

Deaths related to opioids and other drugs

Annual Report 2021

Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, and Van Buren 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: Cass county started working with this MEO in 2021. Comparison data for previous years is excluded where indicated (page 3).

AI/H: American Indian and Hispanic; A=Asian; B=Black/African-American; B/H=Black and Hispanic; H=Hispanic; ME=Middle Eastern; W=White; W/AI=White/American Indian; E=Female; M=Male

Please email questions to pathology@med.wmich.edu

County reports are available here: <https://mimedicalexaminer.com/node/27>

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

Deaths Related to Opioids and Other Drugs

Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

All drug-related deaths: Allegan

Age	Race	Sex	Death certificate: Substances contributing to death	Injury Zip code
19	B	M	fentanyl	49010
27	W	M	fentanyl, ethanol	49010
28	W	M	fentanyl, ethanol, cocaine	49078
36	W	F	fentanyl, methamphetamine, xylazine, alprazolam, hydroxyzine	49080
41	H	M	fentanyl	49423
45	W	M	fentanyl, methamphetamine	49348
45	W	M	methamphetamine	49408
50	W	M	fentanyl, cocaine	unknown
54	W	F	alprazolam, oxycodone, duloxetine, gabapentin, trazodone, diphenhydramine	49078
58	W	M	methamphetamine	unknown
60	H	M	methamphetamine, ethanol	49423
61	W	M	tramadol, gabapentin, trazodone, duloxetine	49078
66	W	M	chloroethane	49080

Deaths Related to Opioids and Other Drugs

Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

All drug-related deaths: Barry.

Age	Race	Sex	Death certificate: Substances contributing to death	Injury Zip code
30	W	F	methamphetamine, fentanyl	49058
35	W	F	fentanyl, alprazolam	49046
39	W	M	fentanyl, heroin, etizolam, diphenhydramine	49348
46	W	F	oxycodone, zolpidem, gabapentin	49058

Deaths Related to Opioids and Other Drugs

Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

All drug-related deaths: Berrien

Age	Race	Sex	Death certificate: Substances contributing to death	Injury Zip code
22	W	M	cocaine metabolites, ethanol, fentanyl, promethazine	49106
27	W	M	fentanyl, para-fluorofentanyl, methamphetamine	49038
29	B	M	fentanyl	49022
30	W	M	fentanyl, methamphetamine	49085
32	W	F	acetyl-fentanyl, fentanyl, methamphetamine, para-fluorofentanyl	49117
32	ME	M	diazepam, fentanyl, heroin, methamphetamine	49120
32	W	M	fentanyl, heroin, methamphetamine	Unknown
33	W	F	fentanyl, methadone, methamphetamine, para-fluorofentanyl	49022
33	W	M	fentanyl, methamphetamine	49120
34	B	M	ethanol, fentanyl, para-fluorofentanyl	49022
34	W	M	fentanyl, para-fluorofentanyl	49085
34	W	M	Pt. I: cardiac tamponade due to hemopericardium; Pt. II: methamphetamine*	49107
35	W	M	ethanol, etizolam, methamphetamine	49107
37	W	M	fentanyl, heroin, methamphetamine	49120
38	B	F	acute ethanol intoxication*	Unknown
39	W	M	chlordiazepoxide, ethanol, fentanyl	49022
39	W	F	fentanyl, hydroxyzine, methamphetamine, oxycodone, para-flourofentanyl, tramadol	49022
40	W	M	ethanol, methadone	49120
41	W	F	ethanol, fentanyl, methamphetamine, para-flourofentanyl	49120

Deaths Related to Opioids and Other Drugs

Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

All drug-related deaths: Berrien

Age	Race	Sex	Death certificate: Substances contributing to death	Injury Zip code
45	W	F	alprazolam, fentanyl, heroin	49107
45	W	M	cocaine-metabolite, fentanyl, para-fluorofentanyl	49127
48	W	F	methamphetamine	49002
48	W	F	cocaine, methamphetamine	49111
52	B	M	cocaine, fentanyl, tramadol	49022
53	B	M	fentanyl	49022
54	W	F	7-amino clonazepam, alprazolam, dicyclomine, methadone, olanzapine, paroxetine, venlafaxine	Unknown
54	H	M	fentanyl	49022
55	W	M	alprazolam, diphenhydramine, fentanyl, hydrocodone, tramadol	49128
57	W	M	fentanyl, mitragynine	49085
57	W	M	fentanyl, methamphetamine	49127
58	W	M	morphine, oxycodone	49038
58	W	M	methamphetamine	49022
62	B	F	acetaminophen	49022
67	B	F	cyclobenzaprine, diphenhydramine, hydrocodone, gabapentin	49022
71	W	M	7-amino clonazepam, methadone	49120
72	B	M	Pt. I: intracerebral hemorrhage; Pt. II: cocaine*	49022
73	W	M	amphetamine, methamphetamine	49128

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Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

All drug-related deaths: Cass

Age	Race	Sex	Death certificate: Substances contributing to death	Injury Zip code
25	W	M	fentanyl, heroin, methamphetamine	49112
28	W	M	fentanyl, heroin	49120
29	W	M	fentanyl, heroin, para-fluorofentanyl, xylazine	49047
36	W	F	fentanyl, mitragynine	49047
41	W	M	diphenhydramine, fentanyl, heroin, methamphetamine	49120
42	W	F	amlodipine, citalopram/escitalopram	49031
44	W	F	fentanyl, para-fluorofentanyl	49047
53	W	M	fentanyl, methamphetamine	49061
60	W	F	fentanyl, gabapentin, methamphetamine	49120

Deaths Related to Opioids and Other Drugs

Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

All drug-related deaths: Calhoun

Age	Race	Sex	Death certificate: Substances contributing to death	Injury Zip code
23	B	F	fentanyl, para-fluorofentanyl, xylazine	49015
23	W	M	fentanyl, methamphetamine, para-fluorofentanyl	unknown
27	W	M	fentanyl, methamphetamine, para-fluorofentanyl	49037
29	W	M	fentanyl, methamphetamine, para-fluorofentanyl, tramadol, xylazine	49068
31	W	M	fentanyl, gabapentin	49033
31	W	F	fentanyl, para-fluorofentanyl	49011
32	W	M	ethanol, fentanyl	49037
32	W	F	methamphetamine	unknown
32	B	M	methamphetamine	49017
33	W	M	fentanyl, para-fluorofentanyl	unknown
34	W	M	etizolam, fentanyl, morphine, para-fluorofentanyl, xylazine	49037
34	W	M	acetyl-fentanyl, fentanyl	49037
35	W	F	fentanyl, para-fluorofentanyl	49017
36	H	M	alprazolam, fentanyl, methamphetamine	49037
36	W	F	fentanyl	49037
37	W	M	fentanyl, heroin, methamphetamine, para-fluorofentanyl	49014
37	H	F	fentanyl, methamphetamine	49017
37	W	F	ethanol, fentanyl, gabapentin, hydrocodone, tramadol	49037
37	B	M	Pt. I: Brainstem intraparenchymal hemorrhage; Pt. II: MDMA*	49017
38	W	F	fentanyl, heroin, methadone, para-fluorofentanyl	49017

Deaths Related to Opioids and Other Drugs

Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

All drug-related deaths: Calhoun

Age	Race	Sex	Death certificate: Substances contributing to death	Injury Zip code
39	W	F	methamphetamine	49017
39	W	M	fentanyl, methamphetamine, para-fluorofentanyl, tramadol, xylazine,	49015
39	W	M	alprazolam, fentanyl	49015
39	W	F	fentanyl, para-fluorofentanyl	49014
39	W	M	methamphetamine	unknown
40	W	M	fentanyl, xylazine	49037
40	W	M	fentanyl, morphine	49037
40	W	M	ethanol, cocaethylene, fentanyl, hydrocodone, para-fluorofentanyl	49037
41	B	F	fentanyl, heroin, methamphetamine, para-fluorofentanyl	49015
41	W	M	fentanyl, methamphetamine, para-fluorofentanyl	49017
41	H	M	fentanyl	49015
41	W	M	cocaine	49017
42	W	M	methamphetamine	49037
42	W	F	ethanol, fentanyl, methamphetamine	49037
45	W	M	fentanyl, methamphetamine	49037
48	B/H	M	fentanyl	49017
48	W	M	ethanol, fentanyl, para-fluorofentanyl	unknown
49	W	F	ethanol, hydroxyzine, mitragynine	49017
50	B	M	ethanol, fentanyl	49037
51	W	F	cocaine	49015

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All drug-related deaths: Calhoun

Age	Race	Sex	Death certificate: Substances contributing to death	Injury Zip code
52	W	F	tramadol	49015
53	W	M	methamphetamine	49068
53	W	M	clonazepam, clozapine	49014
54	W	F	fentanyl, hydroxyzine, methamphetamine, morphine, trazodone	49014
54	W	M	cocaethylene, cocaine, ethanol, fentanyl	49015
54	W	M	alprazolam, cyclobenzaprine, fentanyl, heroin, tramadol	49017
56	W	M	ethanol	49017
56	W	M	cocaine, fentanyl	49015
57	W	M	fentanyl, methamphetamine	49029
58	W	M	cyclobenzaprine, fentanyl, gabapentin, tramadol	49068
58	W	F	alprazolam, methadone	49037
59	W	F	duloxetine, gabapentin, hydrocodone, methadone	49014
59	B	M	ethanol, fentanyl, methamphetamine	49037
60	W	F	fentanyl, methadone	49015
60	B	M	cocaine, fentanyl	49014
62	W	M	fentanyl, methamphetamine	49015
66	B	M	fentanyl	49015
68	W	M	alprazolam, diazepam, fentanyl, heroin,	49015
72	B	M	cocaine, fentanyl, morphine, para-fluorofentanyl, xylazine	49037
81	B	M	fentanyl, tramadol, xyalzine	49037

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All drug-related deaths: Grand Traverse

Age	Race	Sex	Death certificate: Substances contributing to death	Injury Zip code
29	W	M	fentanyl, methamphetamine	49685
31	W	M	fentanyl, methamphetamine	49685
32	W	M	fentanyl, heroin	49686
32	H	M	fentanyl	49617
32	W	F	mitragynine	49686
36	A	M	diazepam, fentanyl	49685
38	W	M	fentanyl, methamphetamine, para-fluorofentanyl	49601
39	W	M	diazepam, fentanyl	49650
41	AI/H	M	acetyl-fentanyl, fentanyl, mitragynine, para-fluorofentanyl	49643
42	W	M	7-amino clonazepam, acetyl-fentanyl, cocaine, fentanyl, heroin, methamphetamine, mitragynine, nordiazepam, para-fluorofentanyl, xylazine	49686
43	W	F	fentanyl, methamphetamine	Unknown
44	W	M	fentanyl	49685
48	W	M	fentanyl	49686
56	W	F	amitriptyline, gabapentin	49686
57	W	M	acetyl-fentanyl, fentanyl, heroin, methamphetamine, para-fluorofentanyl	49633
66	W	M	clonazepam, diphenhydramine	49616
68	B	M	fentanyl, methamphetamine, para-fluorofentanyl	49643
68	W	F	bupropion	49649
68	B	M	ethanol, fentanyl, methylphenidate, para-fluorofentanyl, ritalinic acid, xylazine	49686

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Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

All drug-related deaths: Kalamazoo

Age	Race	Sex	Death certificate: Substances contributing to death	Injury Zip code
23	W	F	fentanyl	49008
23	B	M	methamphetamine	Unknown
24	B	M	acetyl-fentanyl, fentanyl, heroin, methamphetamine	49009
25	W	F	fentanyl, methamphetamine	49017
25	W	F	fentanyl, methamphetamine, morphine	49002
25	W	M	Acute and chronic ethanol use*	Unknown
26	B	M	fentanyl, methamphetamine	49048
26	W	M	alprazolam, fentanyl, methamphetamine	49009
27	W	F	fentanyl, methamphetamine, para-fluorofentanyl	49001
27	W	F	alprazolam, fentanyl, heroin, para-fluorofentanyl	49007
30	W	M	methamphetamine	Unknown
30	W	M	fentanyl	49004
31	W	M	Pt. I: cardiac tamponade due to aortic dissection; Pt. II: methamphetamine*	49048
32	B	M	cocaine	Unknown
33	W	M	fentanyl, tramadol	49007
33	W	M	fentanyl, heroin, methadone, para-fluorofentanyl	49024
35	A	F	alprazolam, fentanyl, heroin, methamphetamine, para-fluorofentanyl, sertraline,	49002
35	W	M	acetyl fentanyl, alprazolam, cocaine, fentanyl, hydrocodone, para-fluorofentanyl	49007
35	W	F	fentanyl, methamphetamine	49037
36	W	M	fentanyl	49014

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Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

All drug-related deaths: Kalamazoo

Age	Race	Sex	Death certificate: Substances contributing to death	Injury Zip code
36	W	M	ethanol, fentanyl, mitragynine	49006
36	B	F	fentanyl, cocaine, cocaethylene, ethanol	49008
36	W	M	fentanyl	49008
37	W	F	methamphetamine	49008
37	W	M	alprazolam, fentanyl, para-fluorofentanyl	49048
38	W	F	alprazolam, methamphetamine, oxycodone	49245
38	W	F	Pt. I: complications of type I diabetes mellitus; Pt. II: methamphetamine*	49024
39	W	M	fentanyl, para-fluorofentanyl	Unknown
39	B	M	acetyl-fentanyl, fentanyl, methamphetamine, para-fluorofentanyl	49007
39	W	F	fentanyl, fluoxetine, methamphetamine, norfluoxetine	49007
39	W	M	ethanol, fentanyl	49007
40	W	M	Acute and chronic ethanol use*	49009
41	W	M	chlordiazepoxide, diphenhydramine, fentanyl, heroin, para-fluorofentanyl, tramadol, xylazine	49012
41	W	M	cocaethylene, cocaine, ethanol, fentanyl, para-fluorofentanyl	49024
42	W	M	fentanyl, methamphetamine, mitragynine, para-fluorofentanyl	49007
42	B	M	methamphetamine	Unknown
42	B	M	Pt I: hypertensive cardiovascular disease; Pt. II: cocaine*	49001
43	W	M	methamphetamine, nordiazepam, orphenadrine, oxycodone	49093
44	W	M	fentanyl, para-fluorofentanyl, acetyl-fentanyl	49006
45	B	M	butalbital, ethanol, heroin	49008

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All drug-related deaths: Kalamazoo

Age	Race	Sex	Death certificate: Substances contributing to death	Injury Zip code
45	B	F	cocaethylene, cocaine, ethanol, fentanyl, para-fluorofentanyl	49007
45	W	M	fentanyl, gabapentin	49006
45	B	M	methamphetamine	49001
47	W	F	fentanyl	Unknown
49	W	F	Pt. I: gastrointestinal hemorrhage, uncertain source; Pt. II: chronic alcohol use, methamphetamine*	49001
50	W	F	fentanyl, methamphetamine, para-fluorofentanyl	49048
50	W	M	fentanyl, methamphetamine	49009
50	W	F	diphenhydramine, gabapentin, hydrocodone	49002
50	B	M	cocaethylene, cocaine, ethanol, fentanyl, methamphetamine	49007
50	B	M	methamphetamine	49048
50	W	F	diazepam, fentanyl, gabapentin, morphine	49048
52	W	M	amitriptyline, hydrocodone, methamphetamine	49001
54	W	M	methamphetamine	49007
54	B	M	methamphetamine	49001
54	B	M	acetyl-fentanyl, fentanyl, methamphetamine, para-fluorofentanyl	49007
55	W	M	methamphetamine	49001
55	B	M	cocaethylene, ethanol, fentanyl	49048
55	W	F	alprazolam, diphenhydramine, methadone, trazodone	49001
55	W	F	methamphetamine	Unknown
55	W	F	fentanyl, gabapentin, methadone, para-fluorofentanyl, promethazine, tramadol	49048

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Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

All drug-related deaths: Kalamazoo

Age	Race	Sex	Death certificate: Substances contributing to death	Injury Zip code
56	W	F	acetyl-fentanyl, fentanyl, gabapentin, hydroxyzine, mitragynine, morphine	49006
56	B	M	methamphetamine	49007
56	W	M	fentanyl, methamphetamine	Unknown
57	W	M	acetaminophen	49002
57	B	F	fentanyl, para-fluorofentanyl, methamphetamine	49048
57	W	F	methamphetamine	49001
58	B	M	hydrocodone	49001
58	W	F	fentanyl, methamphetamine	49009
58	W	F	fentanyl, gabapentin	49079
58	W	M	amlodipine, ethanol, metoprolol, venlafaxine	49009
60	W	F	ethanol, fentanyl	49048
60	W	M	doxepin, duloxetine, methadone	49090
60	B	M	methamphetamine	49007
60	W	F	ethanol, fentanyl, methamphetamine,	49001
60	W	M	acetyl-fentanyl, ethanol, fentanyl, para-fluorofentanyl,	49053
61	W	M	Pt. I: sudden cardiac event; Pt. II: cocaine*	49001
61	W	M	gabapentin, methadone	49001
61	B	F	clonazepam, duloxetine, fentanyl, fluoxetine, morphine	49007
62	W	M	gabapentin, tramadol	49034
62	W	F	1,1-difluoroethane, bromazolam, fentanyl, methamphetamine, para-fluorofentanyl,	49006

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Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

All drug-related deaths: Kalamazoo

Age	Race	Sex	Death certificate: Substances contributing to death	Injury Zip code
62	W	M	Pt. I: pulmonary thromboemboli; Pt. II: fentanyl, methadone*	49048
63	W	M	1,1-difluoroethane, bromazolam, fentanyl, methamphetamine, para-fluorofentanyl,	49048
63	W	M	Pt. I: pulmonary thromboemboli; Pt. II: fentanyl, methadone*	49007
64	B	M	cocaine	49048
65	W	F	methamphetamine	Unknown
66	B	M	fentanyl, nordiazepam, para-fluorofentanyl	49048
66	B	M	Pt. I: intracerebral hemorrhage; Pt. II: cocaine*	49007
69	W	F	cocaine, ethanol	49048
70	W	F	sertraline	49080
70	B	M	Pt. I: gastric ulcer (perforated); Pt. II: acetyl-fentanyl, fentanyl, heroin*	49001
71	B	F	fentanyl, heroin	49048
76	W	F	methamphetamine	49002

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Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren 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	cyclobenzaprine, fentanyl, methamphetamine, para-fluorofentanyl, xylazine	49655
51	W	M	fentanyl, methamphetamine, methadone, tramadol	49631
53	B	M	fentanyl, methamphetamine	49639
61	W	M	methamphetamine	49677

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Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

All drug-related deaths: Muskegon

Age	Race	Sex	Death certificate: Substances contributing to death	Injury Zip code
19	W	F	fentanyl, mitragynine	49440
19	B	M	amitriptyline	49442
20	W	M	fentanyl, heroin	49441
21	W	F	fentanyl, methamphetamine	49444
22	W	M	mitragynine	49461
23	B	M	ethanol, fentanyl	49441
26	W	F	cocaine, ethanol, fentanyl	49441
28	W	F	cocaine, fentanyl	49440
29	W	M	fentanyl, methamphetamine	49441
29	B	F	alprazolam, fentanyl, hydrocodone	49441
29	W	F	fentanyl, methamphetamine, morphine	49442
30	W	M	fentanyl, methamphetamine	49456
30	W	M	fentanyl, methamphetamine, para-fluorofentanyl	49442
30	H	M	methamphetamine	Unknown
32	B	M	acetyl fentanyl, chlorpheniramine, diphenhydramine, fentanyl, hydrocodone	49442
33	W	F	fentanyl, gabapentin, morphine, para-fluorofentanyl, tramadol	49461
33	W	F	fentanyl, heroin, methamphetamine, para-fluorofentanyl	49444
33	ME	M	cocaine, fentanyl, hydroxyzine, gabapentin	49442
34	W	F	1,1-difluoroethane	49437
35	W	F	cocaine, fentanyl, para-fluorofentanyl	49441

