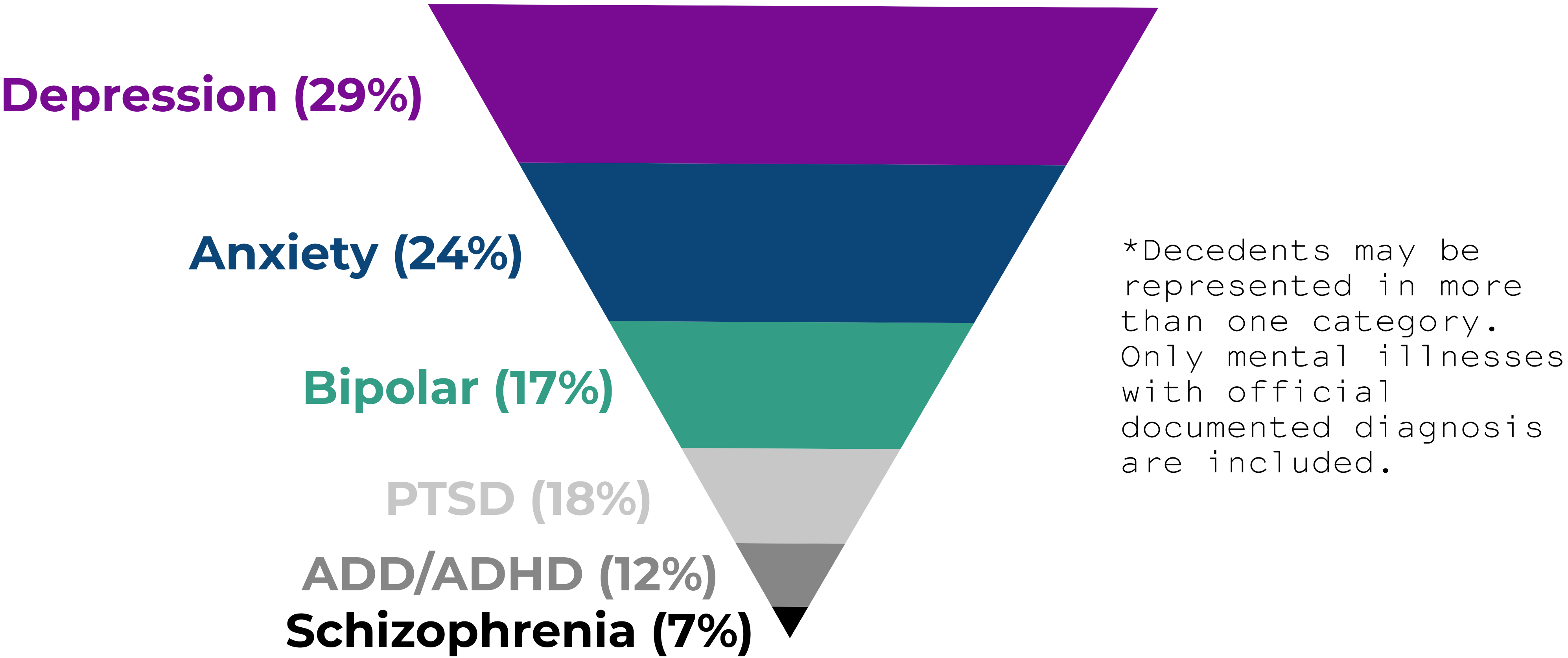
Page 5

Deaths Related to Opioids and Other Drugs

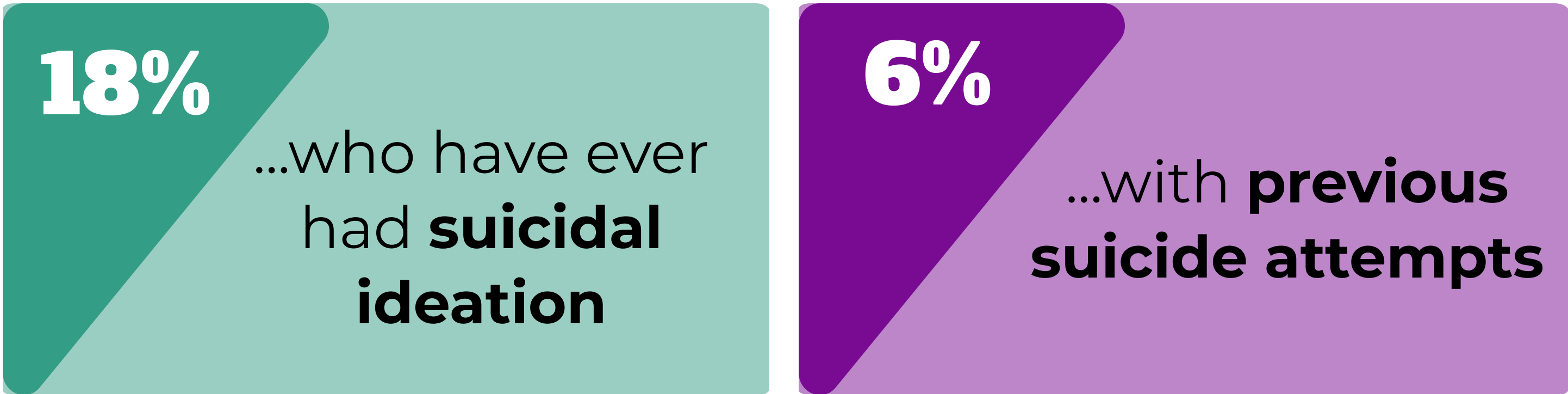
Mason, Leelanau, & Osceola County

Mental Health Factors

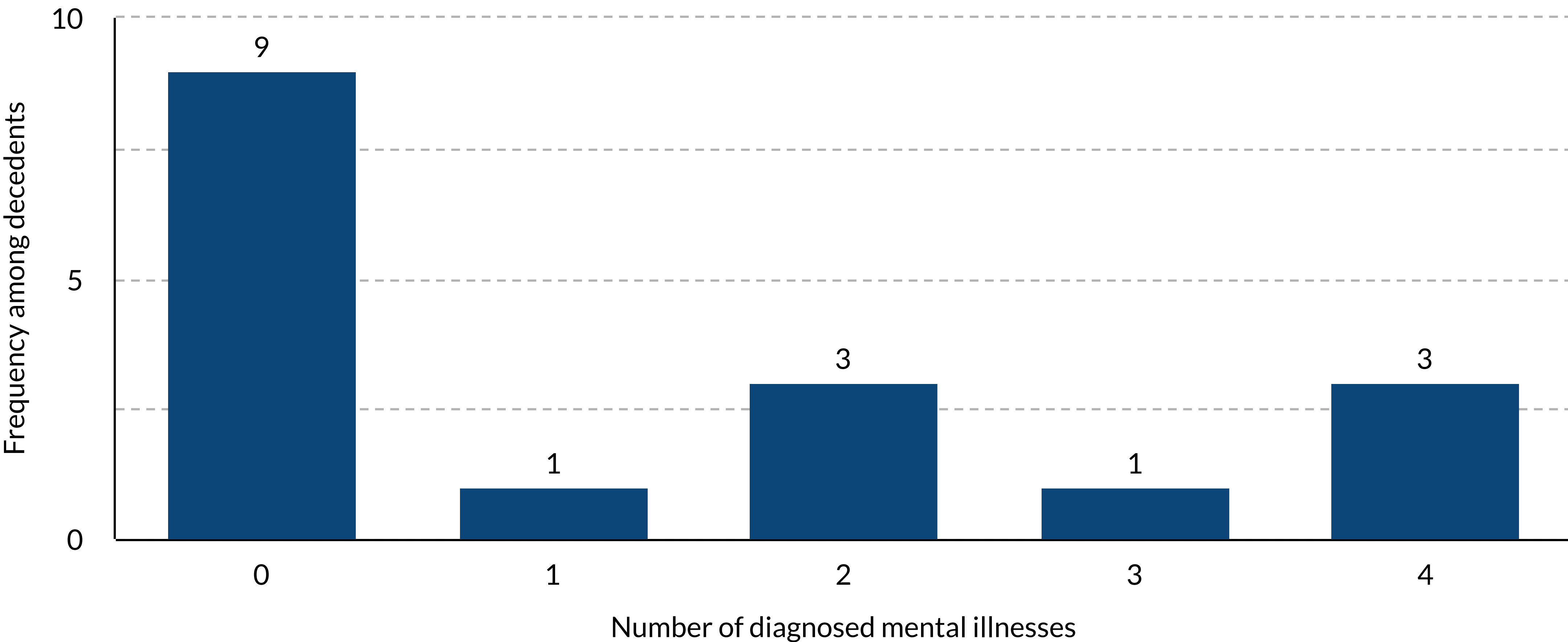
MOST COMMON MENTAL ILLNESSES



