**Appendix 3. Alcohol-attributable fractions for each data point included in the meta-analysis by cause of fatal nontraffic injury**

# Air-space transport

**Study**

**BAC ≥ 0.10 g/dL Tested**

**AAF**

**95% CI**

**Type: Published studies**

Botch et al. 20091 Botch et al. 20082 Li et al. 19983 **Subtotal**

**Random effects model**

Heterogeneity: *I* 2 = 24%, *p* = 0.27

**Type: State data systems**

Virginia Utah **Subtotal**

**Random effects model**

Heterogeneity: *I* 2 = 0%, *p* = 1.00

1 139

8 215

0.01 [0.00; 0.04]

0.04 [0.02; 0.07]

0.04 [0.01; 0.10]

**0.03 [0.02; 0.05]**

**0.03 [0.02; 0.05]**

0.00 [0.00; 0.20]

0.00 [0.00; 0.25]

**0.00 [0.00; 1.00]**

**0.00 [0.00; 1.00]**

**0.03 [0.02; 0.05]**

**0.03 [0.01; 0.05]**

4 101

**455**

0 17

0 13

**30**

**Total**

**Random effects model**

Heterogeneity: *I* 2 = 0%, *p* = 0.62

**485**

0

0.05 0.1 0.15 0.2

## Aspiration

**Study**

**BAC ≥ 0.10 g/dL Tested**

**AAF**

**95% CI**

**Type: Published studies**

Boghossian et al. 20104 (Canada)

2\* 11

0.18

[0.02; 0.52]

**Subtotal 11**

**Random effects model**

Heterogeneity: not applicable

**0.18 [0.05; 0.51]**

**0.18 [0.05; 0.51]**

**Type: State data systems**

Virginia Utah

North Carolina

4 50

5 26

15 21

0.08

0.19

0.71

[0.02; 0.19]

[0.07; 0.39]

[0.48; 0.89]

**Subtotal 97**

**Random effects model**

Heterogeneity: *I* 2 = 92%, *p* < 0.01

**0.25 [0.17; 0.34]**

**0.27 [0.06; 0.66]**

**Total**

**Random effects model**

Heterogeneity: *I* 2 = 88%, *p* < 0.01

**108**

0.2 0.4

0.6 0.8

**0.24 [0.17; 0.33]**

**0.24 [0.08; 0.54]**

\* Alcohol intoxication was reported to be a factor associated with the fatal injuries.

Child maltreatment

**Study**

**BAC ≥ 0.10 g/dL Tested**

**AAF**

**95% CI**

**Type: Published studies** Colorado CFPS 20215 Parks et al. 20116

South Carolina SCFAC 20197

41\*

25\*

15\*

452

260

145

0.09

0.10

0.10

[0.07; 0.12]

[0.06; 0.14]

[0.06; 0.16]

**Subtotal**

**Random effects model**

Heterogeneity: *I* 2 = 0%, *p* = 0.90

**857**

**0.09 [0.08; 0.12]**

**0.09 [0.08; 0.12]**

**Total**

**Random effects model**

Heterogeneity: *I* 2 = 0%, *p* = 0.90

**857**

0.06 0.08

0.1 0.12 0.14 0.16

**0.09 [0.08; 0.12]**

**0.09 [0.08; 0.12]**

\* Caregivers were reported to be alcohol-intoxicated or alcohol-impaired.

##

## Drowning

**Study**

**BAC ≥ 0.10 g/dL Tested**

**AAF**

**95% CI**

**Type: Published studies**

Okuda et al. 20158 Cummings & Quan 19999 Browne et al. 200310

Canadian Red Cross Society 200611

Lincoln et al. 199612

8

91

58

583

94

57

304

178

1500

186

0.14

0.30

0.33

0.39

0.51

[0.06; 0.26]

[0.25; 0.35]

[0.26; 0.40]

[0.36; 0.41]

[0.43; 0.58]

**Subtotal**

**Random effects model**

Heterogeneity: *I* 2 = 89%, *p* < 0.01

**2225**

**0.37 [0.35; 0.40]**

**0.33 [0.24; 0.44]**

**Type: State data systems**

Utah Virginia Minnesota

North Carolina

11

83

49

131

130

346

136

230

0.08

0.24

0.36

0.57

[0.04; 0.15]

[0.20; 0.29]

[0.28; 0.45]

[0.50; 0.63]