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Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

All drug-related deaths: Muskegon

Age	Race	Sex	Death certificate: Substances contributing to death	Injury Zip code
36	B	M	cocaine, ethanol, fentanyl	49442
36	W	M	diphenhydramine, fentanyl, methamphetamine, para-fluorofentanyl	49445
37	W	F	methamphetamine, mitragynine	49444
37	W	M	fentanyl	49442
38	W	F	diphenhydramine, fentanyl, gabapentin, trazodone	49441
39	W	M	cocaine, fentanyl	49442
40	W	M	fentanyl, methamphetamine, xylazine	49451
40	W	F	fentanyl, methamphetamine, para-fluorofentanyl	49441
40	W	M	amphetamine, cyclobenzaprine, diazepam, fentanyl, heroin, oxycodone	49445
43	W	F	fentanyl	49442
45	W	M	methamphetamine	49437
46	B	M	cocaine, cocaethylene, ethanol, fentanyl, methamphetamine	49442
47	W	M	fentanyl	49441
47	W	M	butyrylfentanyl, diphenhydramine, fentanyl	49442
48	W	M	fentanyl, hydrocodone, para-fluorofentanyl	Unknown
49	W	F	methamphetamine, methylphenidate	49444
49	B	M	cocaine, ethanol, fentanyl, morphine, para-fluorofentanyl	49444
49	W	F	fentanyl, methamphetamine, nordiazepam, para-Flourofentanyl	49441
51	W	M	fentanyl, methamphetamine	49442
51	W	M	cocaethylene, cocaine, ethanol, fentanyl, heroin	49441

Deaths Related to Opioids and Other Drugs

Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

All drug-related deaths: Muskegon

Age	Race	Sex	Death certificate: Substances contributing to death	Injury Zip code
52	W	M	cocaethylene, cocaine, ethanol, fentanyl	49442
53	B	M	cocaine, fentanyl	49442
53	W	F	fentanyl, methamphetamine	49461
54	W	M	cyclobenzaprine, ethanol, fentanyl, gabapentin	49441
56	W	F	cocaine, fentanyl	49441
56	B	F	cocaine, fentanyl	49441
56	A	F	ibuprofen	49445
57	B	M	cocaine, fentanyl, heroin	49442
57	W	F	fentanyl, gabapentin	49442
57	B	M	cocaethylene, cocaine, ethanol, fentanyl, flubromazepam, para-fluorofentanyl, xylazine	49444
58	B	M	carisoprodol, fentanyl, hydrocodone, oxycodone, para-fluorofentanyl	49444
59	W	M	amphetamine, ethanol, fentanyl, hydrocodone	49444
59	B	F	fentanyl, methadone, methamphetamine	49444
60	W	M	salicylate	49442
60	W	M	fentanyl	49440
61	W	M	cocaine	49457
61	W	M	cocaethylene, cocaine, ethanol, fentanyl	49442
64	W	M	fentanyl, para-fluorofentanyl	49415
66	W	M	fentanyl	49421
66	W	F	acute and chronic ethanol use*	49441

Deaths Related to Opioids and Other Drugs

Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

All drug-related deaths: Muskegon

Age	Race	Sex	Death certificate: Substances contributing to death	Injury Zip code
66	B	F	cocaethylene, cocaine, ethanol	49444
68	B	M	acetyl-fentanyl, fentanyl, heroin	49441
73	B	M	cocaine, hydrocodone, para-fluorofentanyl	49444
90	W	M	apixaban, hydrocodone, morphine	49441

Deaths Related to Opioids and Other Drugs

Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

All drug-related deaths: St. Joseph

Age	Race	Sex	Death certificate: Substances contributing to death	Injury Zip code
30	B	F	alprazolam, fentanyl, hydrocodone	49093
31	W	F	ethylene glycol	49040
32	B	M	alprazolam, amphetamine, cocaine, fentanyl, methamphetamine	49093
37	W	F	fentanyl, methamphetamine	unknown
38	W	M	7-amino clonazapam, cyclobenzaprine, fentanyl, hydrocodone	49093
41	W	M	Pt. I: Staphylococcus aureus sepsis, source uncertain; Pt. II: methamphetamine*	Unknown
49	W	F	alprazolam, cyclobenzaprine, methamphetamine	unknown
59	W	F	Pt. I: Colonic perforation; Pt. II: methamphetamine, morphine, oxycodone, alprazolam, and gabapentin*	49072
60	B	M	cocaine, fentanyl	49093
61	W	M	fentanyl, methamphetamine, morphine, oxycodone	49093

Deaths Related to Opioids and Other Drugs

Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

All drug-related deaths: Van Buren

Age	Race	Sex	Death certificate: Substances contributing to death	Injury Zip code
26	W	M	ethanol, fentanyl	49064
27	W	F	methamphetamine	49057
32	W	M	amphetamine, ethanol, fentanyl	49047
32	W	F	7-amino clonazepam, alprazolam, cocaine, fentanyl, hydrocodone, morphine	49090
33	W	M	methamphetamine	49079
35	W	M	fentanyl, gabapentin, mitragynine	49079
38	W	M	acetyl fentanyl, fentanyl, methamphetamine, para-flourofentanyl	49045
39	W	F	amitriptyline, methamphetamine, tramadol	49079
40	W/AI	M	ethanol, fentanyl, heroin, methamphetamine	49026
41	W	M	fentanyl, para-fluorofentanyl	49079
42	W	M	clonazepam/7-amino clonazepam, fentanyl, oxycodone	49071
45	W	F	cyclobenzaprine, ethanol, lorazepam, morphine	49026
48	W	M	fentanyl, methadone, morphine, para-fluorofentanyl	49013
49	W	M	acetyl-fentanyl, alprazolam, clonazepam, fentanyl, methamphetamine	49043
51	W	M	hydroxyzine, mirtazapine, sodium nitrite	49027
51	W	M	Pt. I: inferior right temporal lobe hemorrhage with subarachnoid hemorrhage; Pt. II: methamphetamine*	49056
54	W	F	fentanyl	49090
55	W	M	methamphetamine	49045
58	W	M	Pt. I: hypertensive cardiovascular disease; Pt. II: methamphetamine*	49026

Deaths Related to Opioids and Other Drugs

Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

All drug-related deaths: Van Buren

Age	Race	Sex	Death certificate: Substances contributing to death	Injury Zip code
59	W	M	methamphetamine	49064
63	W	F	alprazolam, hydromorphone, morphine, methamphetamine	49079
75	W	M	phentermine	49038

*Not included in report (n=19)

Deaths Related to Opioids and Other Drugs

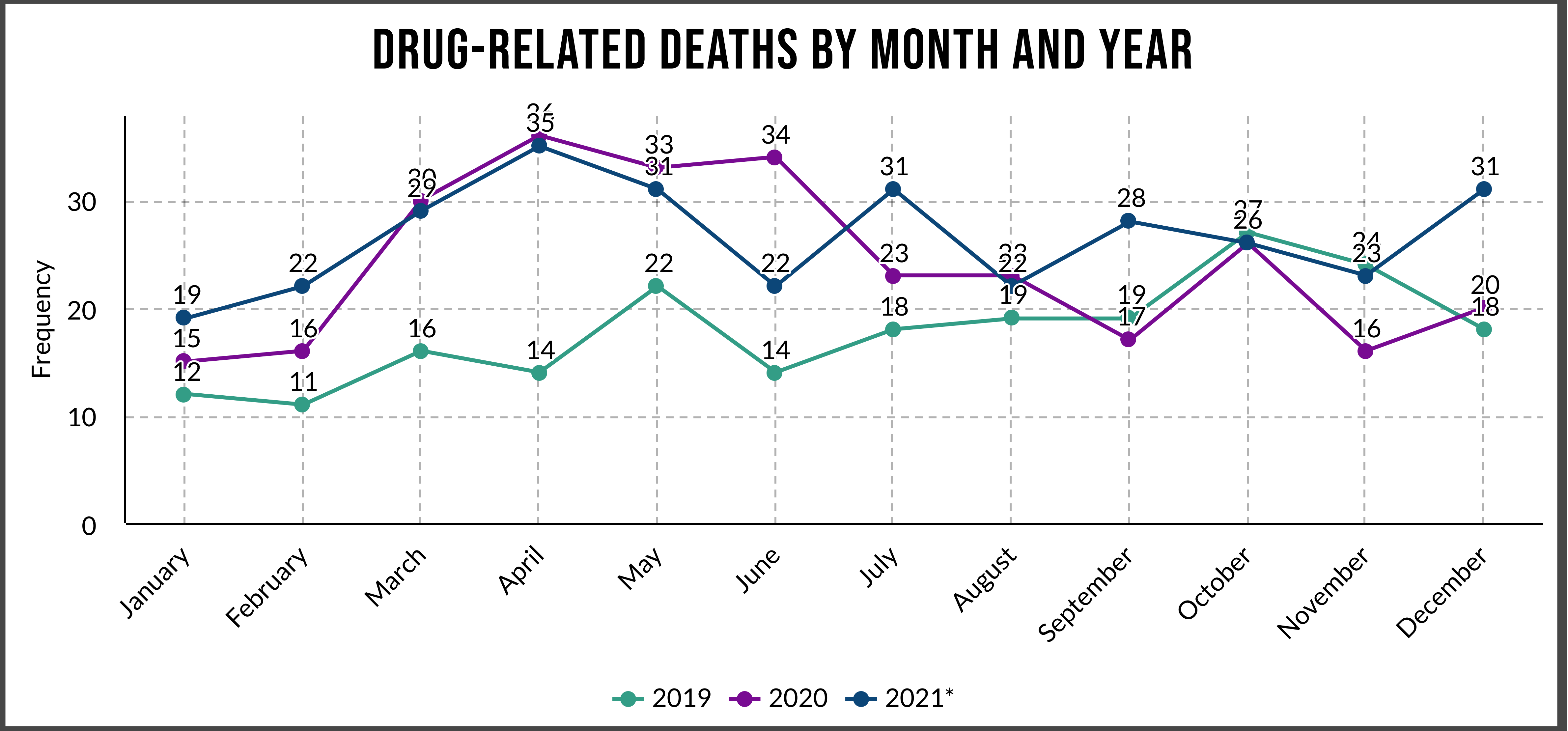
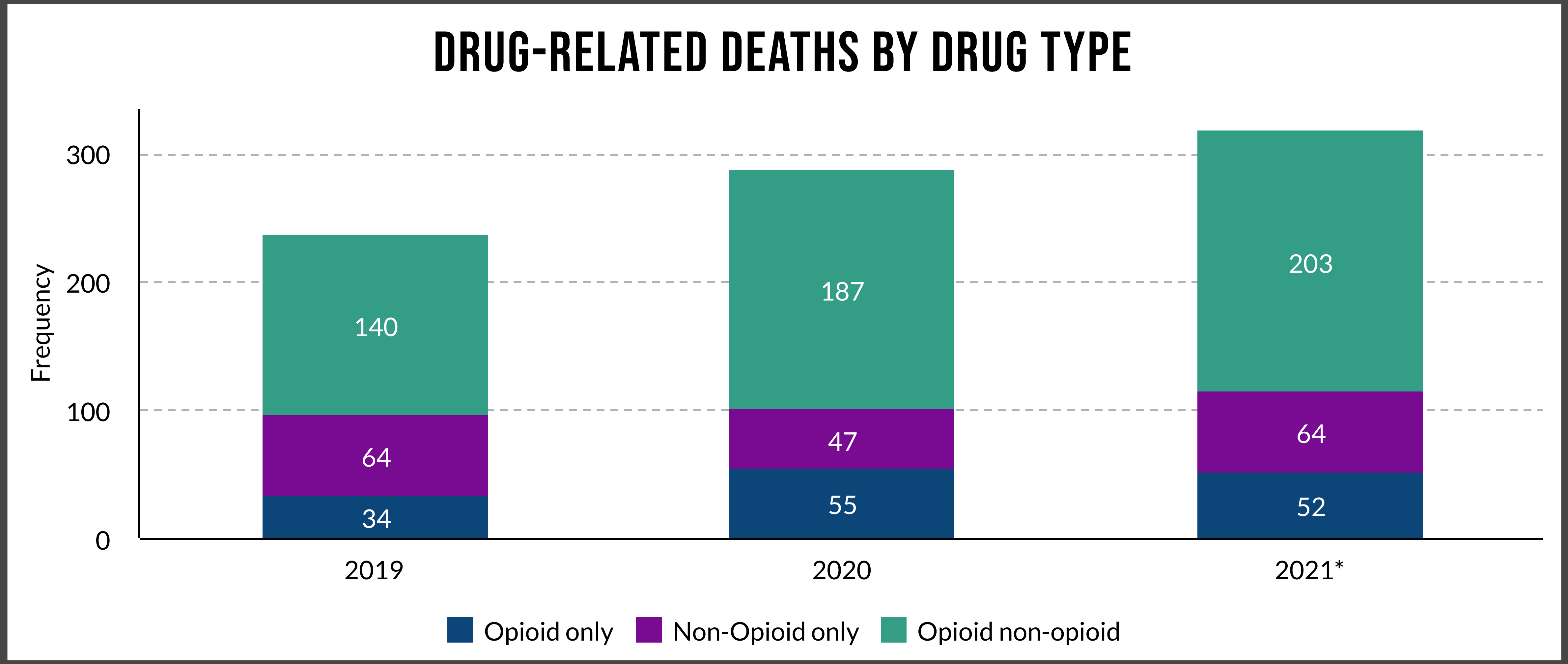
Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

Total Deaths Due to Drugs*

Year	2019	2020	2021*
Total deaths	238	289	319
Deaths per 10,000	2.0	2.4	2.6

Percent change*

10% from 2020 to 2021

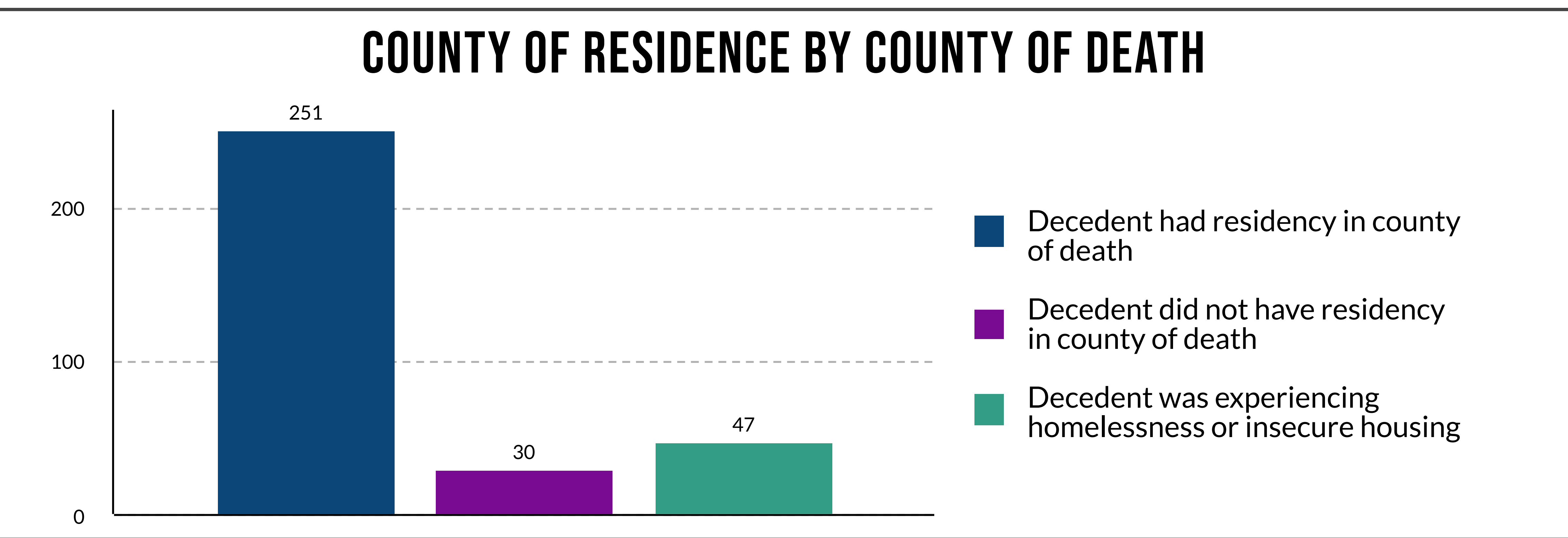
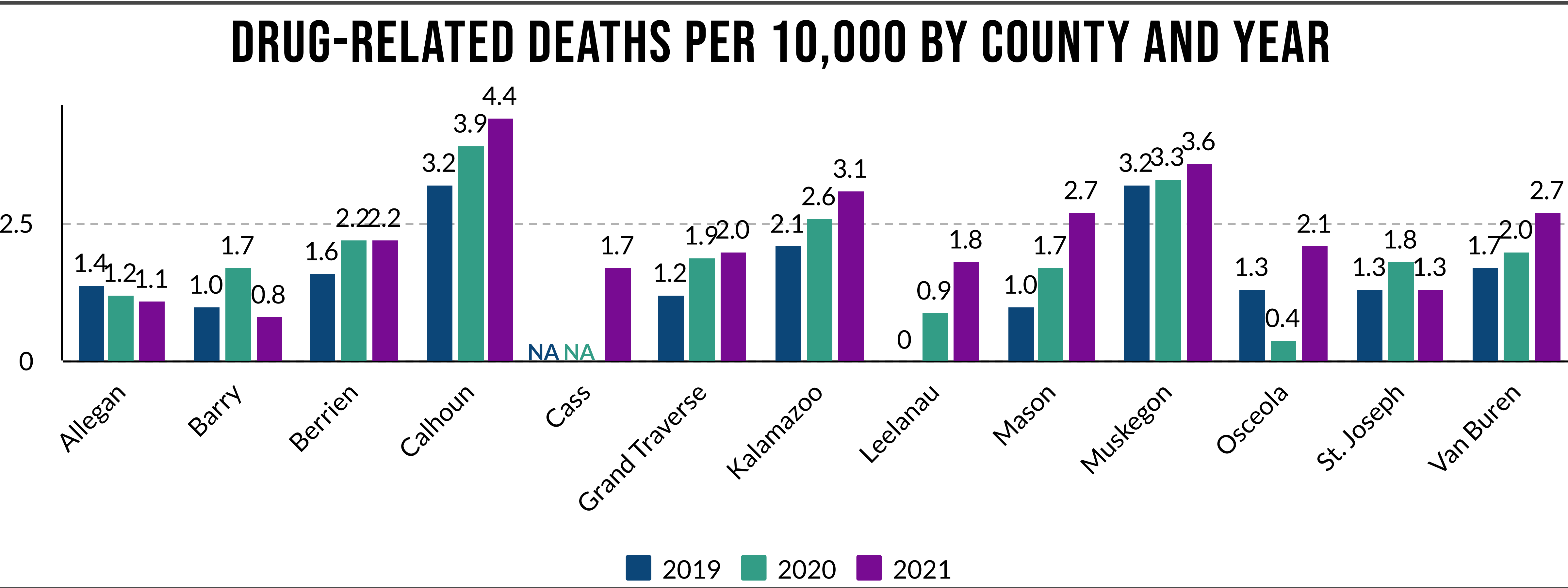
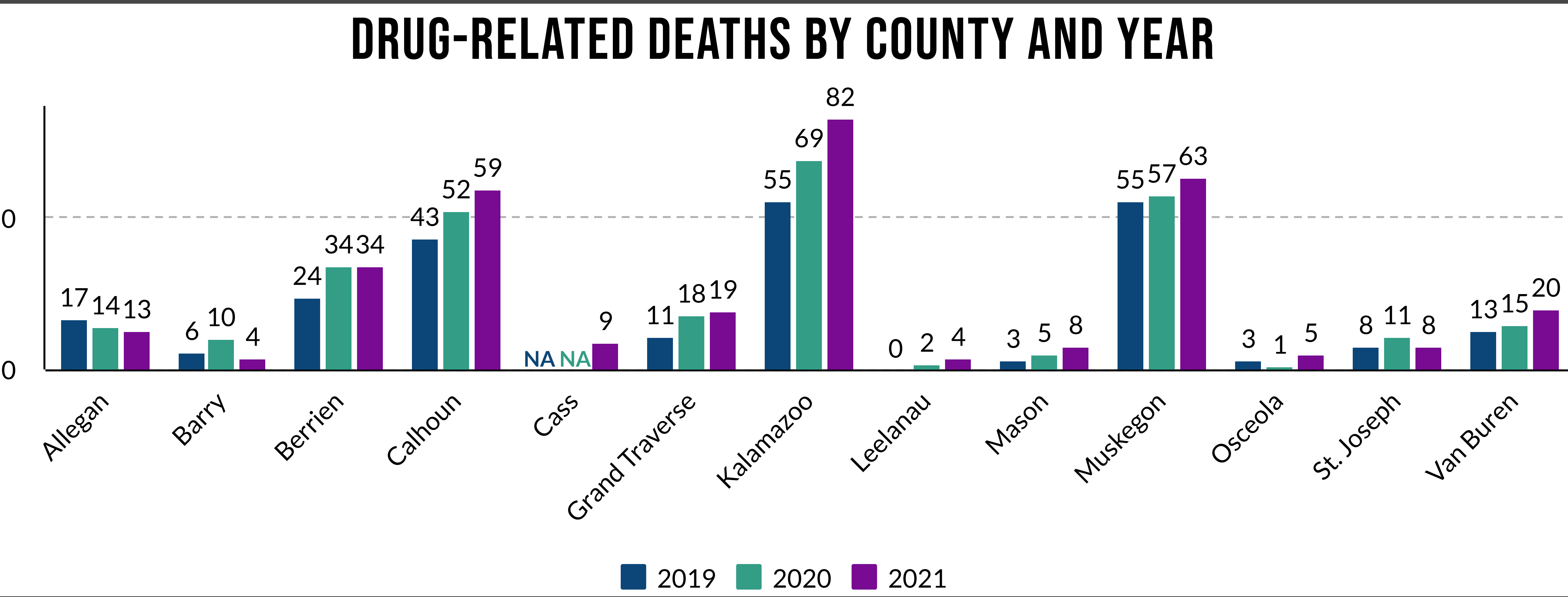