PERCENTAGE OF DECEDENTS



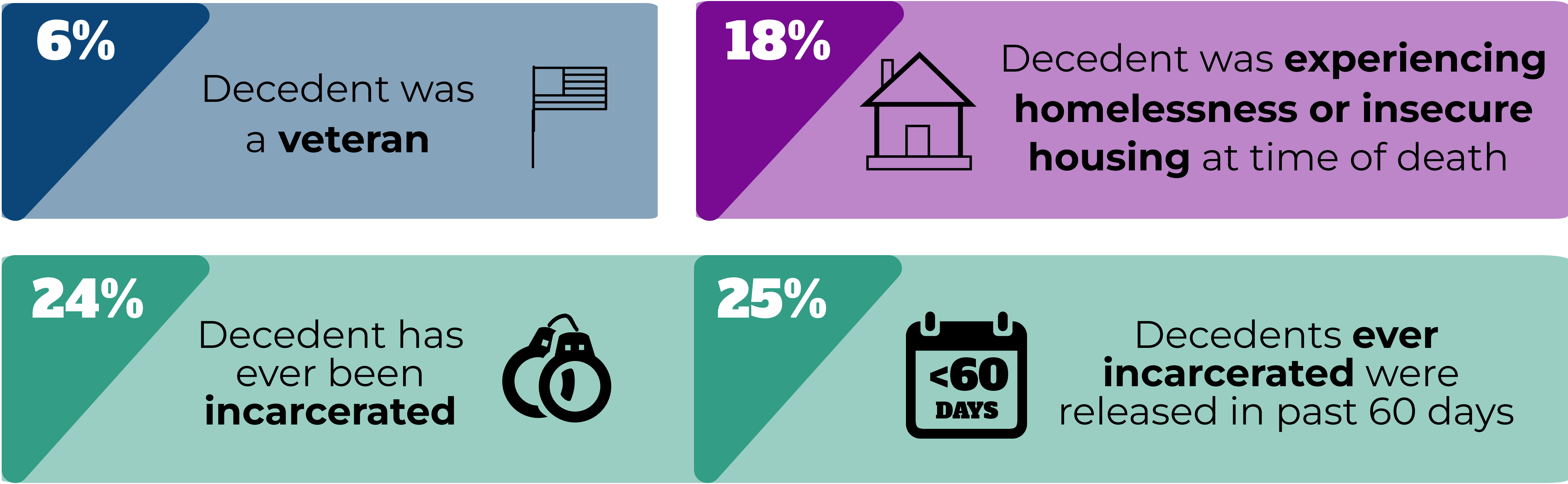
NUMBER OF DIAGNOSED MENTAL ILLNESSES AMONG DECEDENTS



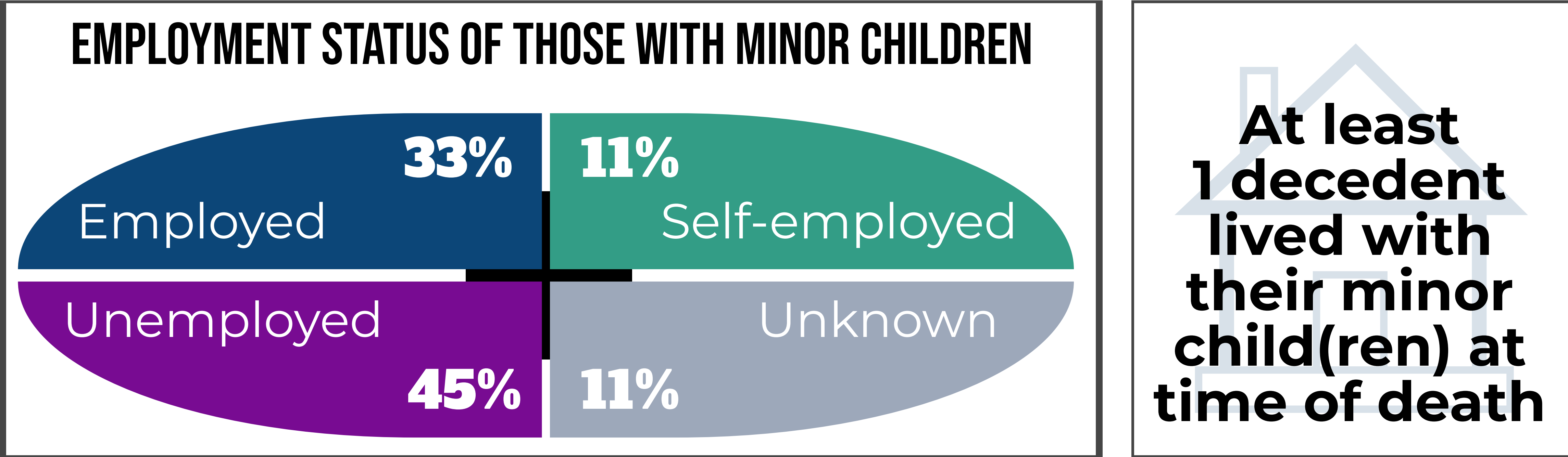
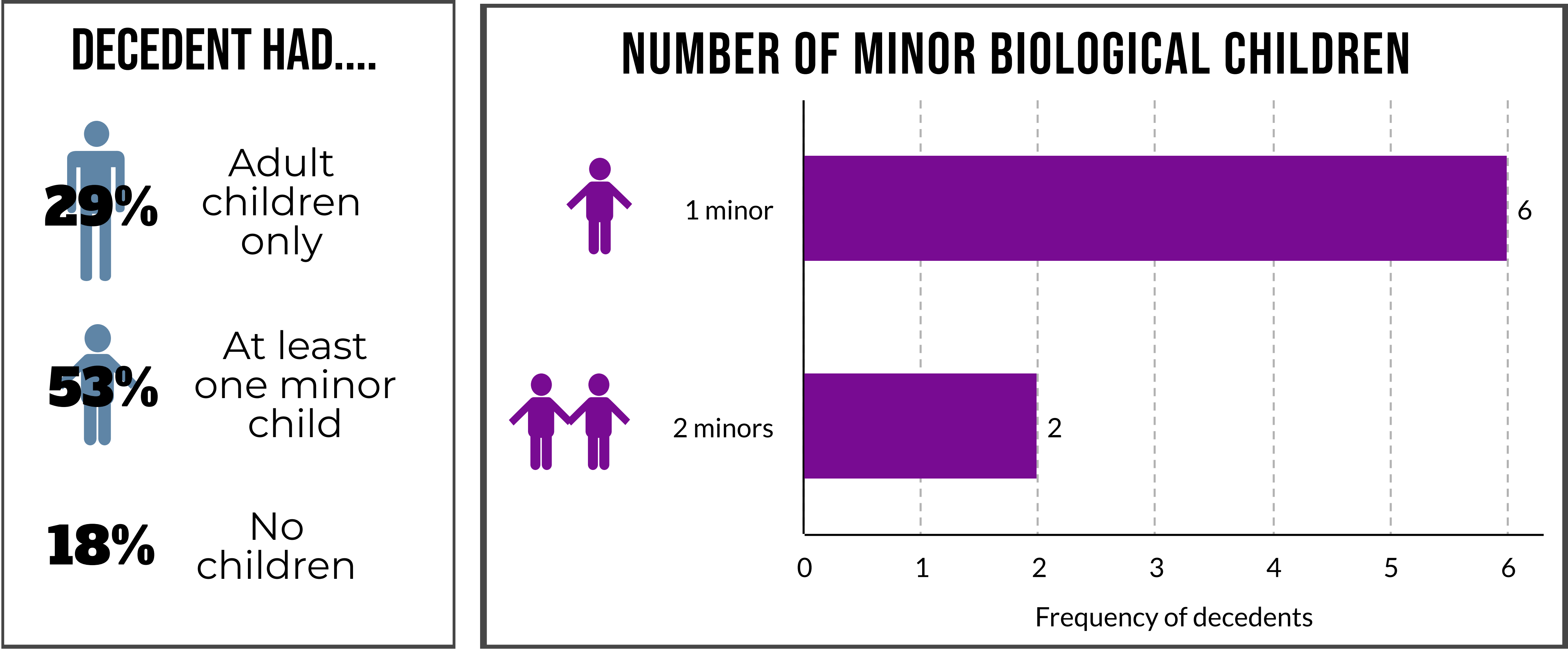
Deaths Related to Opioids and Other Drugs