*Cass county excluded 2021 (n=9)

Deaths Related to Opioids and Other Drugs

Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

Total Deaths Due to Drugs by County

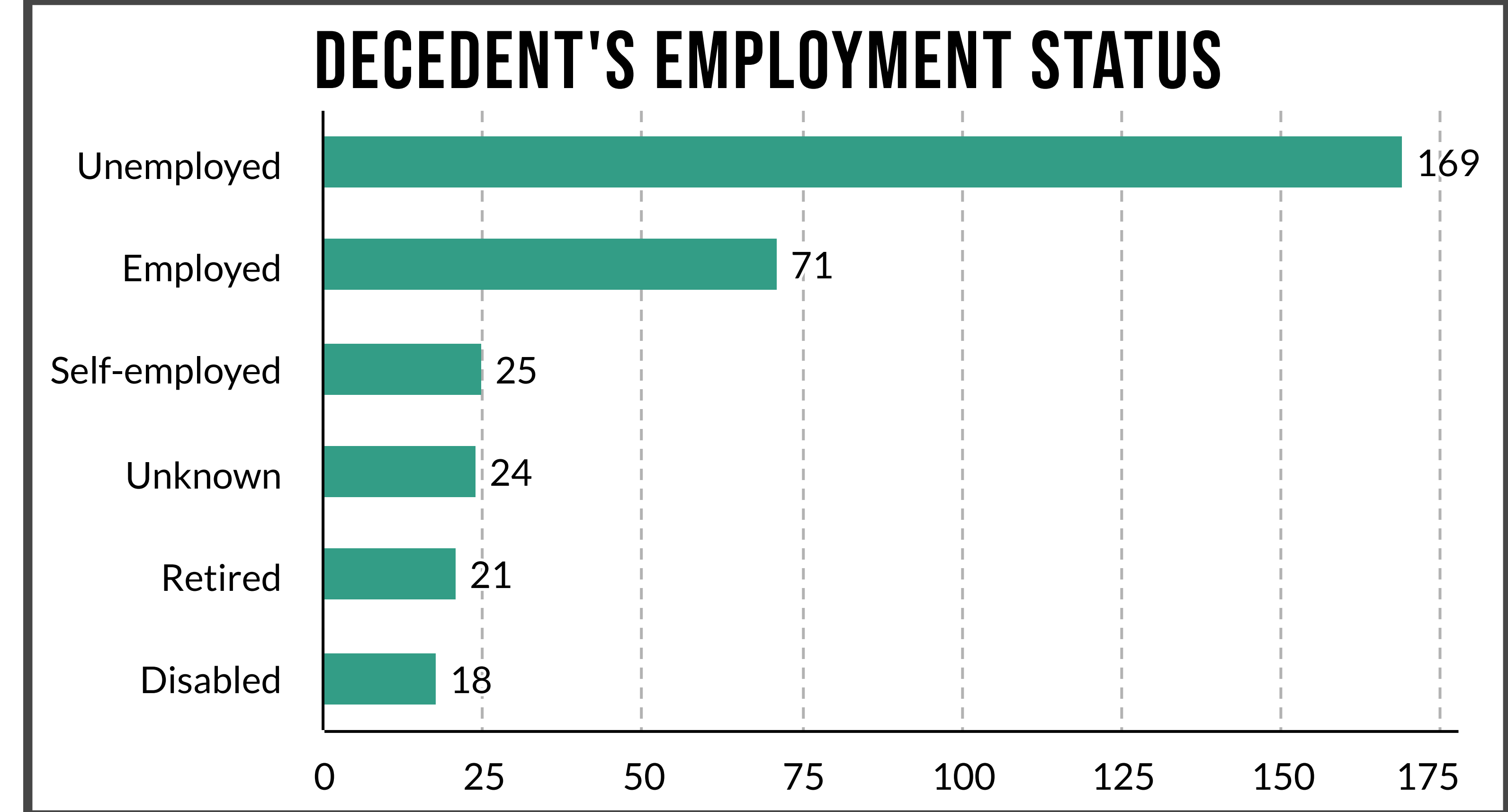


Deaths Related to Opioids and Other Drugs

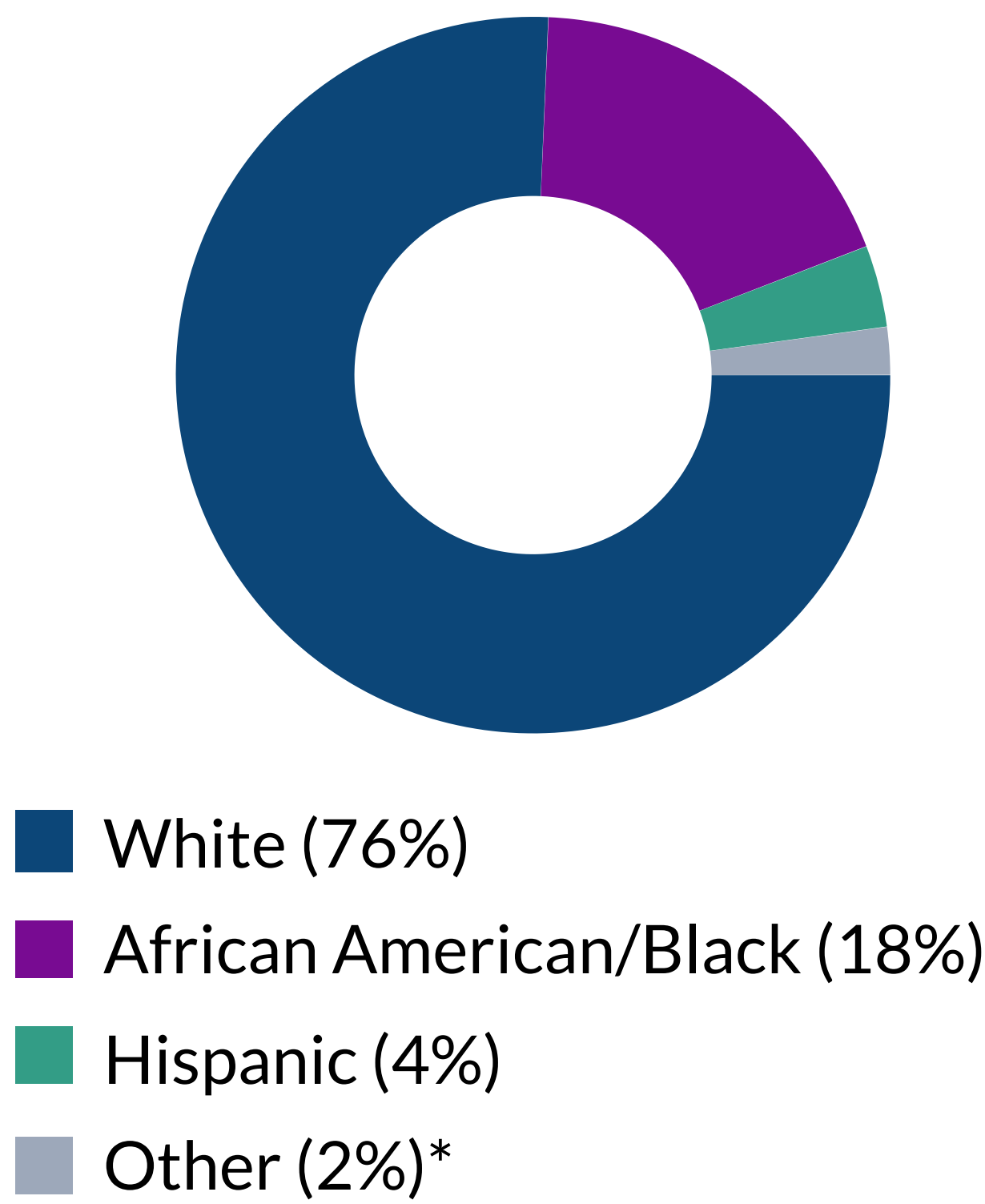
Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

Demographics

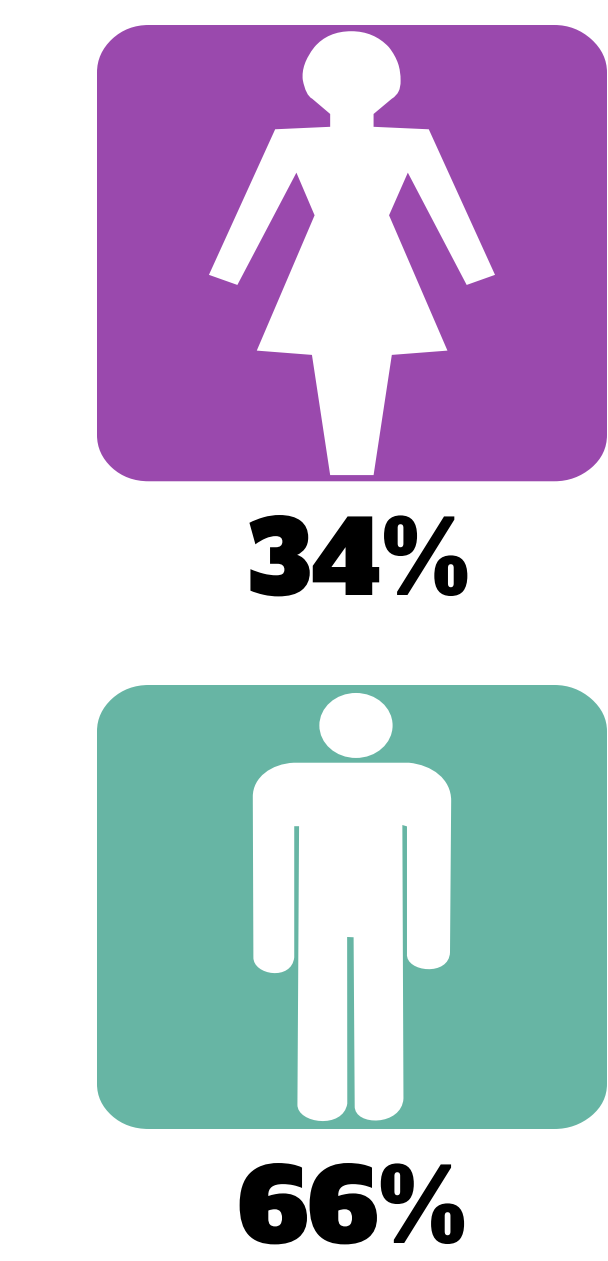
DECEDENT'S EMPLOYMENT STATUS



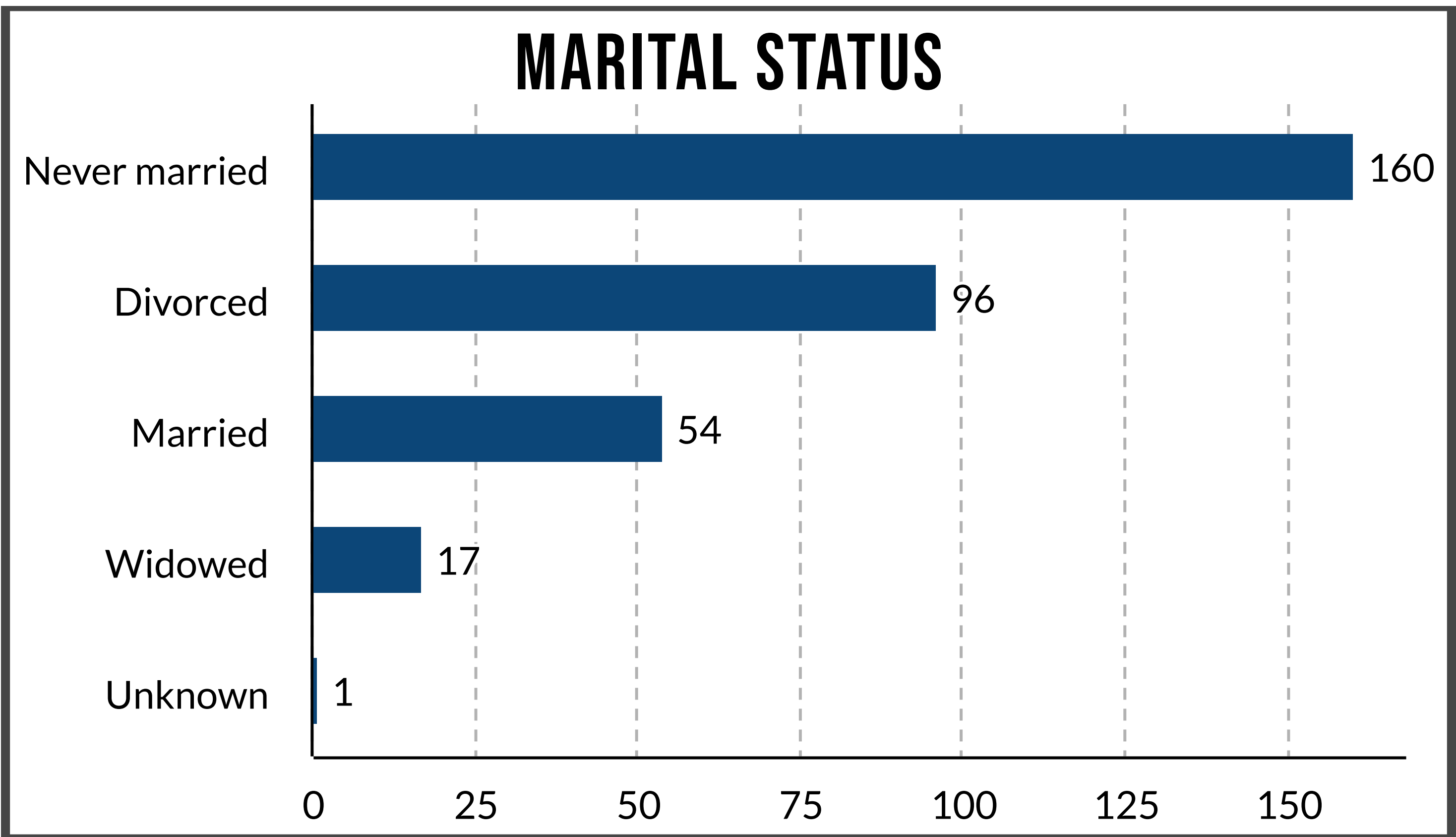
RACE



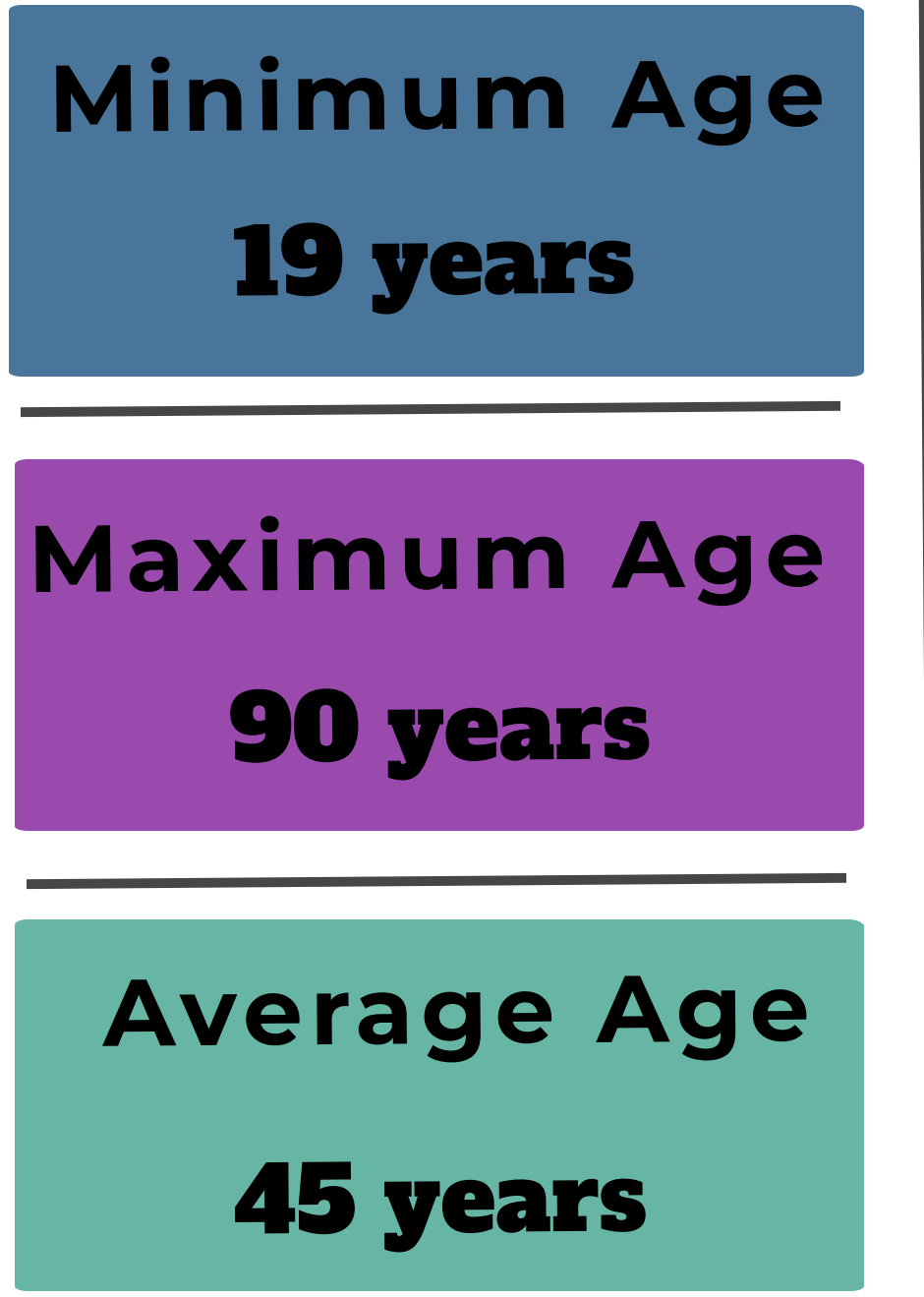
SEX



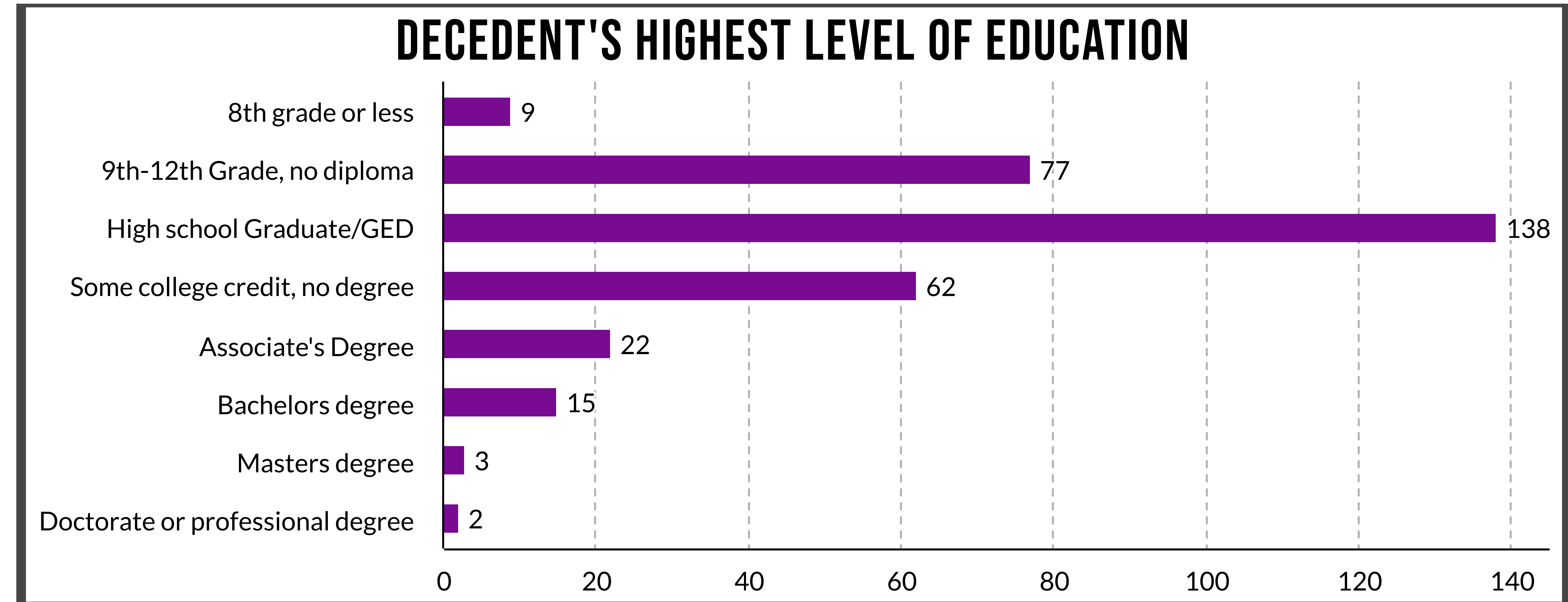
MARITAL STATUS



AGE



DECEDENT'S HIGHEST LEVEL OF EDUCATION



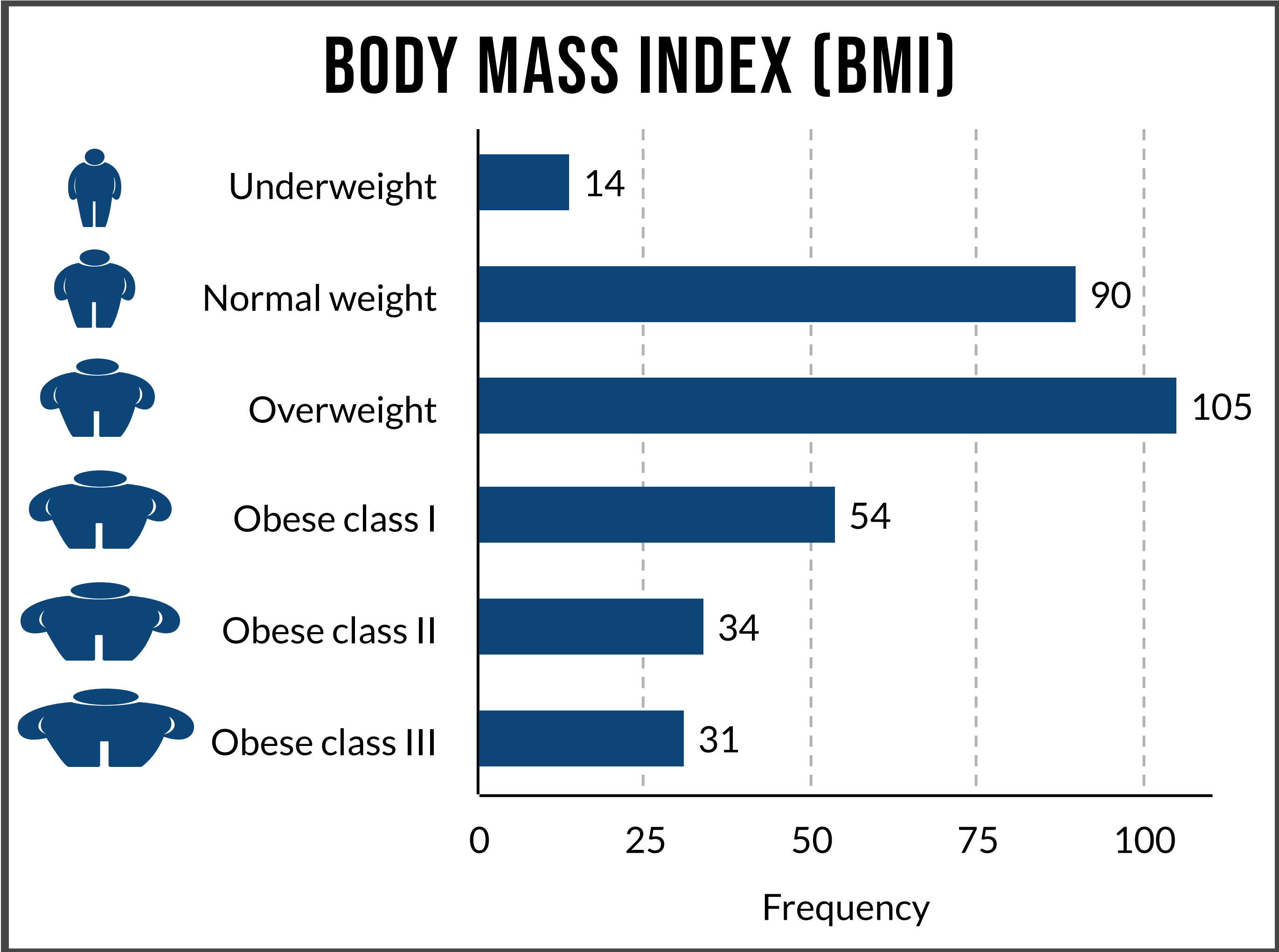
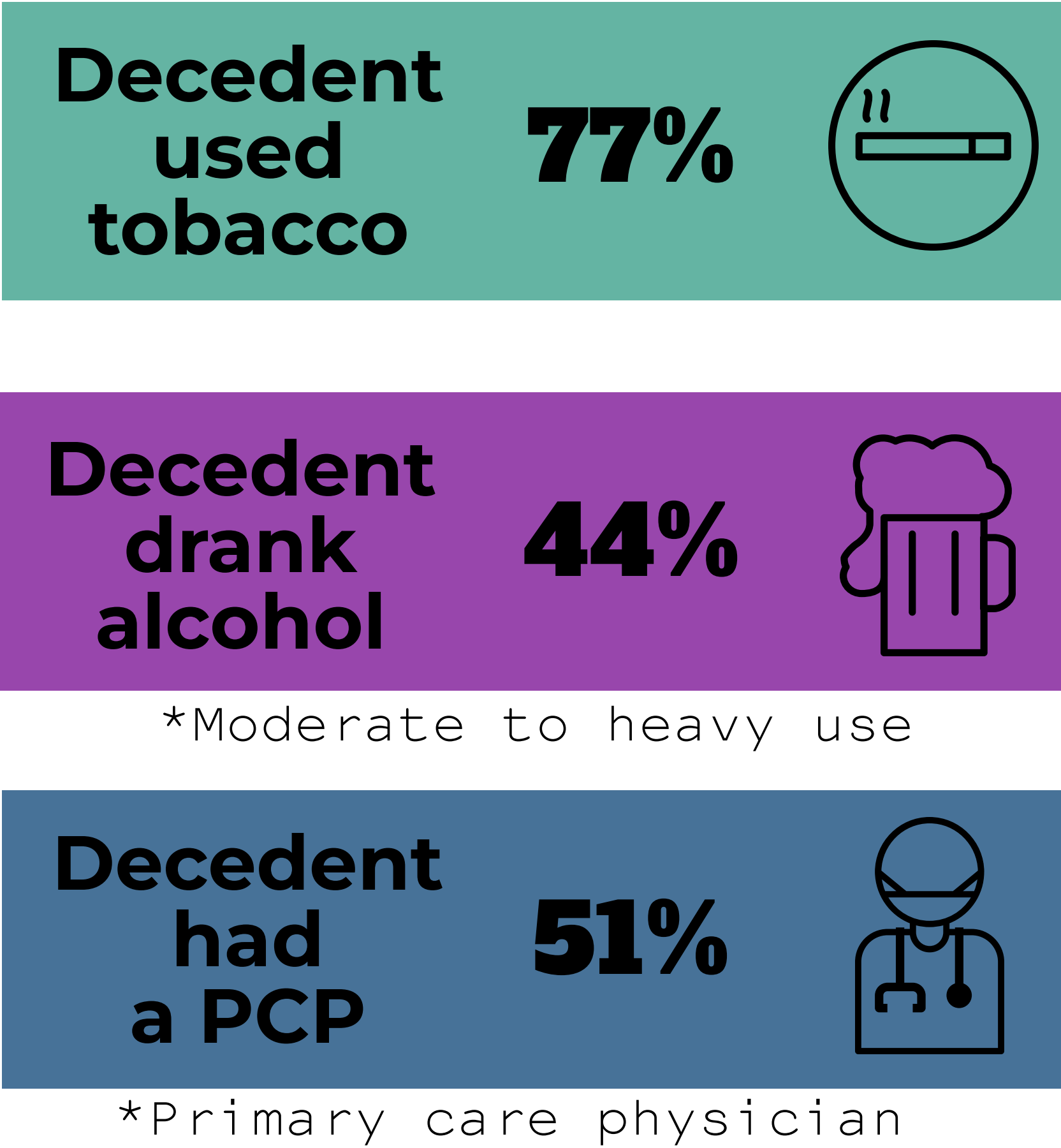
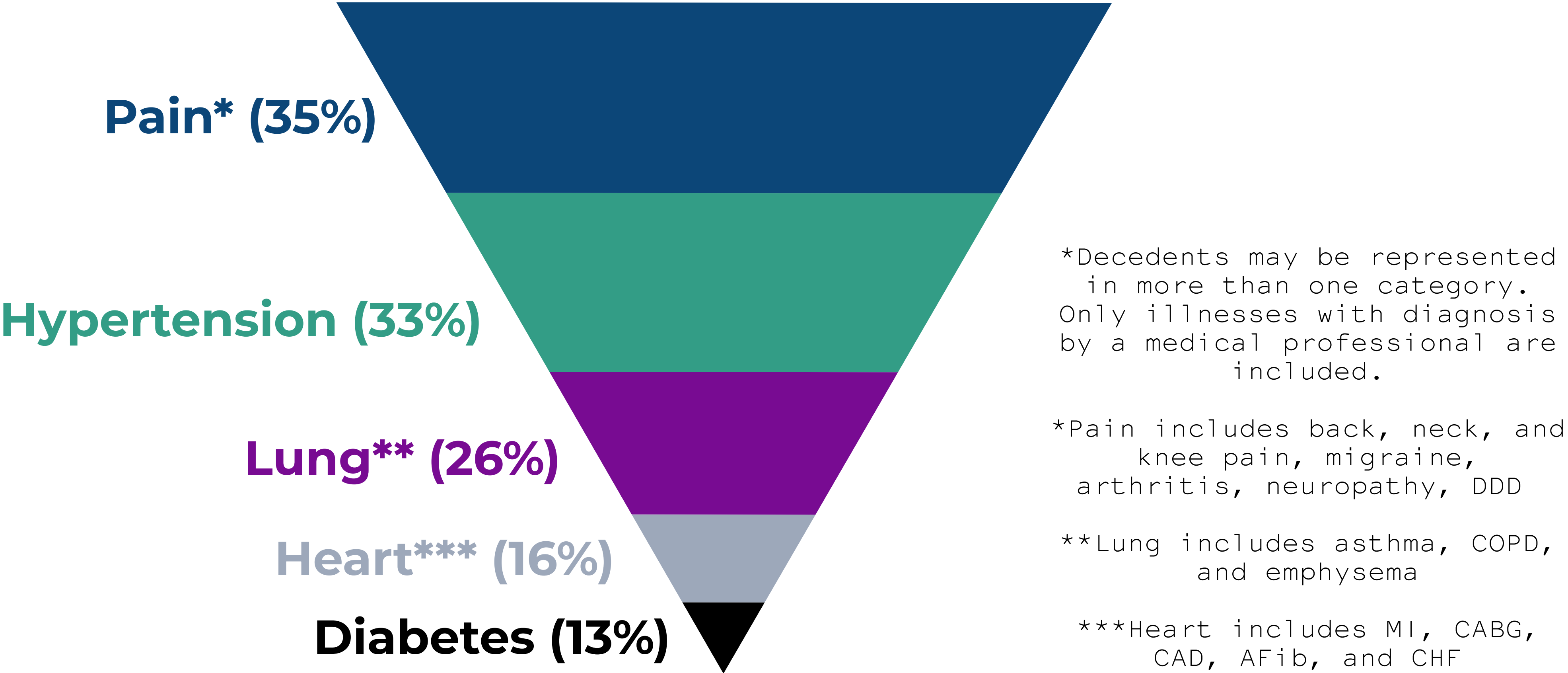
*Asian (n=3), Middle Eastern (n=2), White/American Indian (n=2), Black/Hispanic (n=1), American Indian/Hispanic (n=1)