Mason, Leelanau, & Osceola County

Social Factors



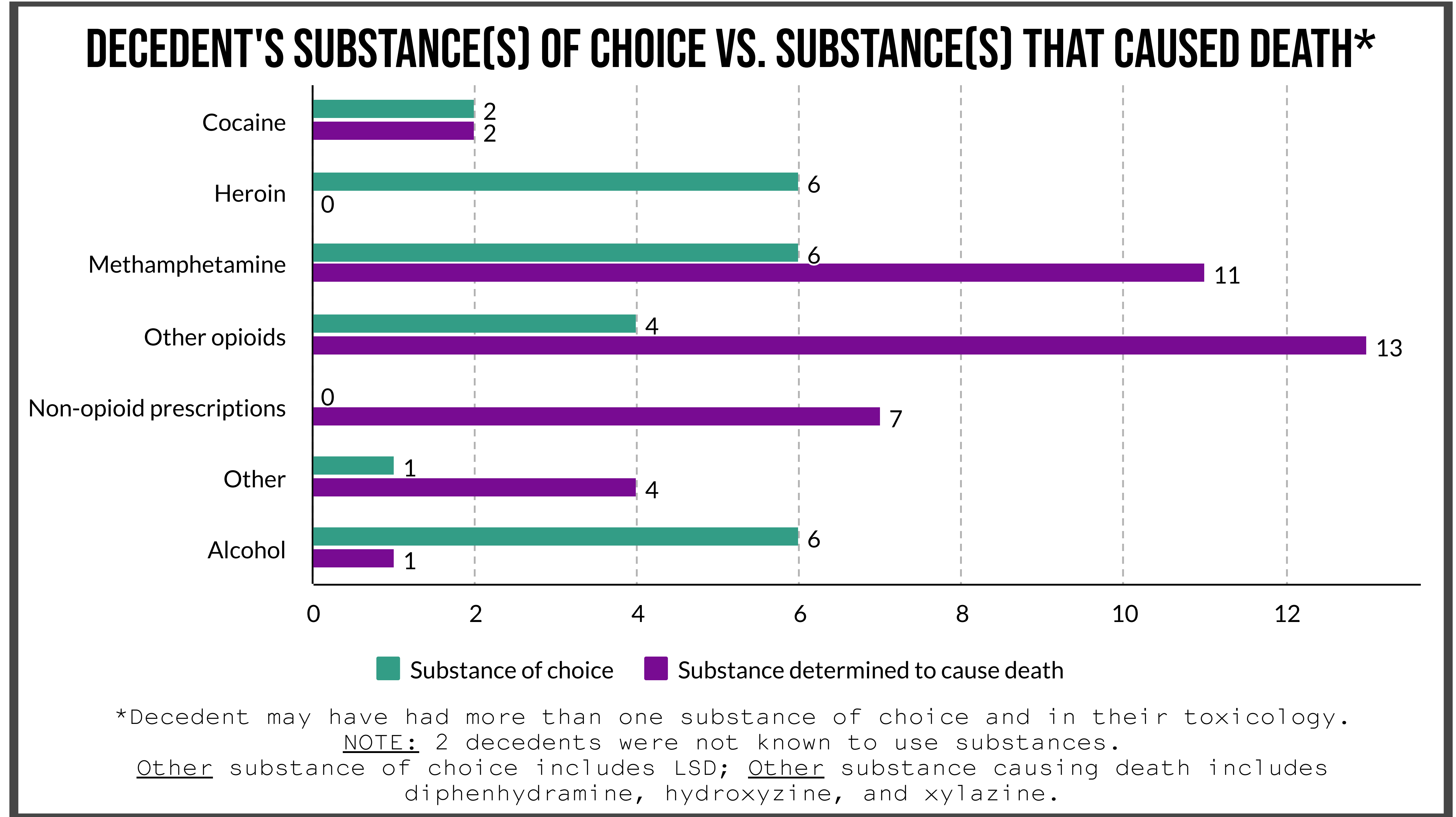
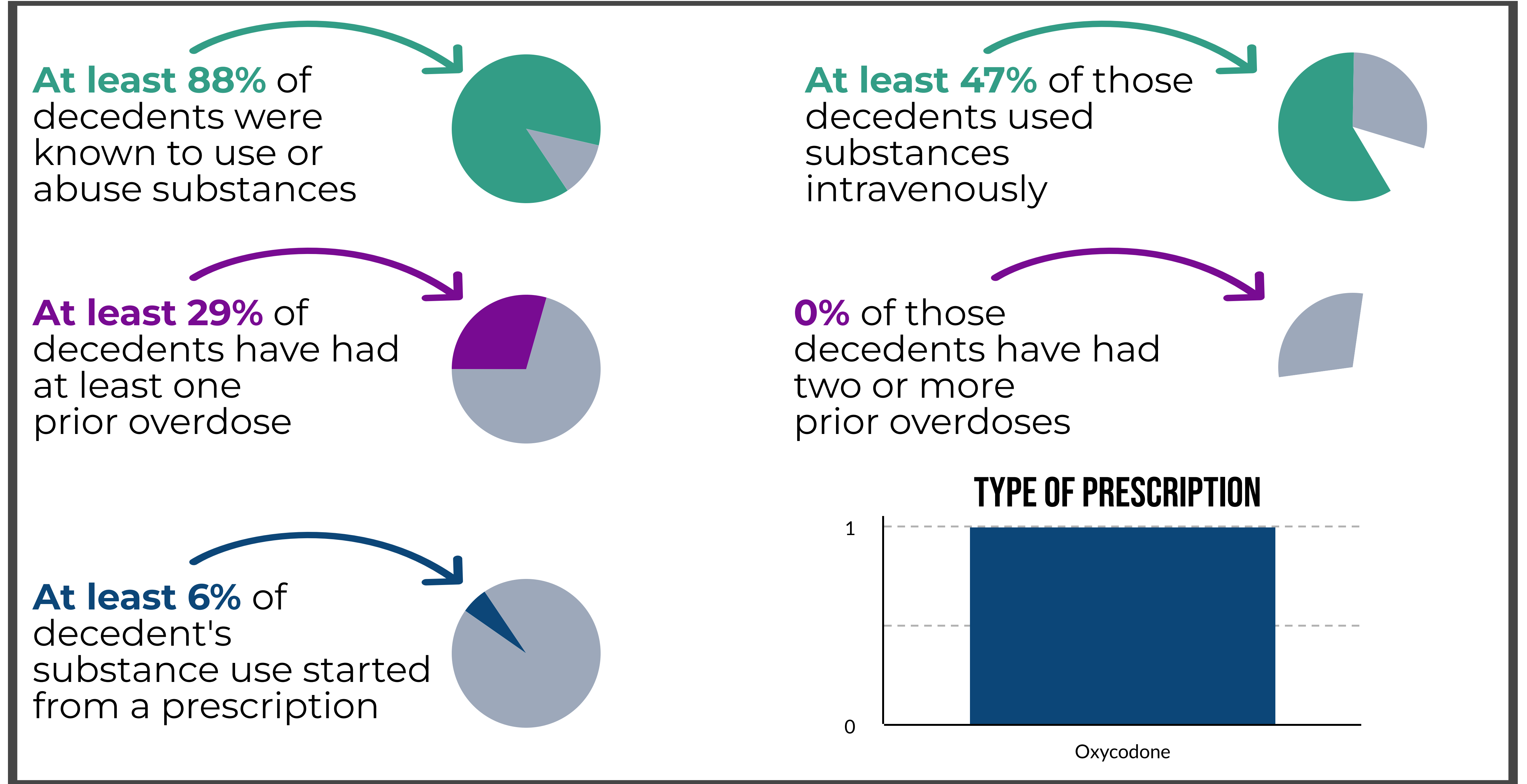
Children



Deaths Related to Opioids and Other Drugs

Mason, Leelanau, & Osceola County

Substance Use History



Deaths Related to Opioids and Other Drugs

Mason, Leelanau, & Osceola County

Substance Use History, cont.