Deaths Related to Opioids and Other Drugs

Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

Health Factors

MOST COMMON AILMENTS*

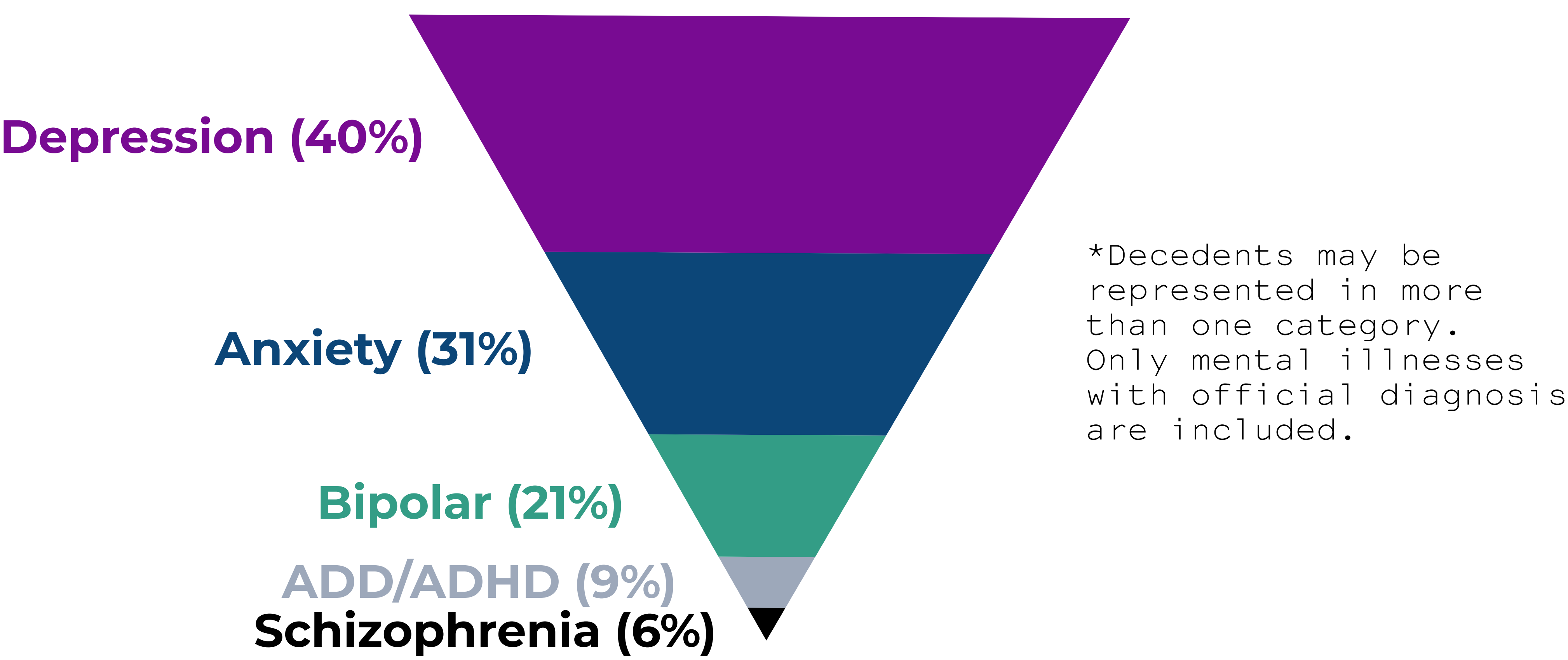


Deaths Related to Opioids and Other Drugs

Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

Mental Health Factors

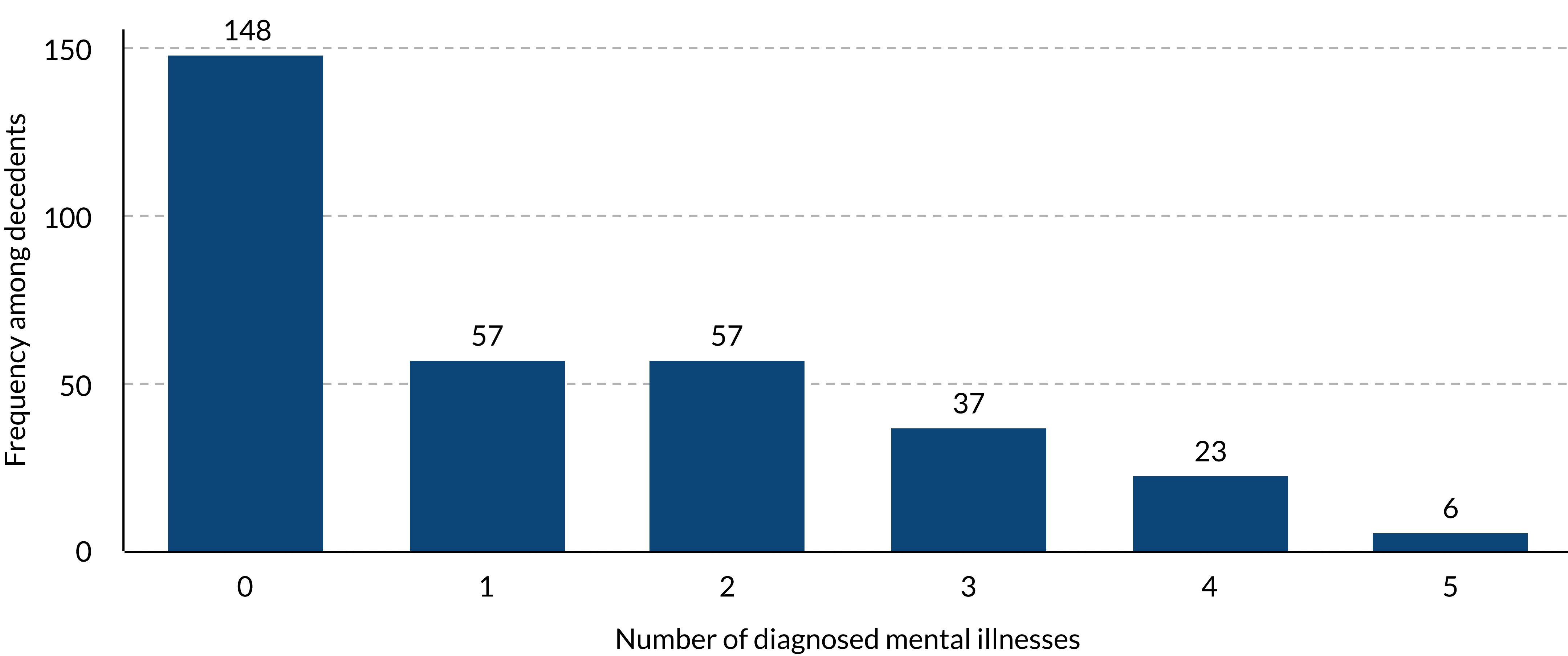
MOST COMMON MENTAL ILLNESSES



PERCENTAGE OF DECEDENTS



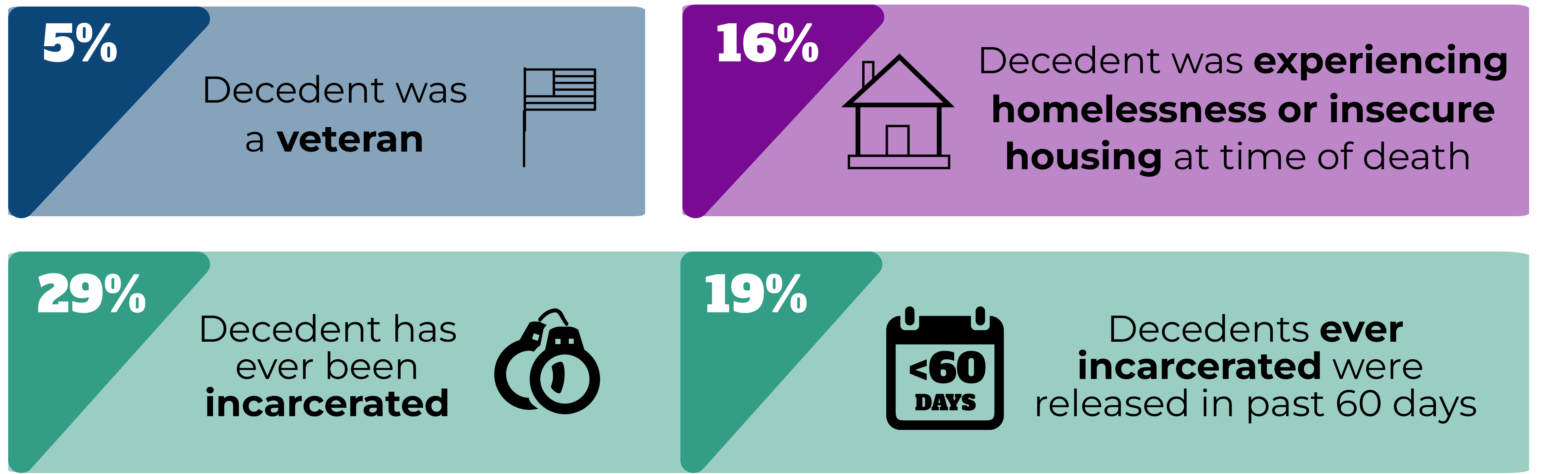
NUMBER OF DIAGNOSED MENTAL ILLNESSES AMONG DECEDENTS



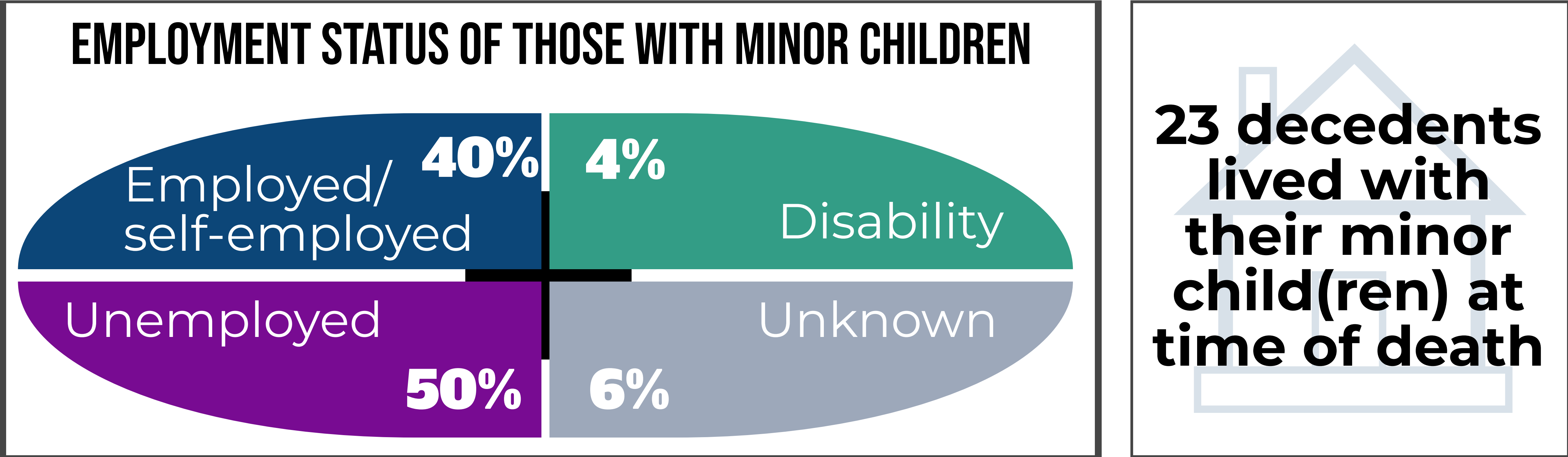
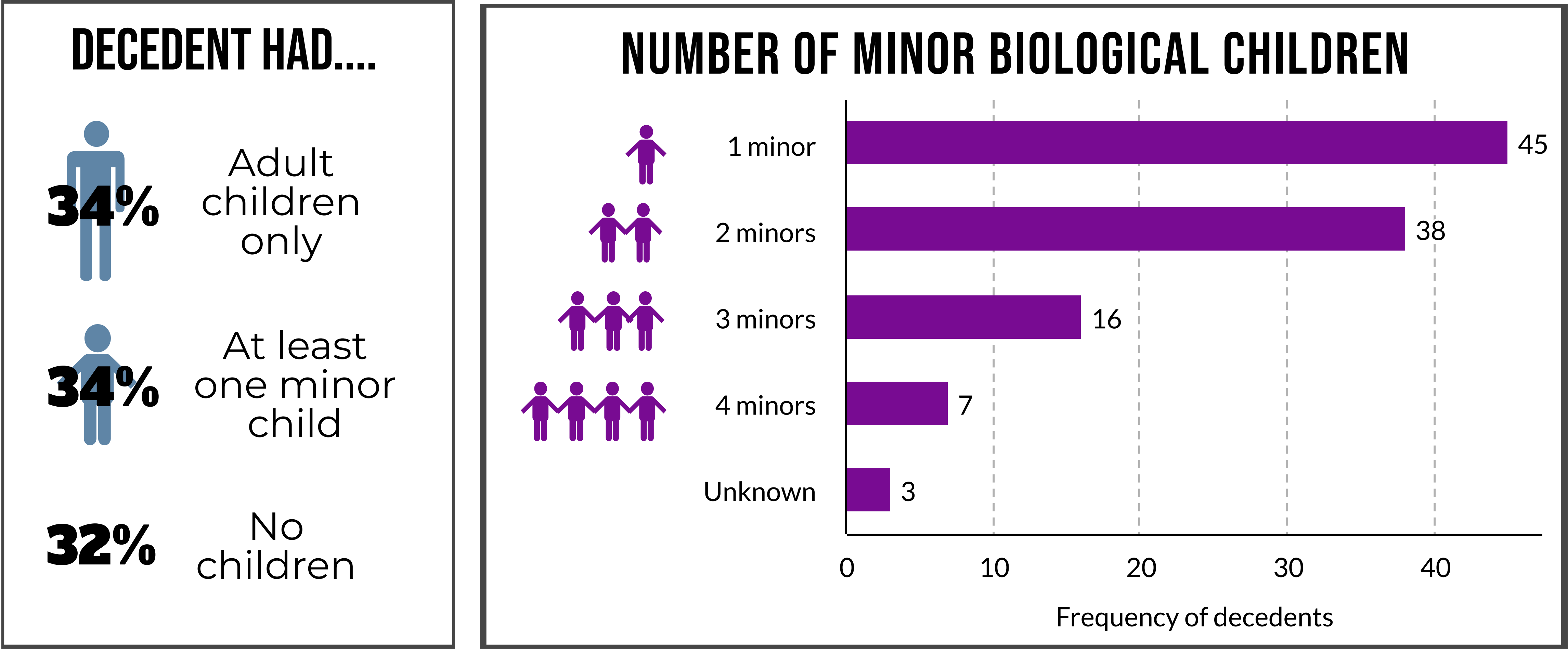
Deaths Related to Opioids and Other Drugs

Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

Social Factors



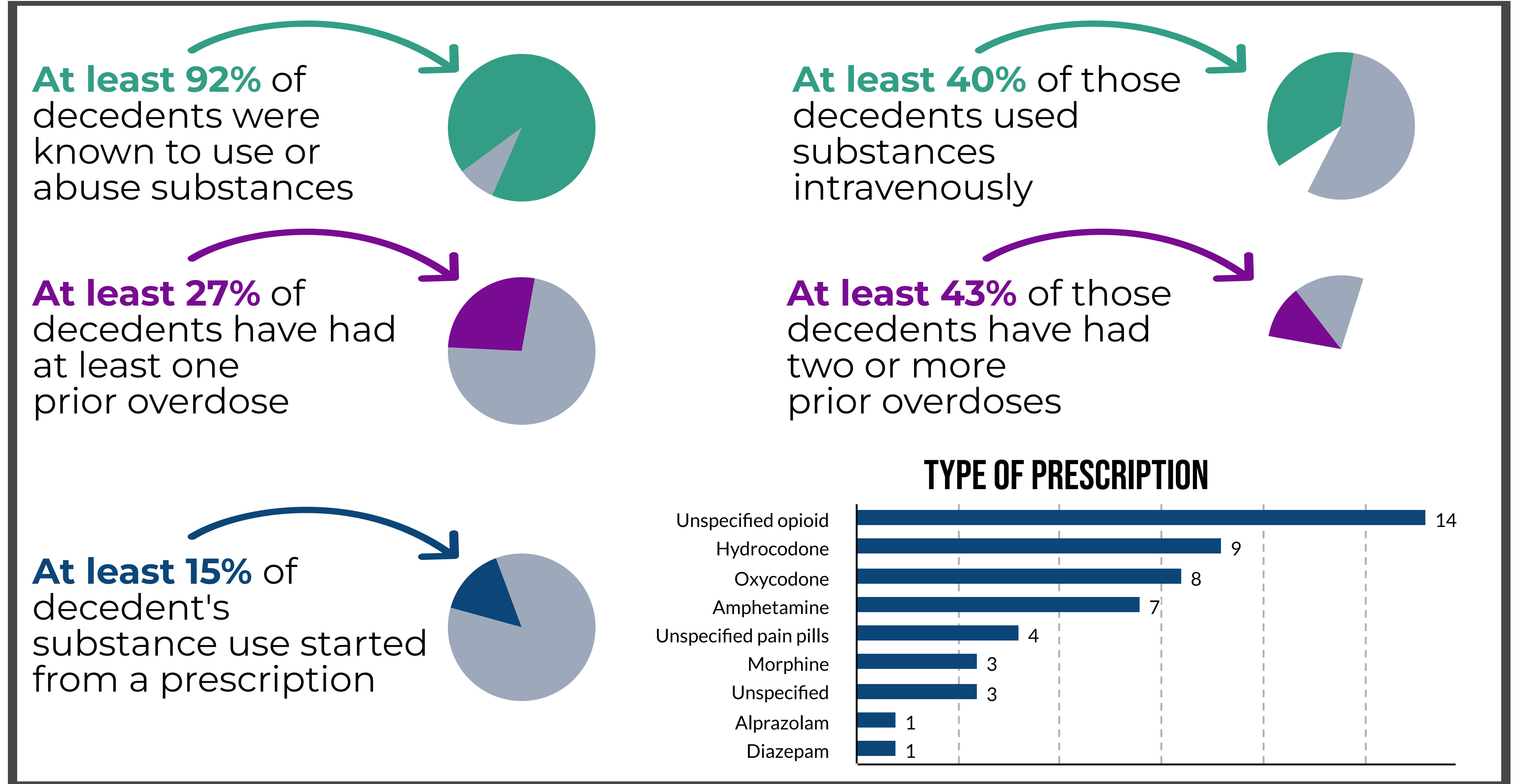
Children



Deaths Related to Opioids and Other Drugs

Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

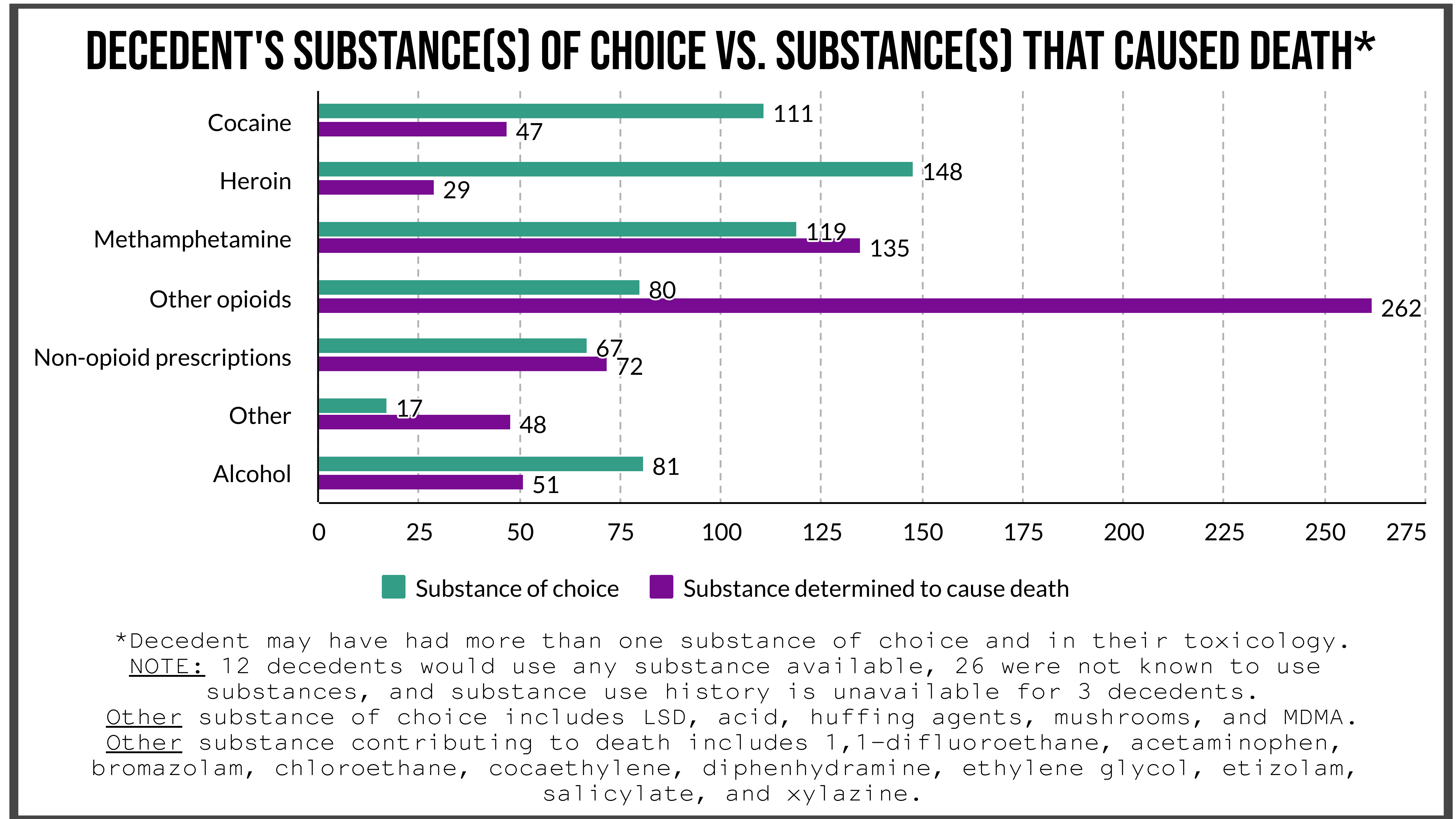
Substance Use History



At least 15% of decedent's substance use started from a prescription

TYPE OF PRESCRIPTION

Unspecified opioid	14
Hydrocodone	9
Oxycodone	8
Amphetamine	7
Unspecified pain pills	4
Morphine	3
Unspecified	3
Alprazolam	1
Diazepam	1



Deaths Related to Opioids and Other Drugs

Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

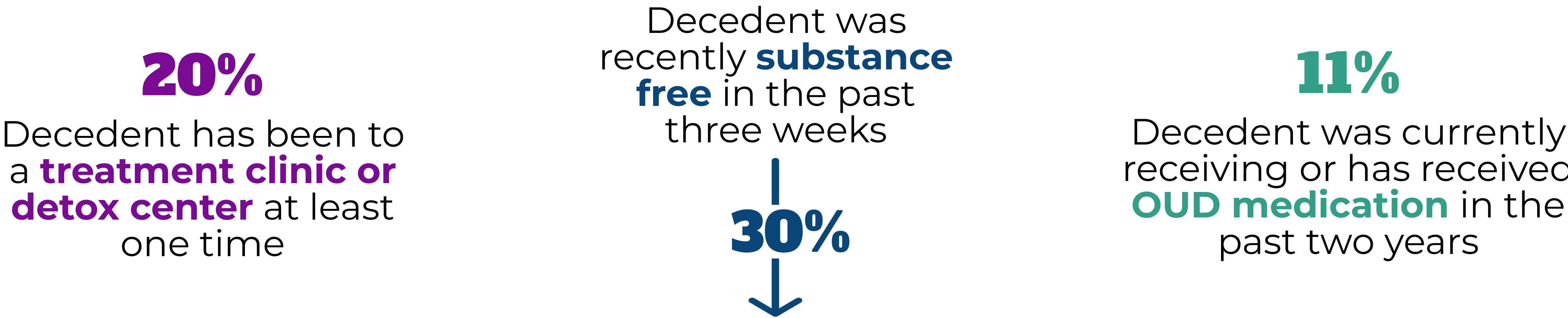
Substance Use History, cont.

PREFERRED METHOD OF ADMINISTRATION (N=299)*

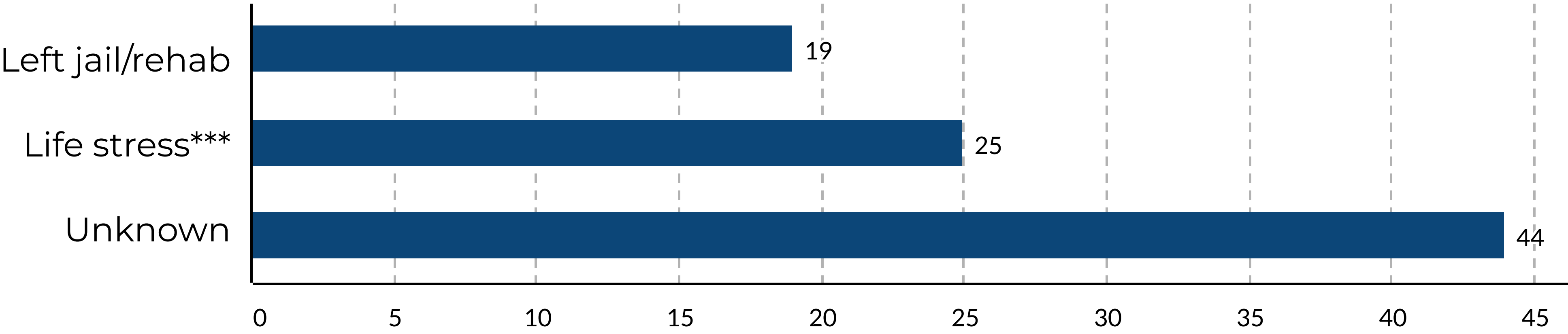
Method	Male (n=199)	Female (n=100)	White (n=226)	Black (n=55)	Hispanic (n=11)	Other** (n=7)	Total (n=299)
Intravenous	84	38	104	10	5	3	121
Snort	70	20	64	23	2	1	90
Smoke	58	26	63	16	1	4	84
Transdermal	0	1	1	0	0	0	1
Huff	3	1	4	0	0	0	4
Oral	37	30	56	9	2	0	67
Unknown	25	12	27	6	3	1	37

*Decedent may have had more than one preferred method of administration. Only includes decedents with a substance use history. **Other race includes Asian (n=2), Middle Eastern (n=2), White/American Indian (n=2), Black/Hispanic (n=1), American Indian/Hispanic (n=1).

RECOVERY HISTORY (N=299)*



SUSPECTED REASON FOR RELAPSE**



*ONLY Decedents known to use substances are included.

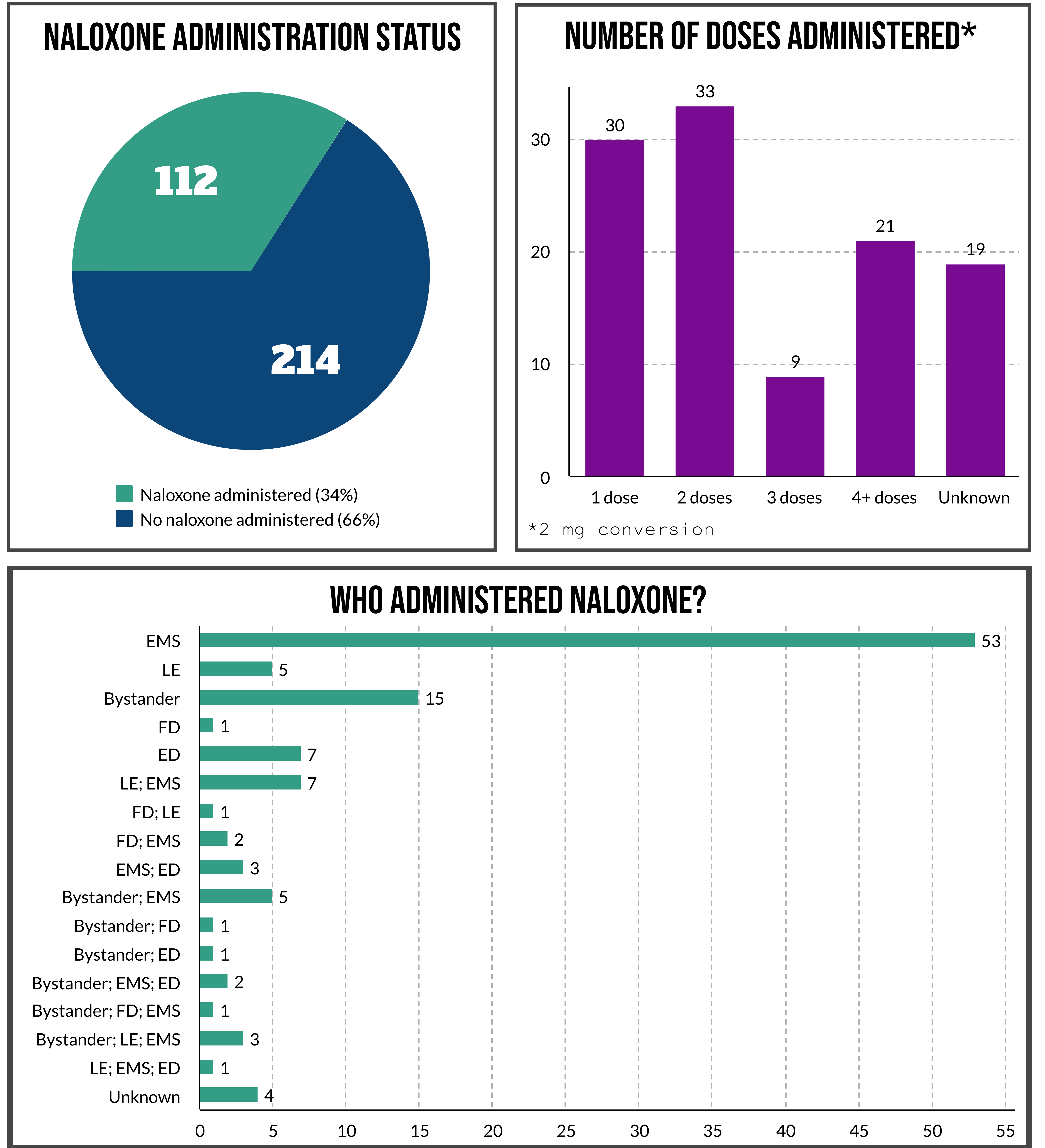
**These factors were mentioned by those close to the decedent for why they may have begun to use substances again after being substances free for at least three weeks.

***Life stress includes recent unemployment, death of loved on, loss of S/O, recent homelessness, social influences, and attempts to stop severe pain.

Deaths Related to Opioids and Other Drugs

Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

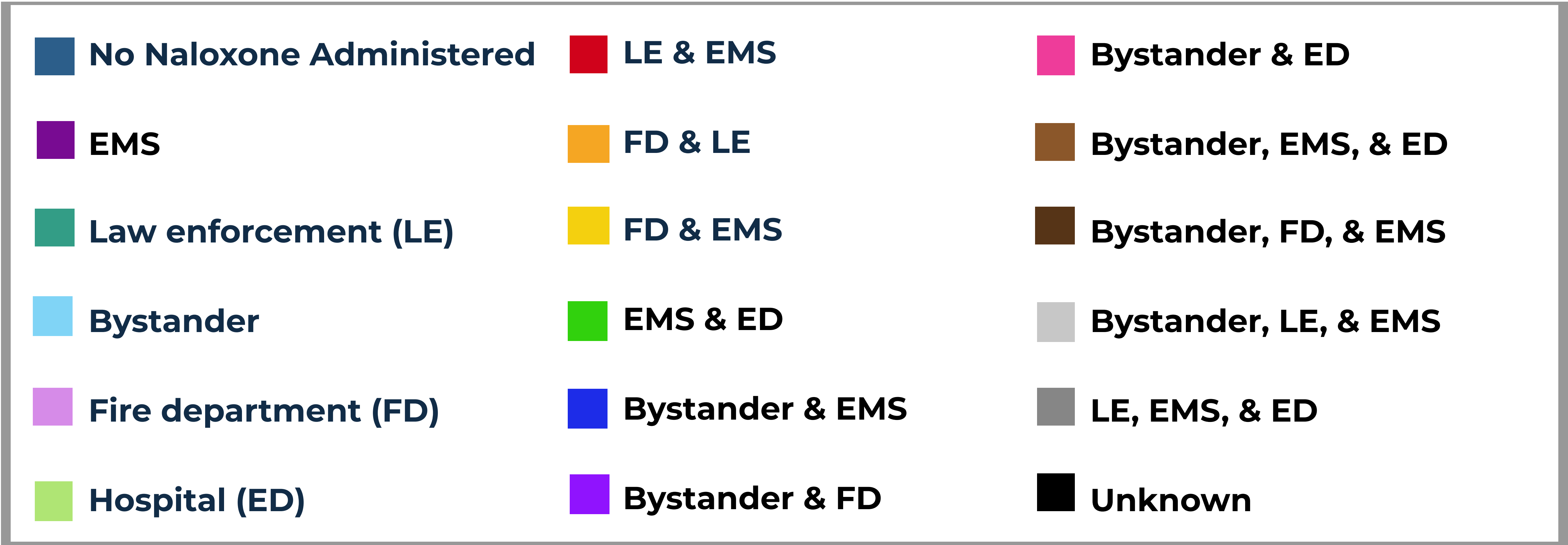
Naloxone Administration



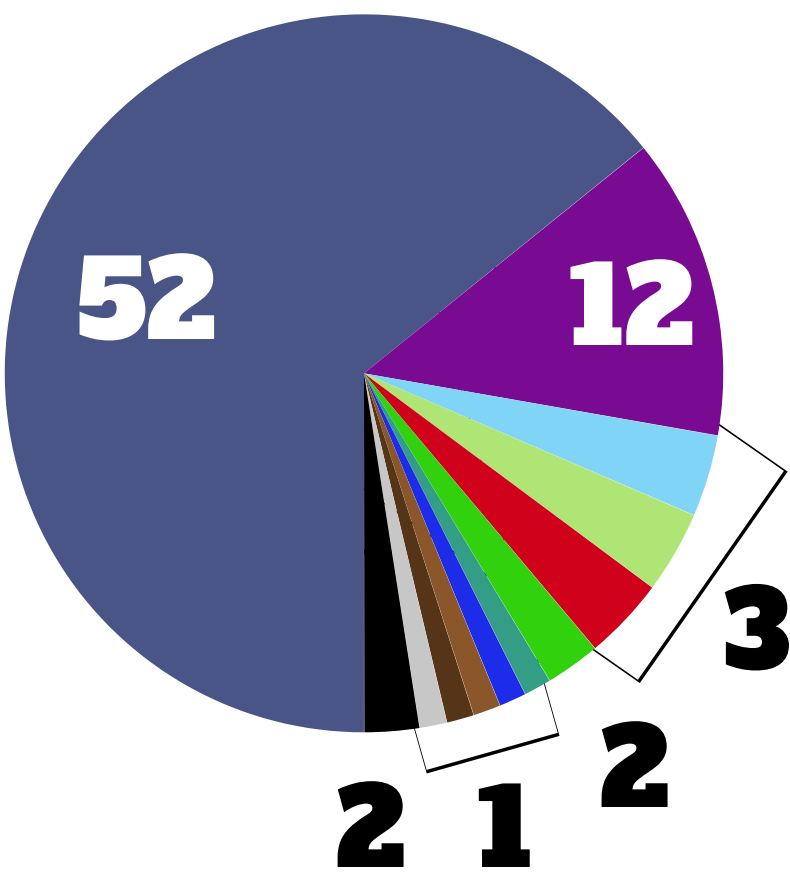
Deaths Related to Opioids and Other Drugs

Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

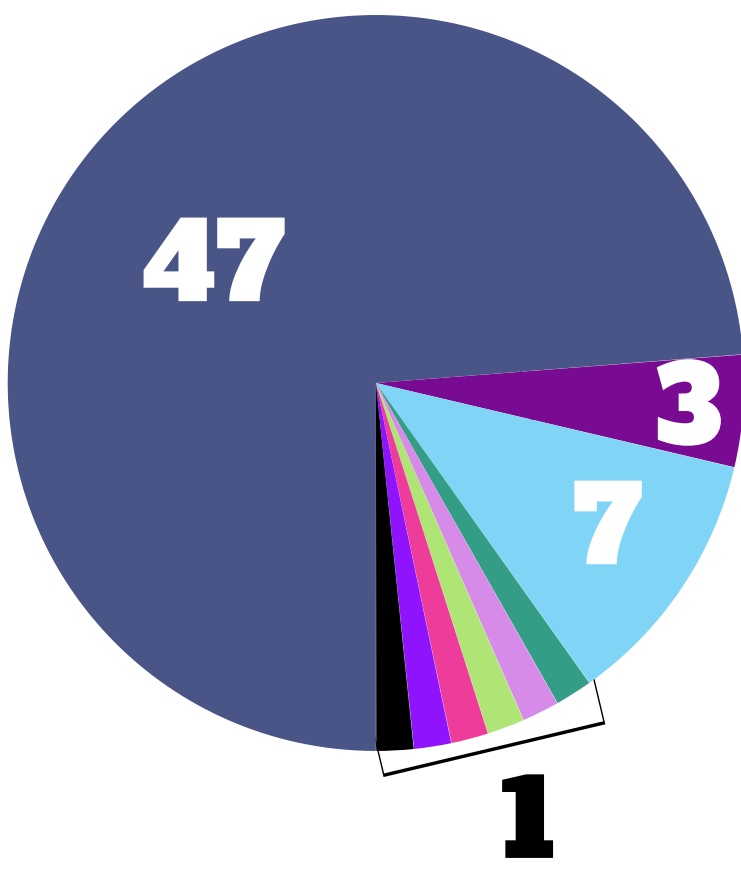
Naloxone Administration, cont.



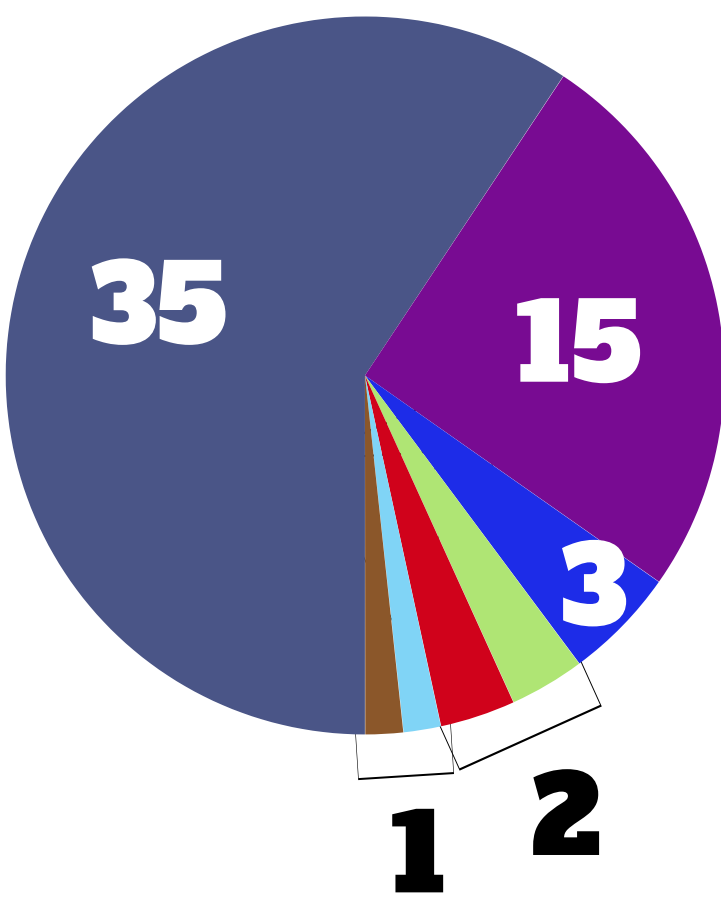
Kalamazoo (n=81)



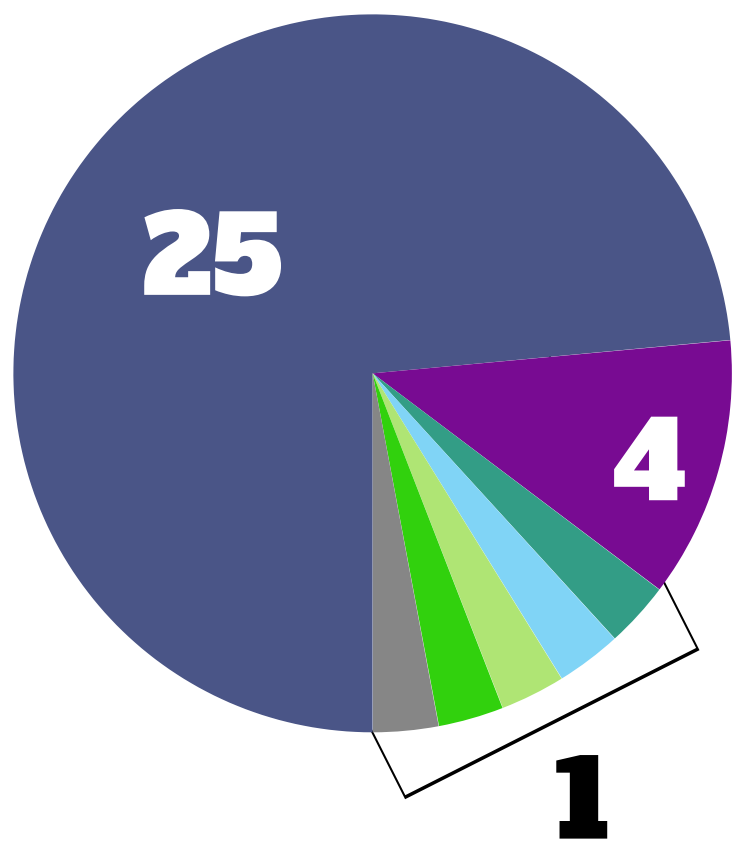
Muskegon (n=61)



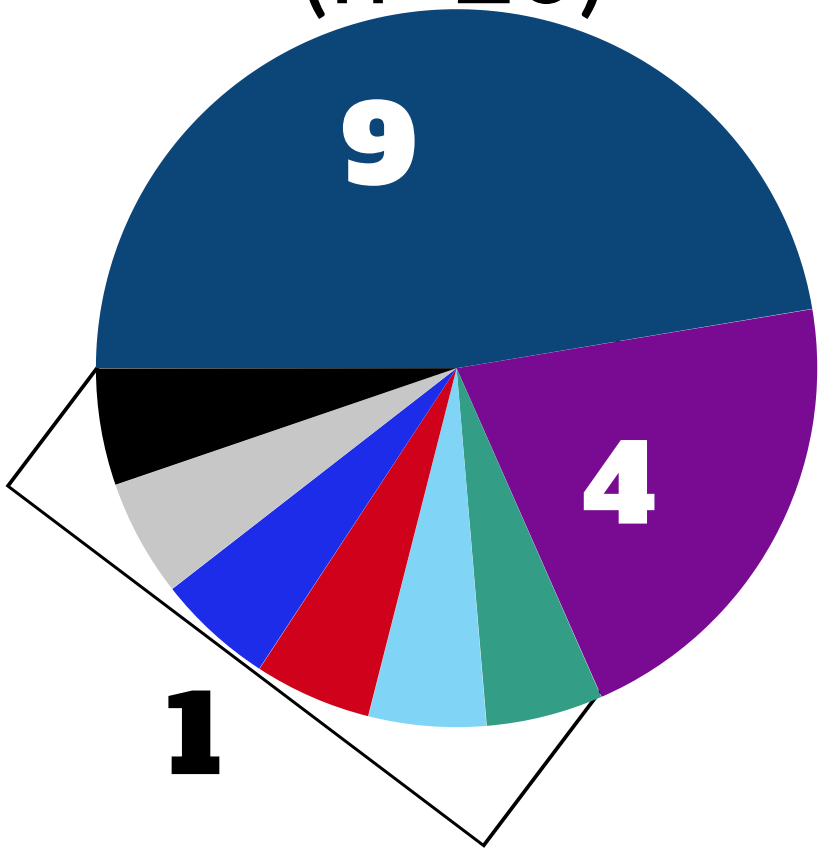
Calhoun (n=59)