PREFERRED METHOD OF ADMINISTRATION*

Method	Male (n=11)	Female (n=3)	White (n=14)	Total (n=14)**
Intravenous	7	2	9	9
Snort	2	1	3	3
Smoke	2	1	3	3
Transdermal	0	0	0	0
Huff	0	0	0	0
Oral	2	2	4	4
Unknown	2	0	2	2

*Decedent may have had more than one preferred method of administration. Only includes decedents with a substance use history (n=15). **Decedent of African-American descent is excluded (n=1).

RECOVERY HISTORY (N=15)*

Decedent was recently reportedly **substance free** in the past three weeks

27%

Decedent was currently receiving or has received **medication for opioid use disorder** in the past two years

20%

Decedent has been to a **treatment clinic or detox center** at least one time

13%

SUSPECTED REASON FOR RELAPSE**



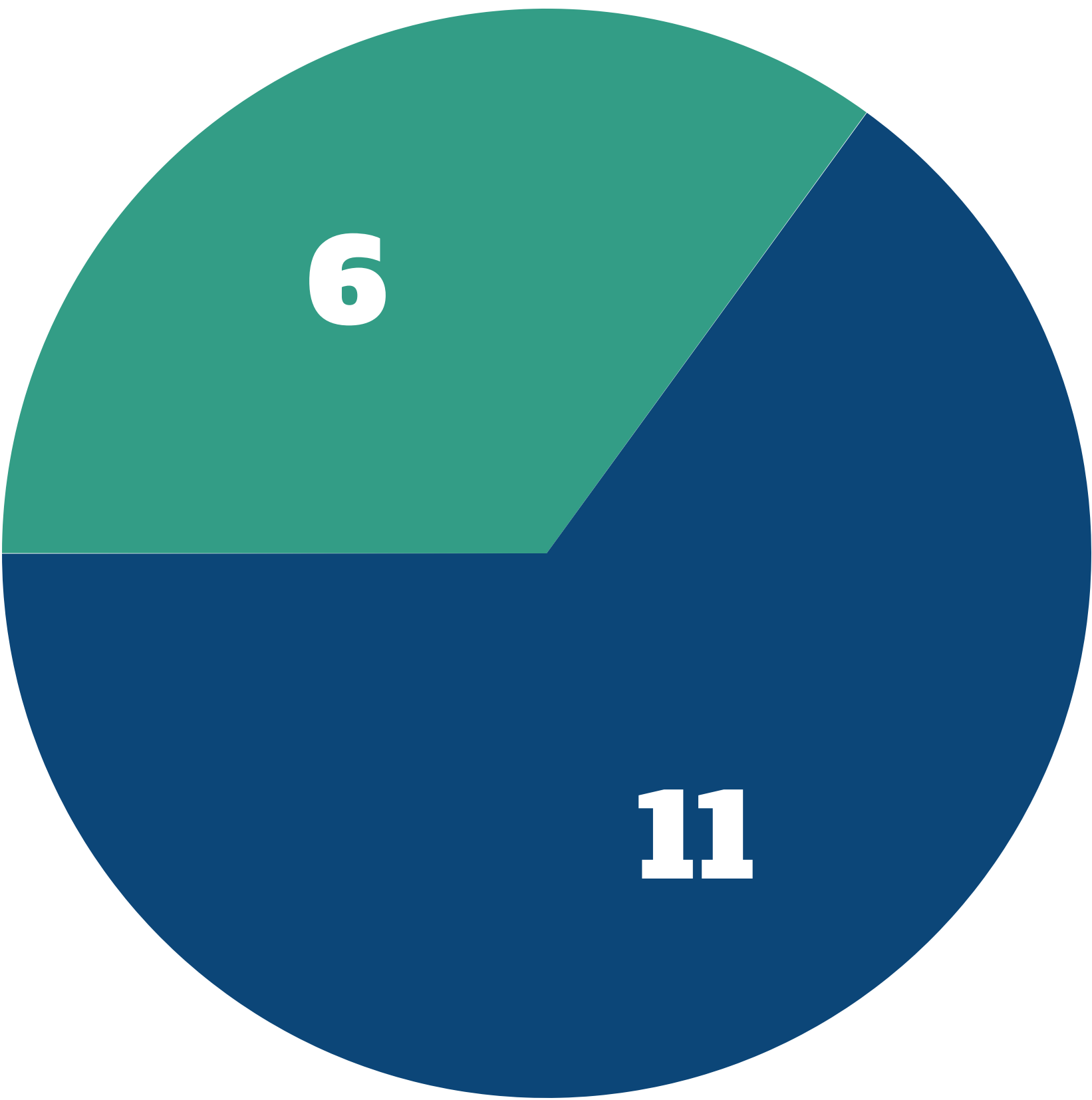
*ONLY Decedents known to use substances are included.

Deaths Related to Opioids and Other Drugs

Mason, Leelanau, & Osceola County

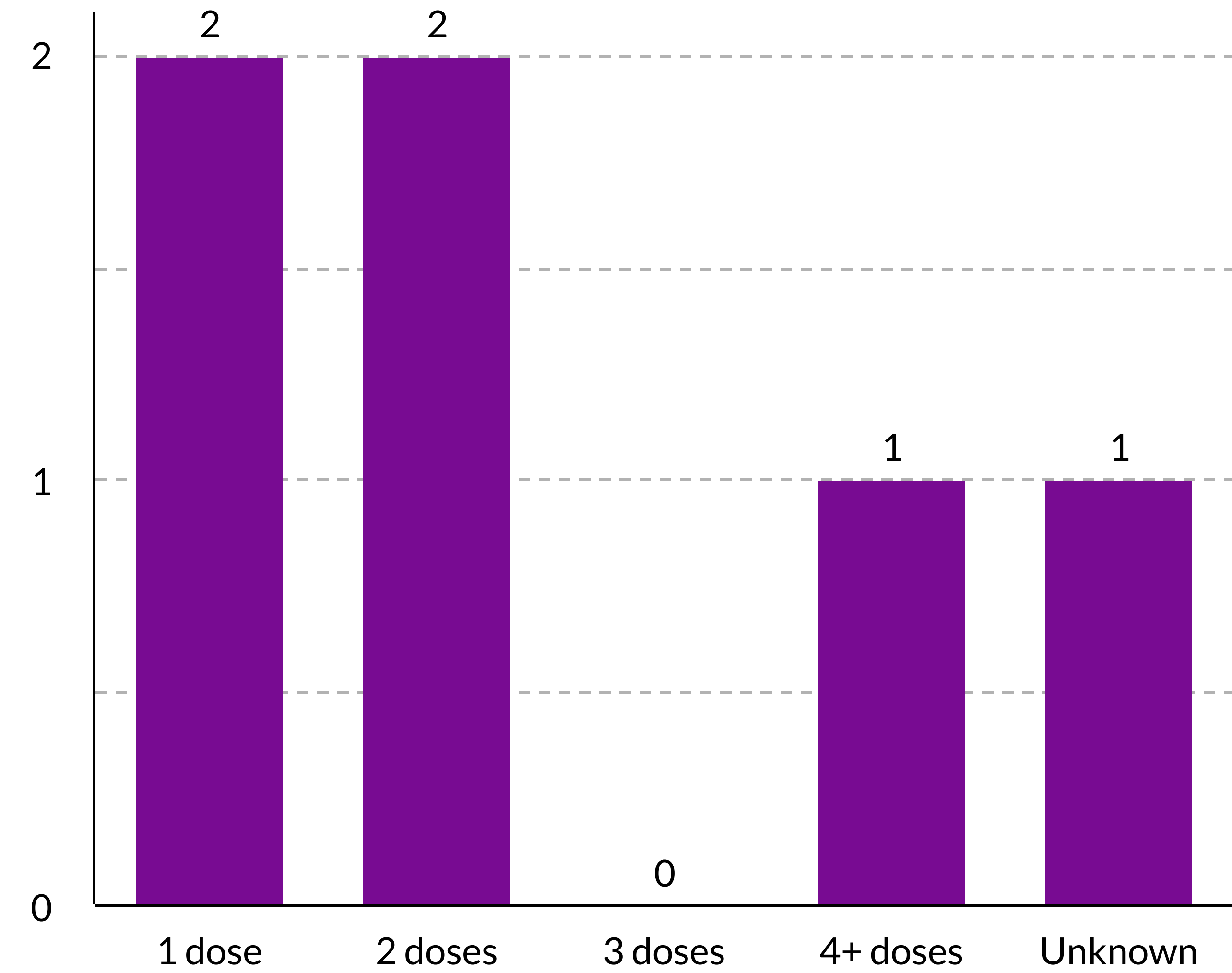
Naloxone Administration

NALOXONE ADMINISTRATION STATUS



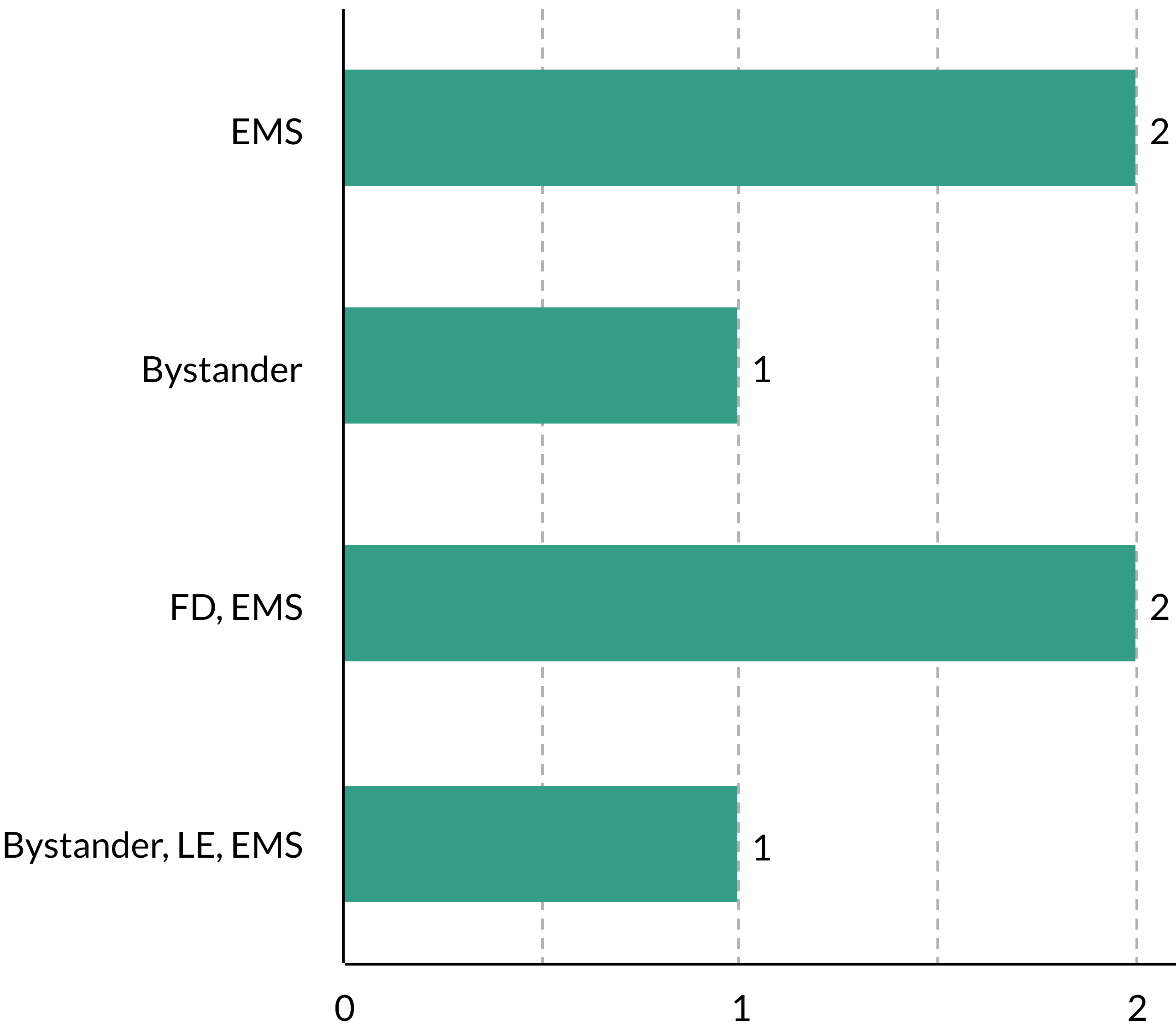
Naloxone administered (35%)
No naloxone administered (65%)

NUMBER OF DOSES (2 MG) ADMINISTERED

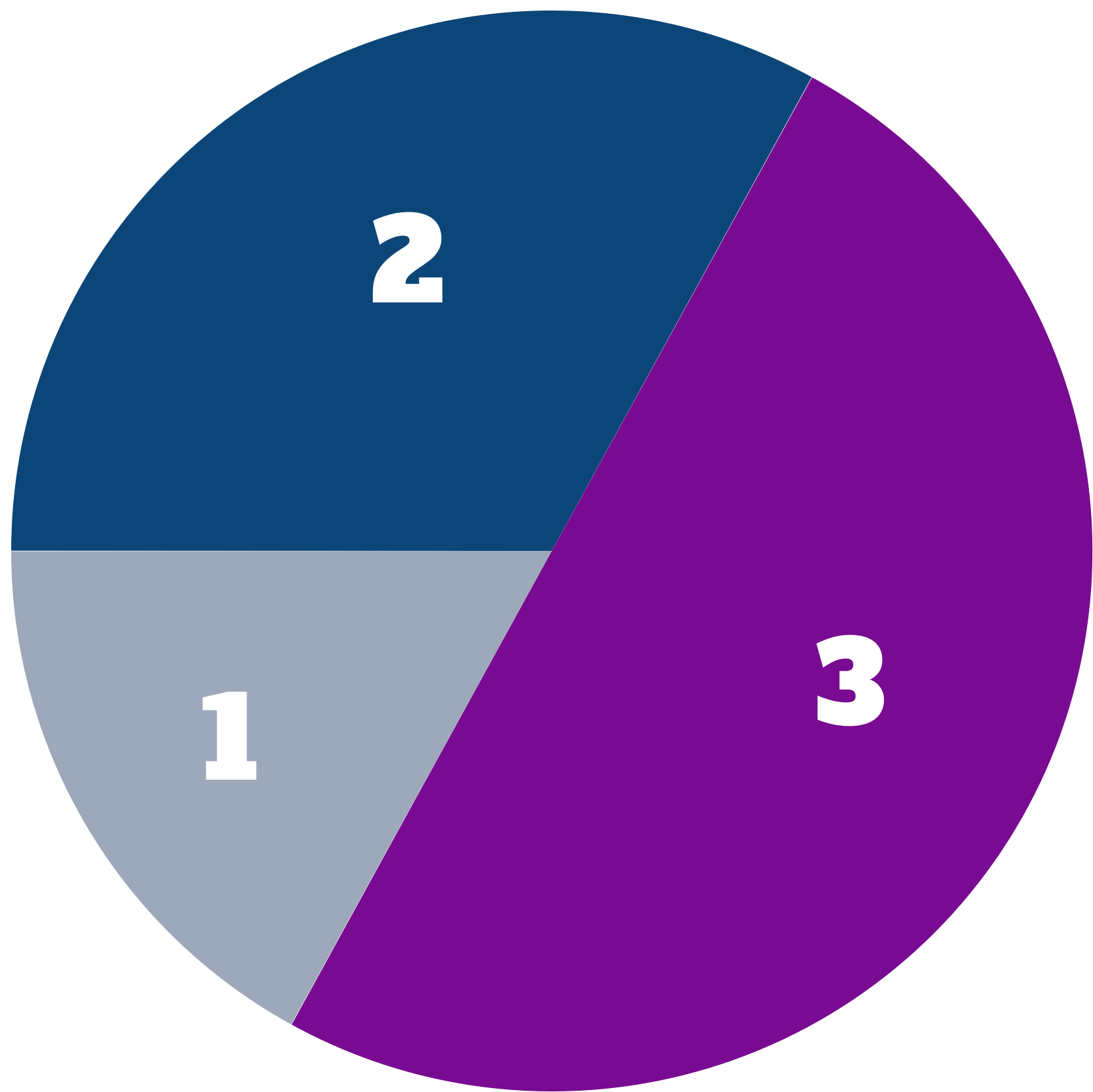


*2 mg conversion

WHO ADMINISTERED NALOXONE?