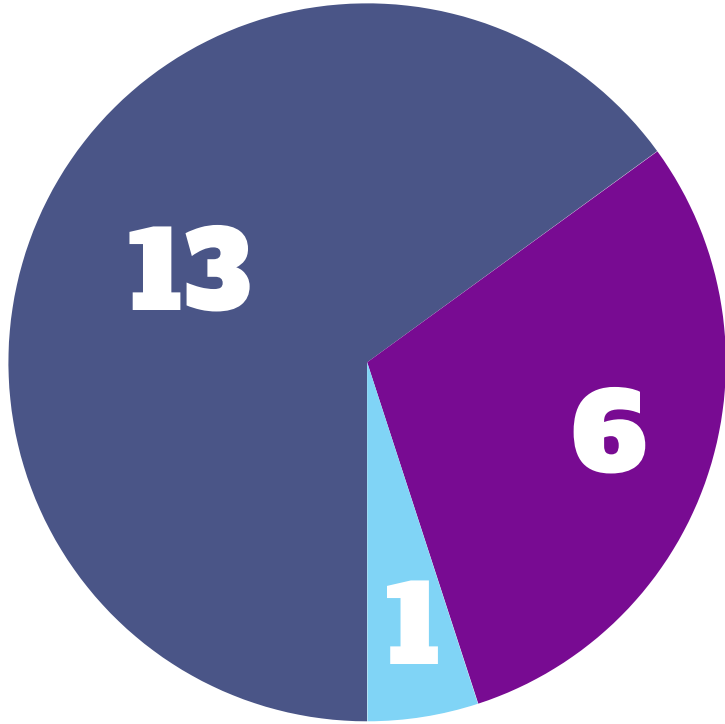
Berrien (n=34)



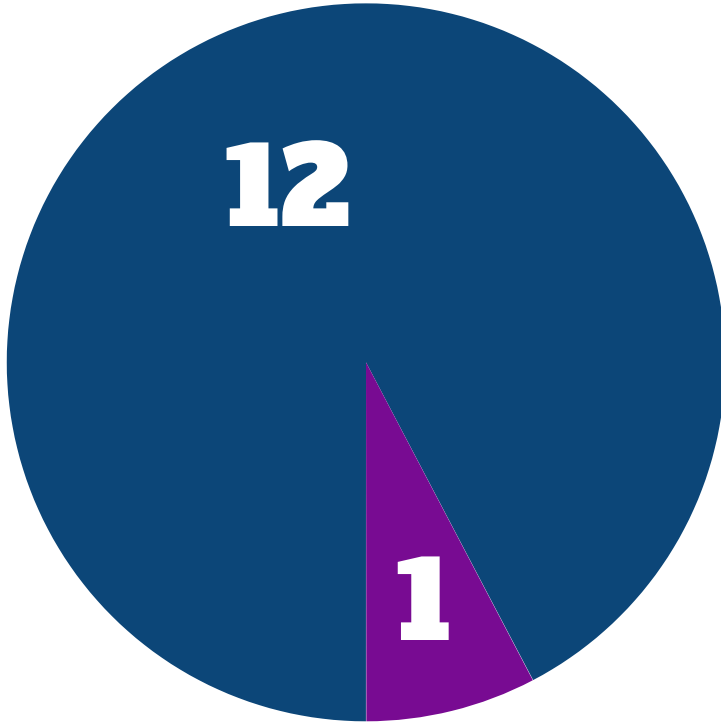
Grand Traverse (n=20)



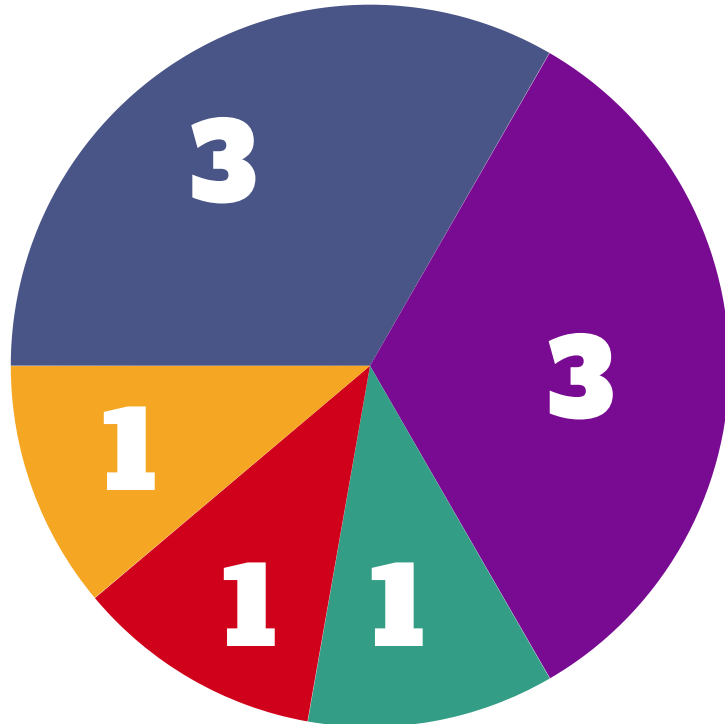
Van Buren (n=20)



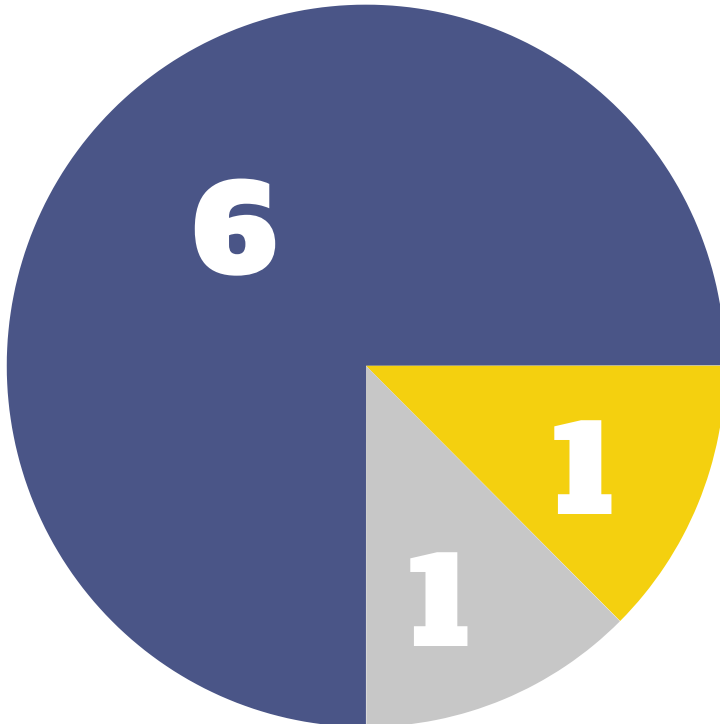
Allegan (n=13)



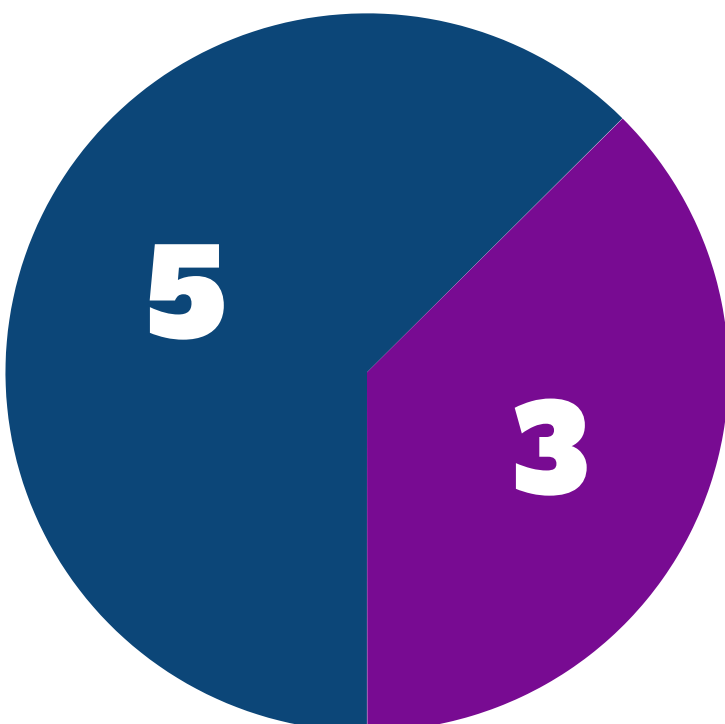
Cass (n=9)



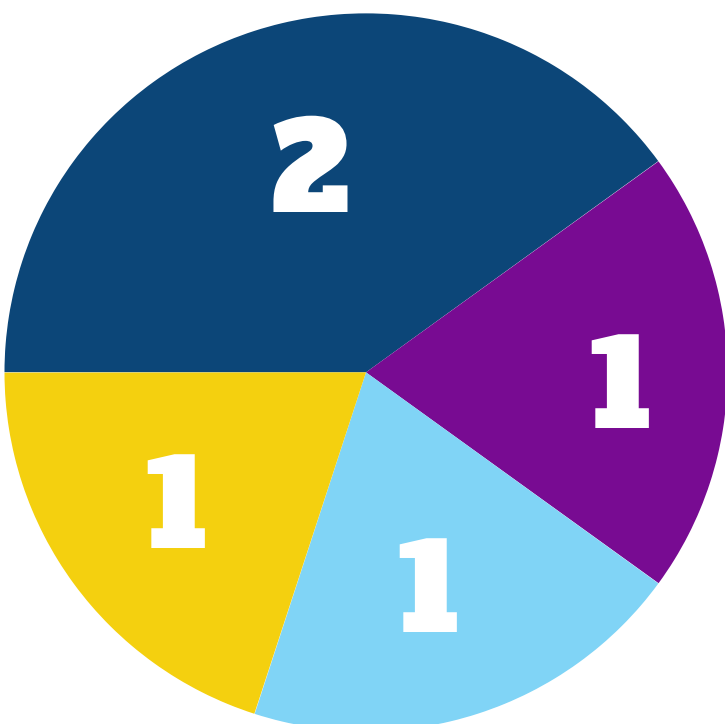
Mason (n=8)



St. Joseph (n=8)



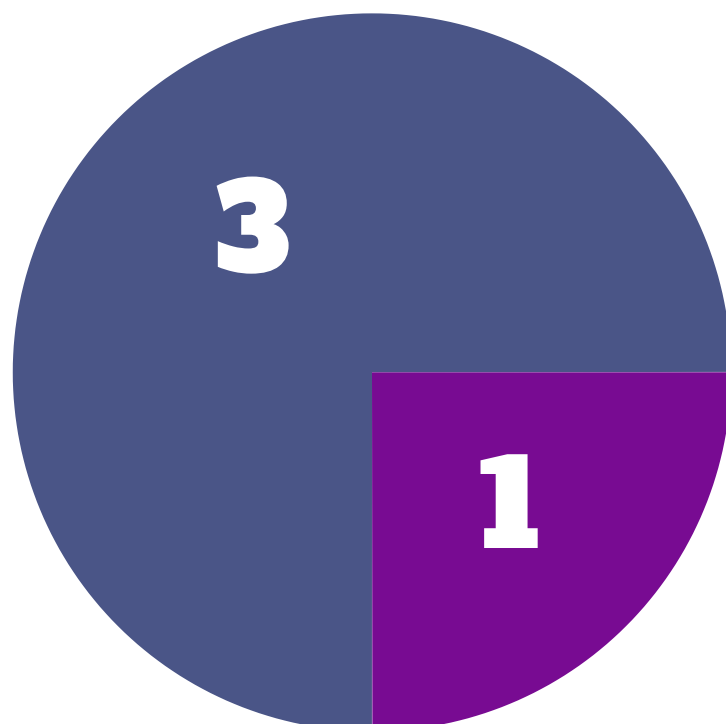
Osceola (n=5)



Barry (n=4)



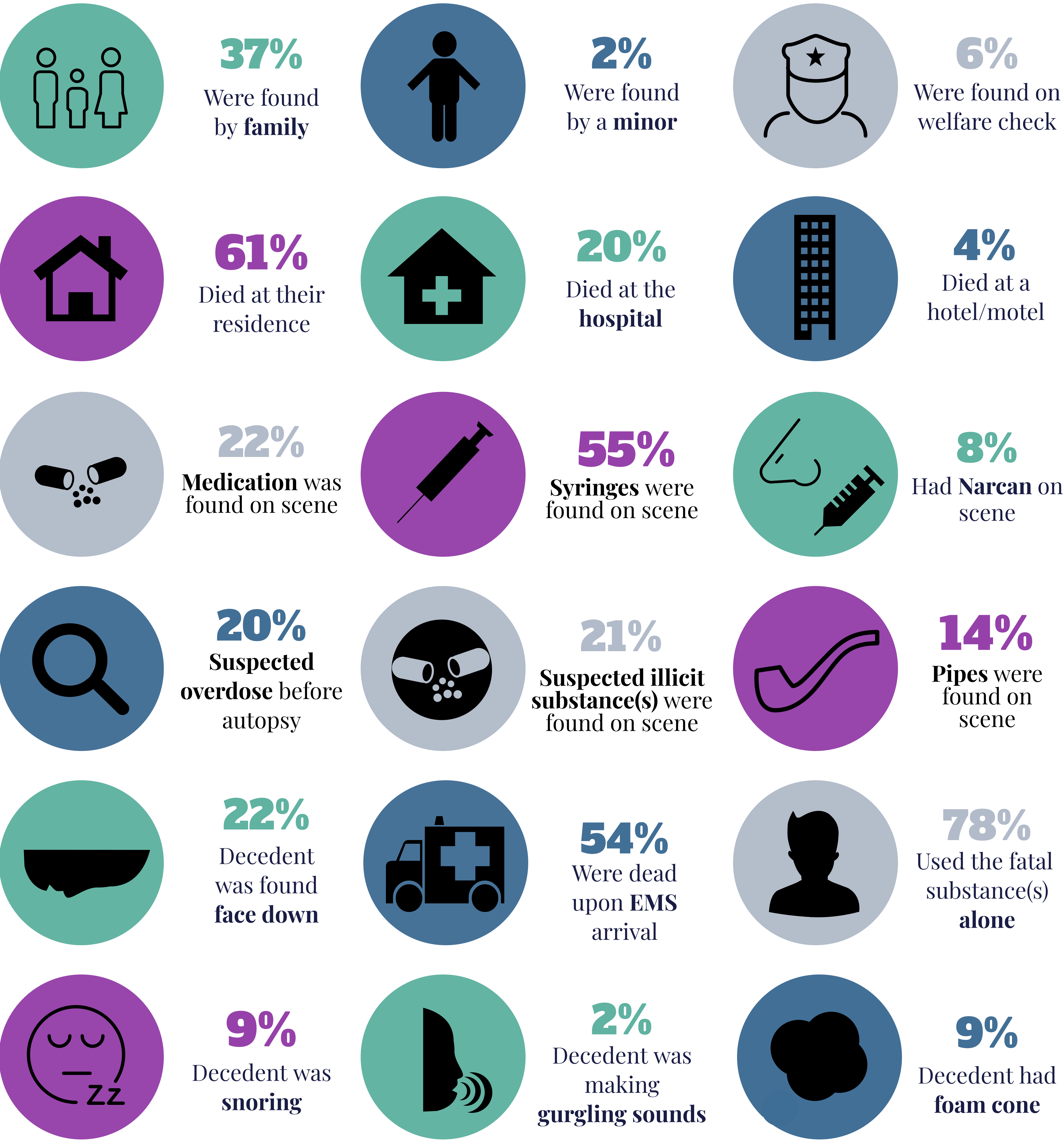
Leelanau (n=4)