NALOXONE METHOD OF ADMINISTRATION

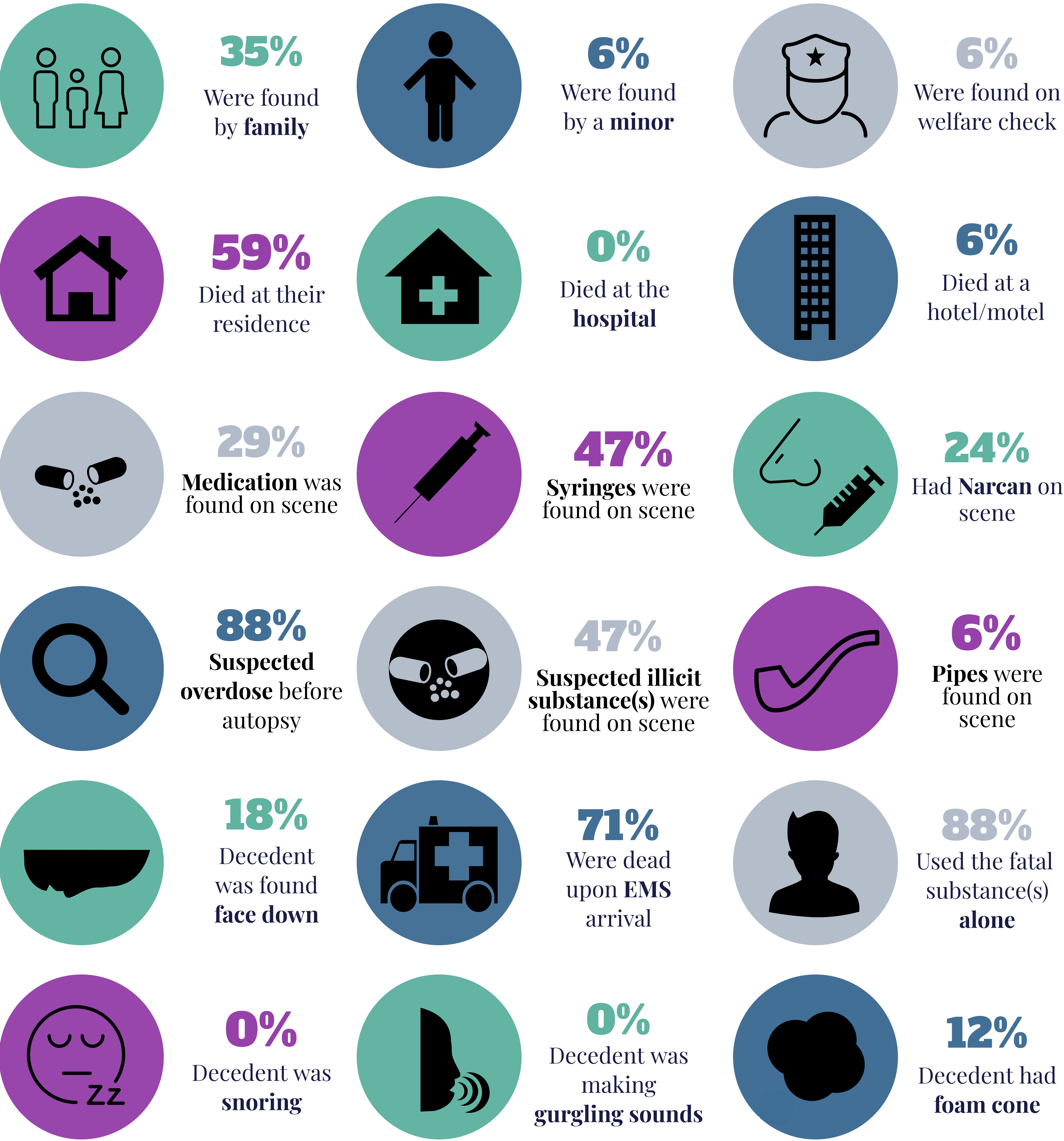


IV (33%)
Nasal and IV (50%)
Unknown (17%)

Deaths Related to Opioids and Other Drugs

Mason, Leelanau, & Osceola County

Death Scene Findings

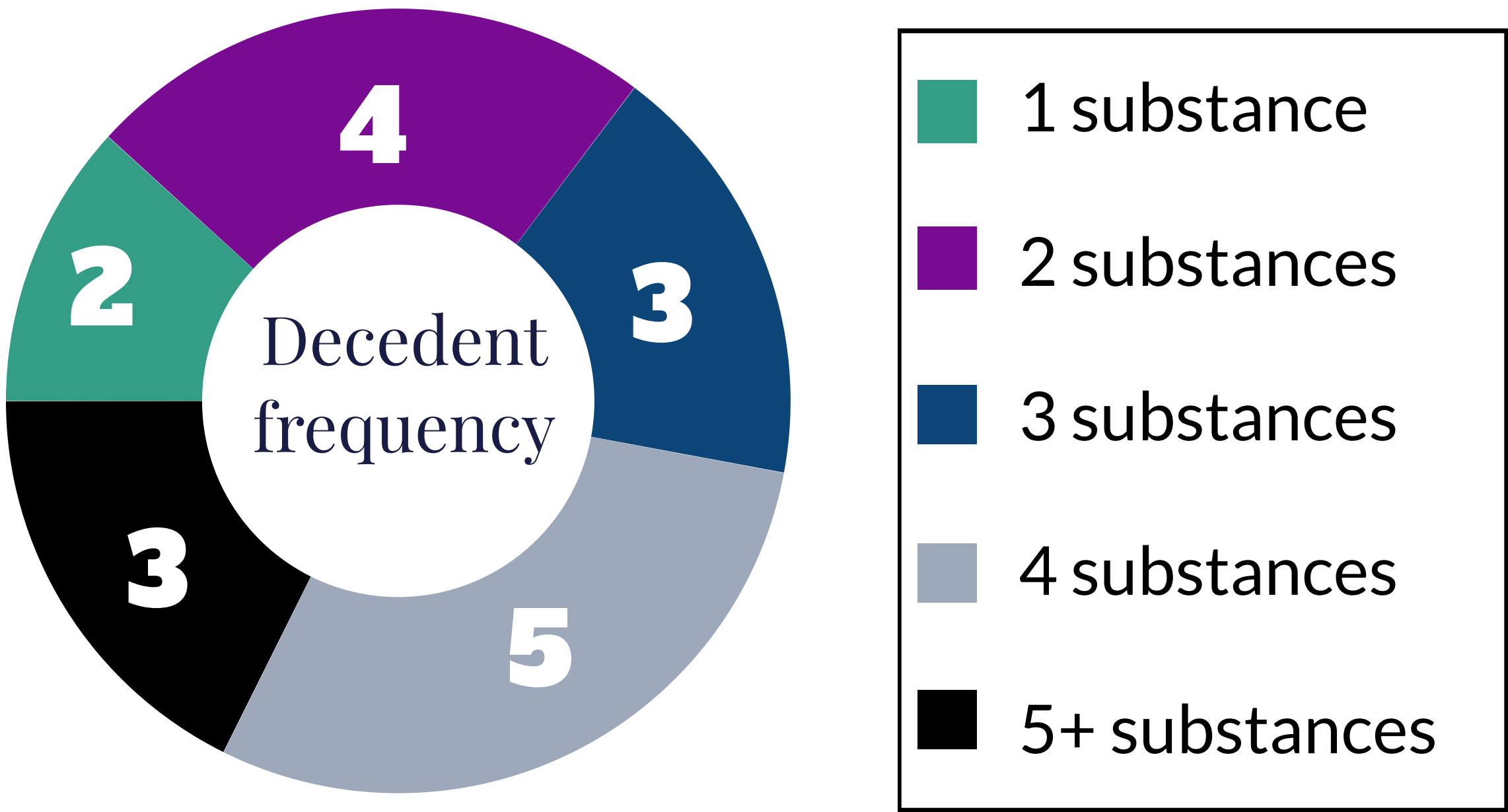


Deaths Related to Opioids and Other Drugs

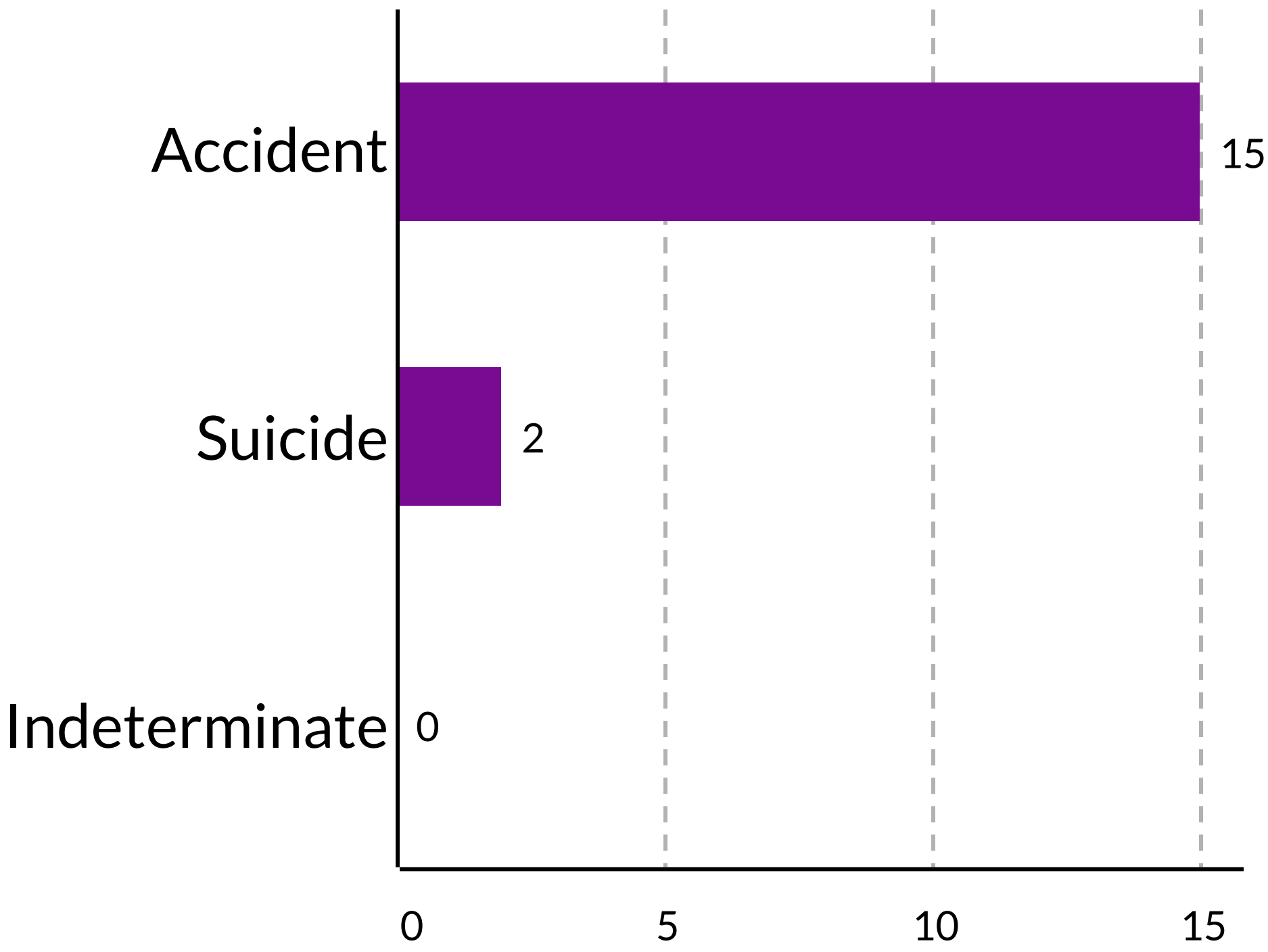
Mason, Leelanau, & Osceola County

Autopsy and Toxicology Results

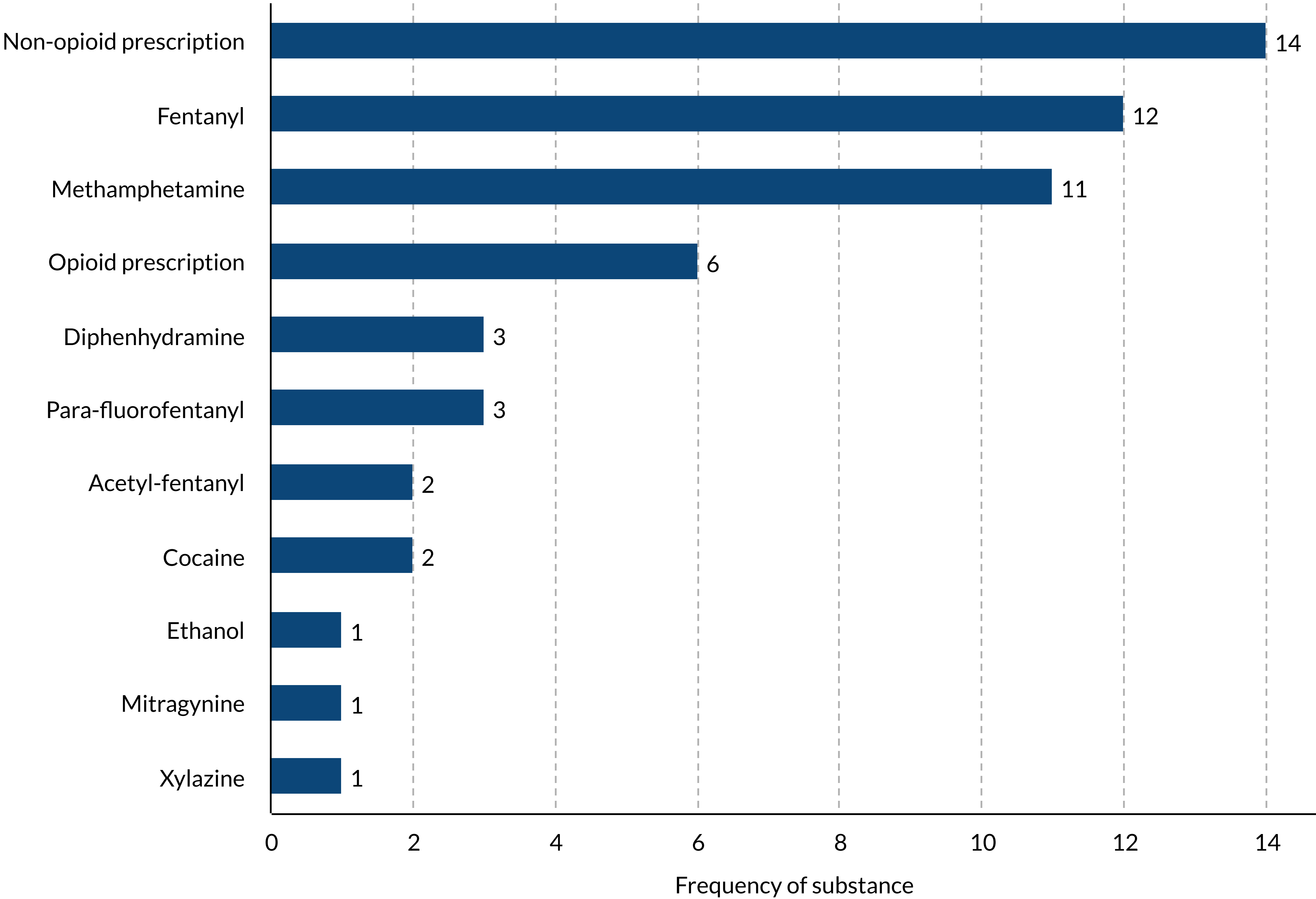
NUMBER OF SUBSTANCES
CONTRIBUTING TO DEATH