Deaths Related to Opioids and Other Drugs

Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

Death Scene Findings

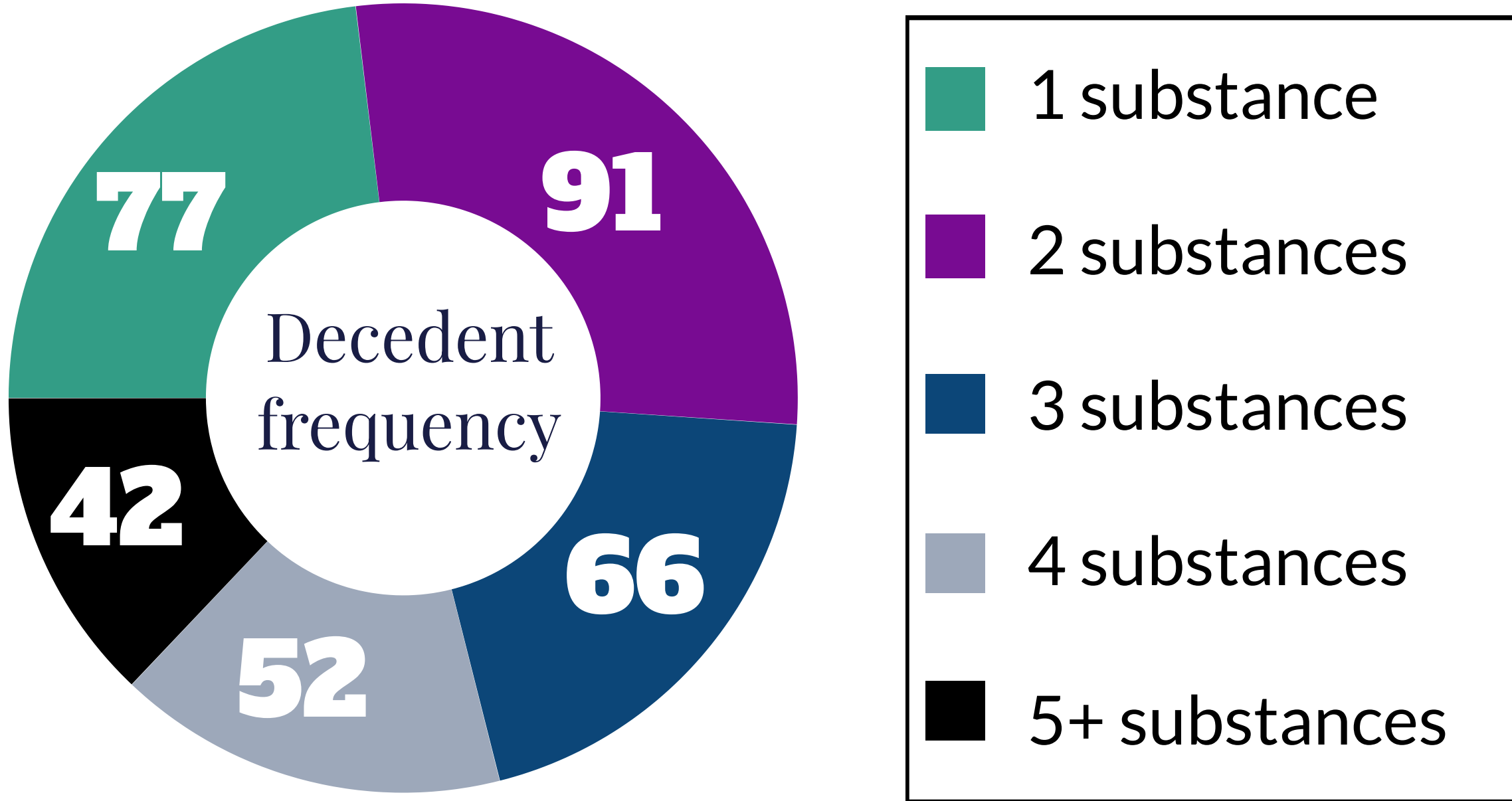


Deaths Related to Opioids and Other Drugs

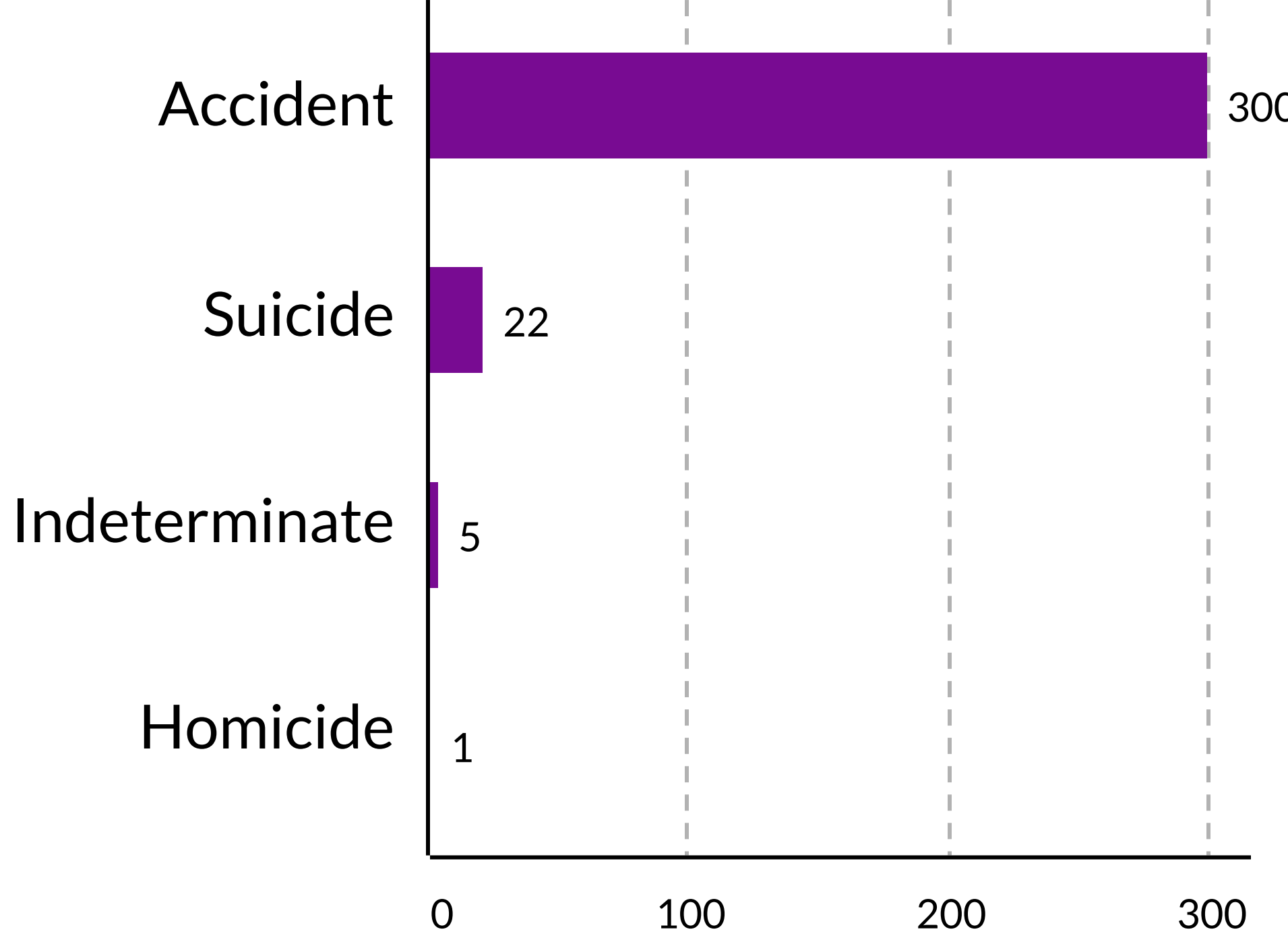
Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

Autopsy and Toxicology Results

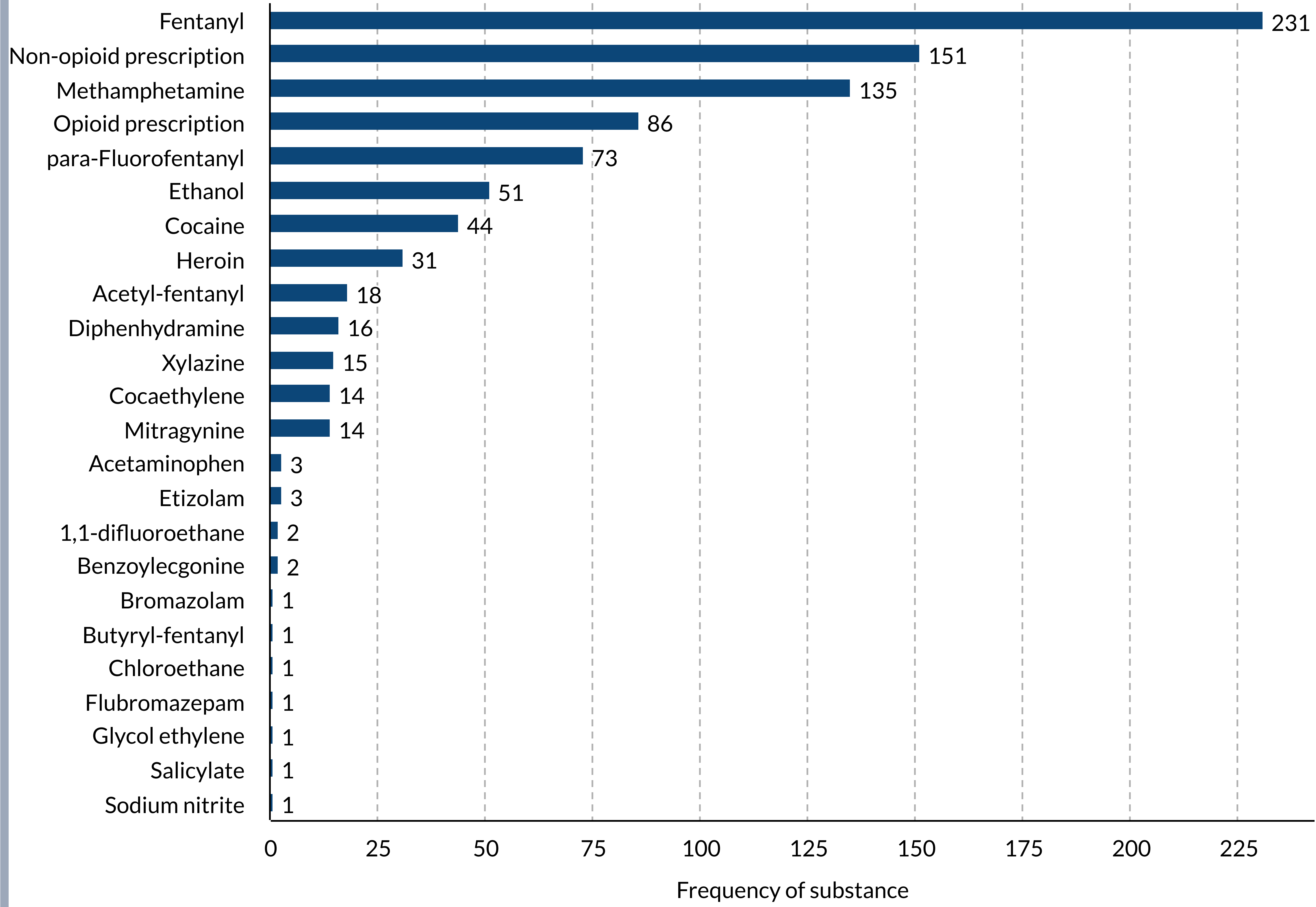
NUMBER OF SUBSTANCES
CONTRIBUTING TO DEATH



MANNER OF DEATH



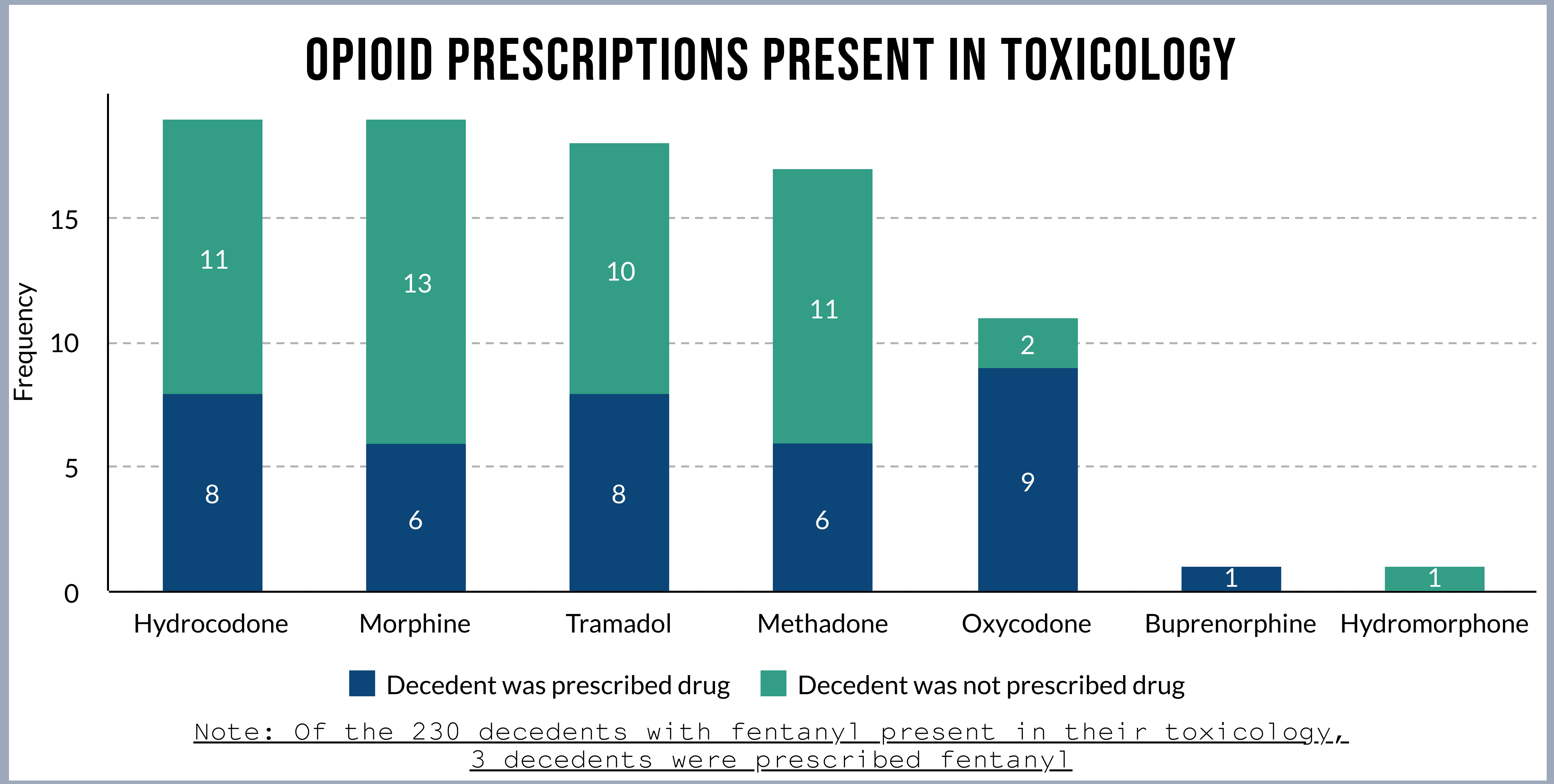
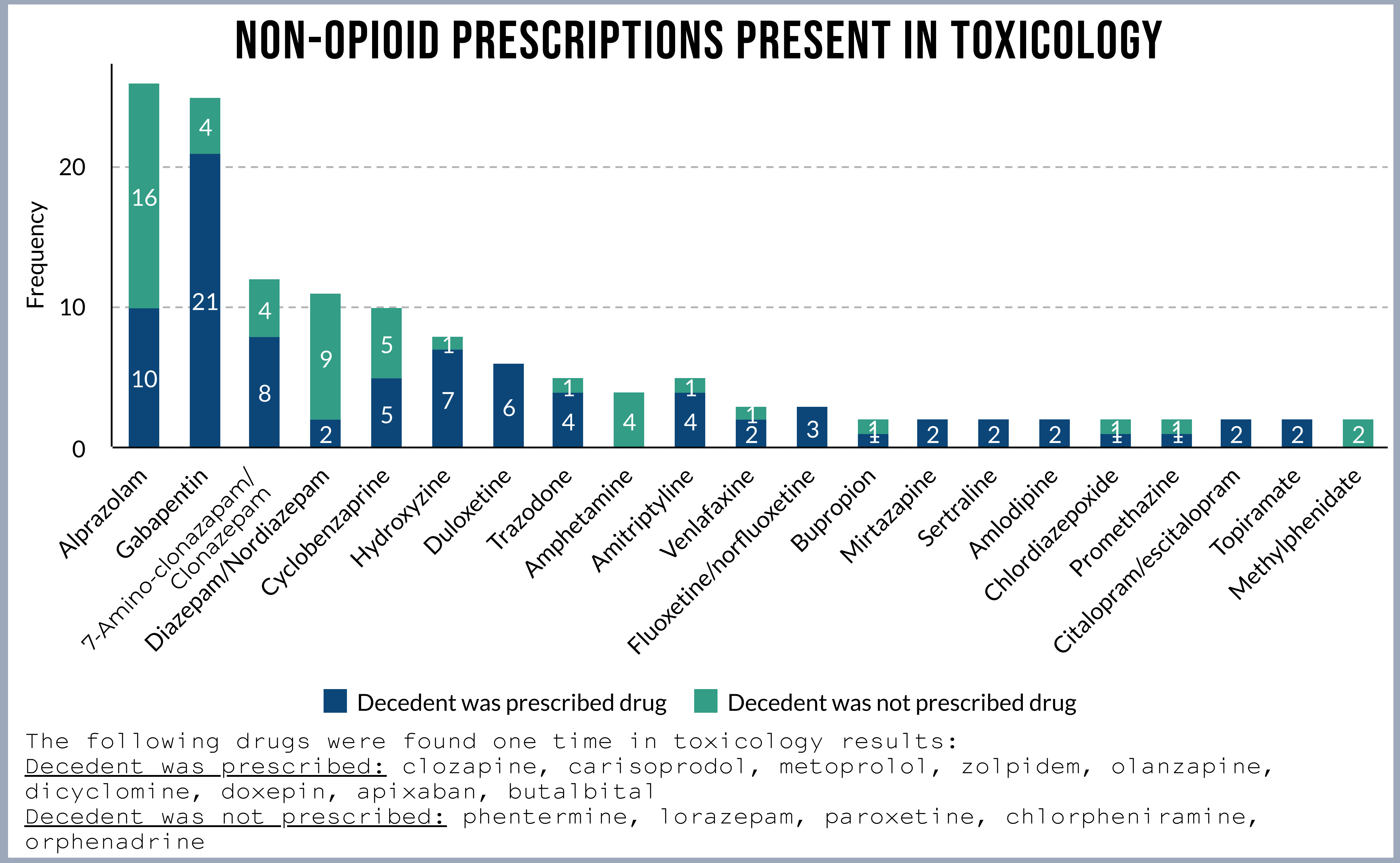
SUBSTANCES CONTRIBUTING TO DEATH



Deaths Related to Opioids and Other Drugs

Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

Autopsy and Toxicology Results, cont.



Deaths Related to Opioids and Other Drugs

Allegan, Barry, Berrien, Calhoun, Cass, Grand Traverse, Kalamazoo, Leelanau, Mason, Muskegon, Osceola, St. Joseph, & Van Buren County

Highlights

OPIOIDS AND POSITIONAL ASPHYXIA

26% (68 of 263) of decedents who died of an opioid were originally found in a potentially airway asphyxiating position

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

6% (4 of 65) of decedents who died of a non-opioid were originally found in a potentially airway asphyxiating 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.

DECEDENT'S HOUSING STATUS AND METHAMPHETAMINE USE

63% of decedents without stable housing had methamphetamine contribute to their overdose

37% of decedents with stable housing had methamphetamine contribute to their overdose

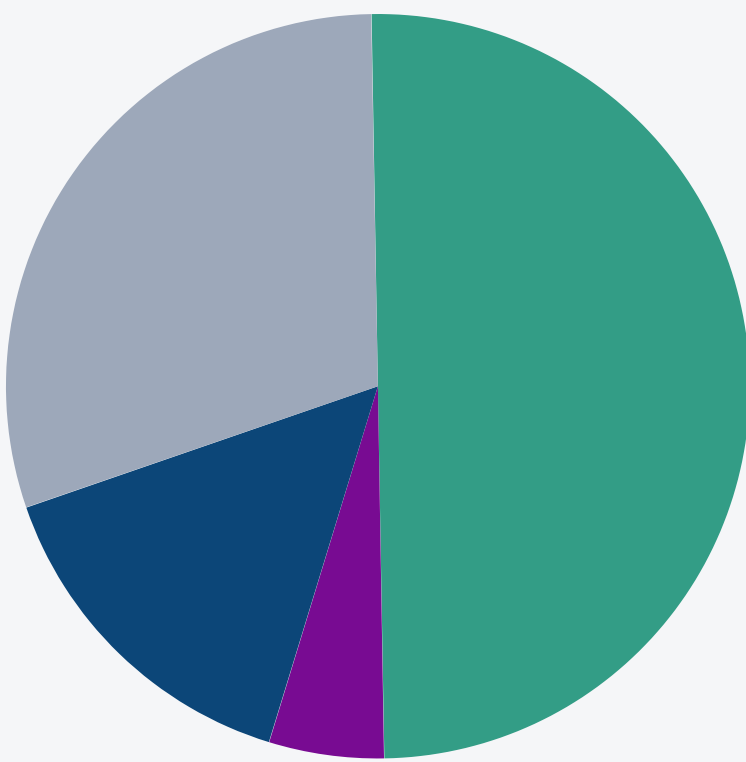
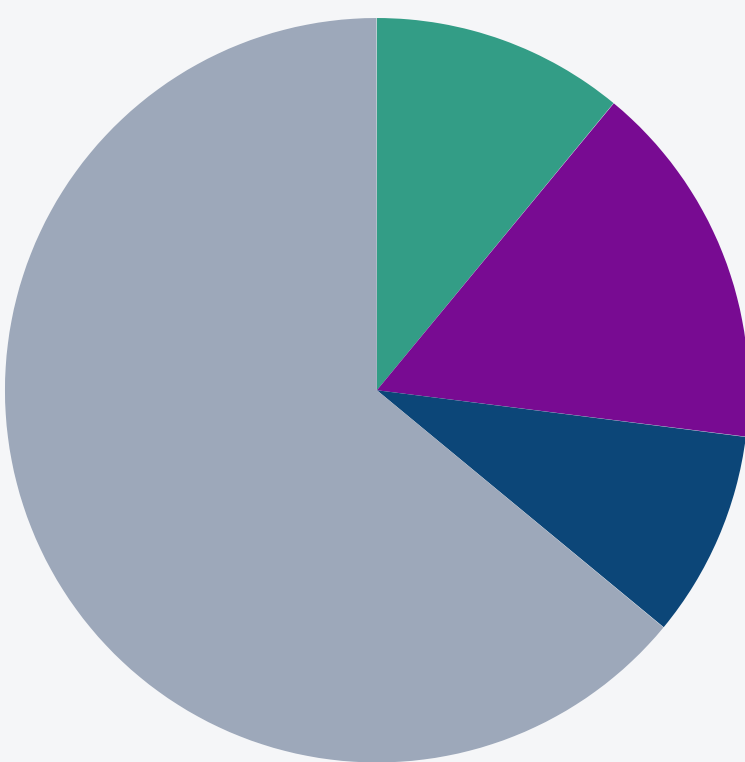
DECEDENT'S PRESCRIPTION STATUS AND MANNER OF DEATH

36% of decedents whose death was ruled an accident had prescription medication contributing to death

11% had prescriptions for those medications
16% did not have prescriptions for those medications
9% had prescriptions for some medications but not for others

70% of decedents whose death was ruled a suicide had prescription medication contributing to death

50% had prescriptions for those medications
5% did not have prescriptions for those medications
15% had prescriptions for some medications but not for others



SUBSTANCE OF CHOICE VS SUBSTANCE CONTRIBUTING TO DEATH BY RACE