MANNER OF DEATH



SUBSTANCES CONTRIBUTING TO DEATH

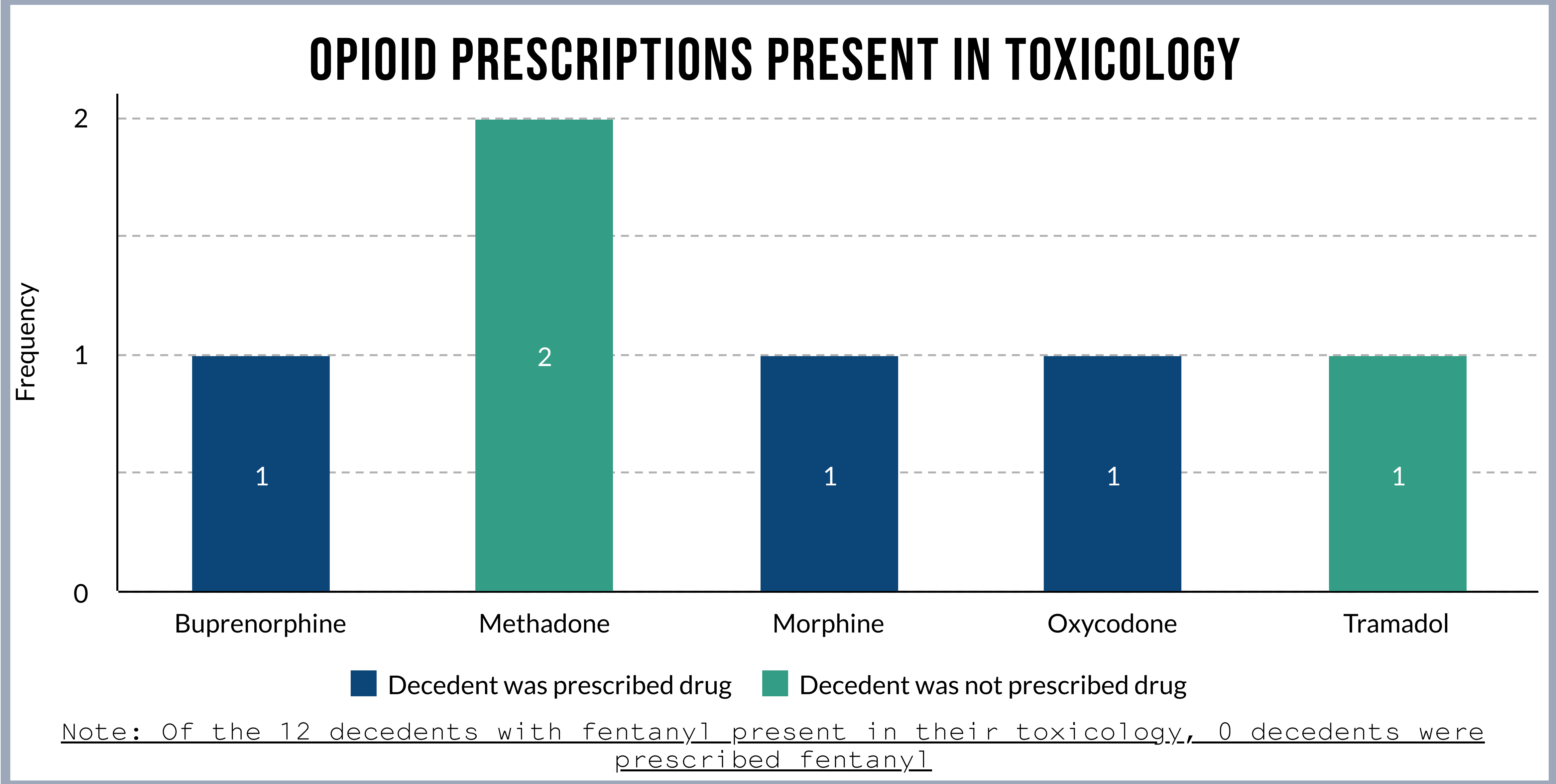
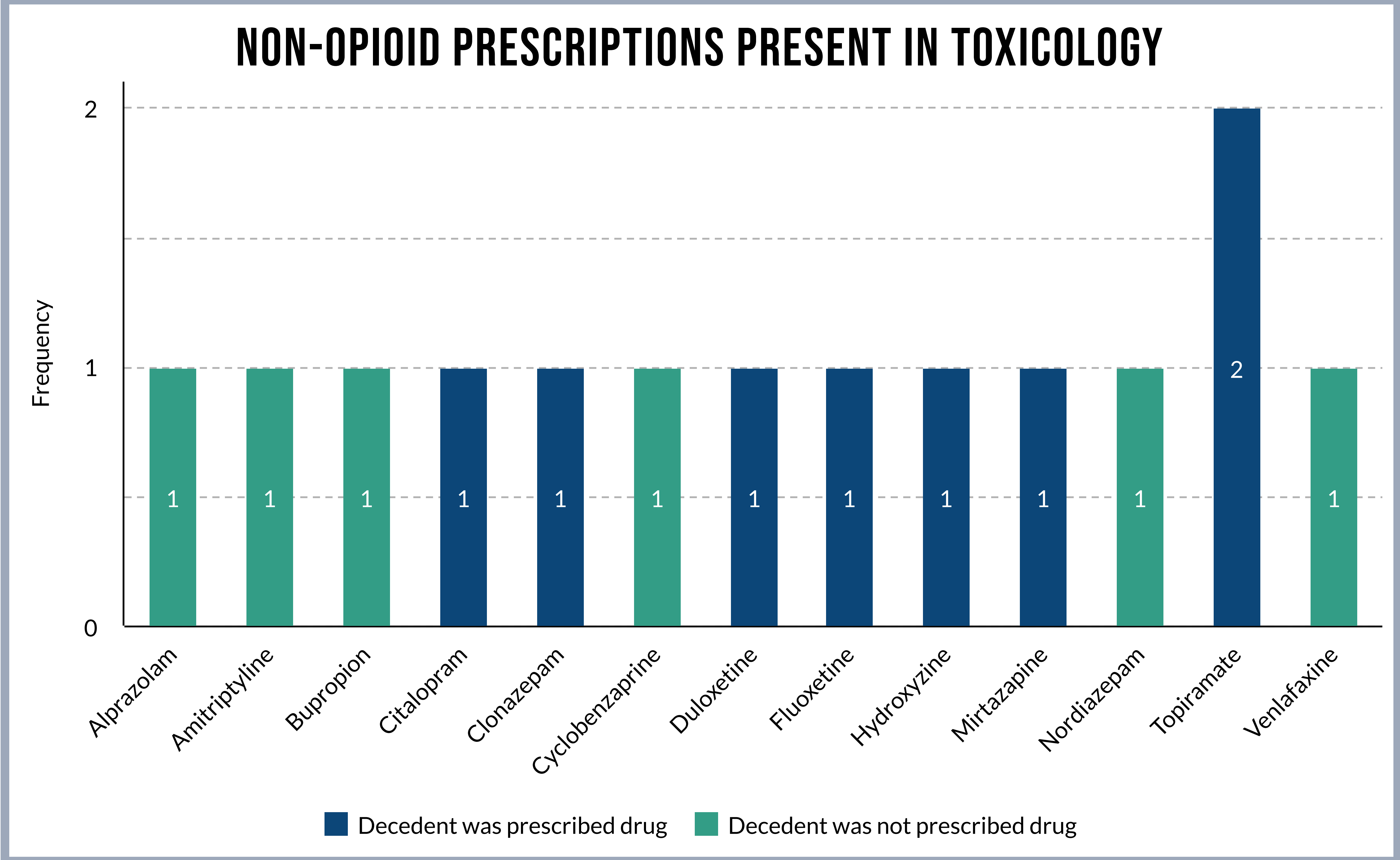


*Please see graphs on the next page for a list of opioid and non-opioid prescriptions.

Deaths Related to Opioids and Other Drugs

Mason, Leelanau, & Osceola County

Autopsy and Toxicology Results, cont.



Deaths Related to Opioids and Other Drugs

Mason, Leelanau, & Osceola County

Highlights

OPIOIDS AND POSITIONAL ASPHYXIA

14% (2 of 14) of decedents who died due an opioid were originally found in a potentially airway compromising position

These positions include decedent drowning or decedent found face down on the floor, their bed, or on another surface

0% (0 of 3) of decedents who died due to only non-opioid substance(s) were originally found in a potentially airway compromising position

Opioids depress the respiratory system and when coupled with positional asphyxia, there may be an increase risk of death. This MEO suggests that those who use substances not use alone and to ensure they are not at risk for slumping forward onto their face.

NOVEL SUBSTANCES

Xylazine

1 death

- Only approved use is for veterinarian medicine in horses, cattle, etc.
- Used for sedation, anesthesia, muscle relaxation, and analgesia

Para-Fluorofentanyl

3 deaths

- Analogue of fentanyl that causes similar effects to fentanyl
- Reportedly more toxic than fentanyl but provides lower levels of pain mitigation
- No approved medical use in the United States

Acetyl-Fentanyl

2 deaths

- Analogue of fentanyl
- Stronger than morphine but weaker than fentanyl
- No approved medical use in the United States

SUBSTANCE COMBINATIONS

HEROIN & FENTANYL

0 decedents had heroin in their toxicology

XYLAZINE & FENTANYL

1 decedent had xylazine in their toxicology
This decedent also had fentanyl in their toxicology

BENZODIAZEPINES & OPIOIDS

2 decedents had a benzodiazepine and an opioid in their toxicology
Neither decedent were prescribed the opioid and benzodiazepine

METHAMPHETAMINE & OPIOIDS

12 decedents had methamphetamine and opioid(s) in their toxicology
11 decedents had methamphetamine and fentanyl in their toxicology