**Subtotal**

**Random effects model**

Heterogeneity: *I* 2 = 97%, *p* < 0.01

**842**

**0.33 [0.29; 0.36]**

**0.28 [0.13; 0.50]**

**Total**

**Random effects model**

Heterogeneity: *I* 2 = 94%, *p* < 0.01

**3067**

0.1

0.2 0.3 0.4 0.5 0.6

**0.36 [0.34; 0.38]**

**0.31 [0.21; 0.42]**

# Fall injuries

**Study**

**BAC ≥ 0.10 g/dL Tested**

**AAF**

**95% CI**

**Type: State data systems**

Virginia

North Carolina

89

116

760

159

0.12

0.73

[0.10; 0.14]

[0.65; 0.80]

**Subtotal**

**Random effects model**

Heterogeneity: *I* 2 = 100%, *p* < 0.01

**919**

**0.22 [0.20; 0.25]**

**0.37 [0.07; 0.83]**

**Total**

**Random effects model**

Heterogeneity: *I* 2 = 100%, *p* < 0.01

**919**

0.1 0.2 0.3 0.4 0.5 0.6 0.7

**0.22 [0.20; 0.25]**

**0.37 [0.07; 0.83]**

#

# Fire injuries

**Study**

**BAC ≥ 0.10 g/dL Tested**

**AAF**

**95% CI**

**Type: Published studies** Levine et al. 200113 Tridata Corporation 199914

U.S. Fire Administration 200315 McGwin et al. 200016

Marshall et al. 199817

45

67

113

114

69

196

255

374

247

130

0.23

0.26

0.30

0.46

0.53

[0.17; 0.29]

[0.21; 0.32]

[0.26; 0.35]

[0.40; 0.53]

[0.44; 0.62]

**Subtotal**

**Random effects model**

Heterogeneity: *I* 2 = 93%, *p* < 0.01

**1202**

**0.34 [0.31; 0.37]**

**0.35 [0.25; 0.46]**

**Type: State data systems**

Utah Virginia

North Carolina

5 40

51 338

80 100

0.12

0.15

0.80

[0.04; 0.27]

[0.11; 0.19]

[0.71; 0.87]

**Subtotal**

**Random effects model**

Heterogeneity: *I* 2 = 98%, *p* < 0.01

**478**

**0.28 [0.25; 0.33]**

**0.32 [0.07; 0.73]**

**Total**

**Random effects model**

Heterogeneity: *I* 2 = 96%, *p* < 0.01

**1680**

0.2

0.4 0.6 0.8

**0.32 [0.30; 0.35]**

**0.34 [0.20; 0.51]**

#

# Firearm injuries

**Study**

**BAC ≥ 0.10 g/dL Tested**

**AAF**

**95% CI**

**Type: Published studies** Cherry et al. 200118 Collins 201019

Shields et al. 200820

55 351

2 7

10 20

0.16

0.29

0.50

[0.12; 0.20]

[0.04; 0.71]

[0.27; 0.73]

**Subtotal**

**Random effects model**

Heterogeneity: *I* 2 = 85%, *p* < 0.01

**378**

**0.18 [0.14; 0.22]**

**0.27 [0.13; 0.49]**

**Type: State data systems**

Minnesota Virginia Colorado Utah

North Carolina

1 17

7 67

10 42

9 30

11 19

0.06

0.10

0.24

0.30

0.58

[0.00; 0.29]

[0.04; 0.20]

[0.12; 0.39]

[0.15; 0.49]

[0.33; 0.80]

**Subtotal**

**Random effects model**

Heterogeneity: *I* 2 = 79%, *p* < 0.01

**175**

**0.22 [0.16; 0.28]**

**0.22 [0.11; 0.41]**

**Total**

**Random effects model**

Heterogeneity: *I* 2 = 80%, *p* < 0.01

**553**

0.2

0.4 0.6

**0.19 [0.16; 0.22]**

**0.24 [0.14; 0.38]**

# Homicide

**Study**

**BAC ≥ 0.10 g/dL Tested**

**AAF**

**95% CI**

**Type: Published studies**

Spunt et al. 199821 Spunt et al. 199522 Banks et al. 200823 Greenfeld 199824

41\*

86\*

12

65

181

269

37

173

0.23

0.32

0.32

0.38

[0.17; 0.29]

[0.26; 0.38]

[0.18; 0.50]

[0.30; 0.45]

**Subtotal**

**Random effects model**

Heterogeneity: *I* 2 = 68%, *p* = 0.02

**660**

**0.31 [0.27; 0.35]**

**0.31 [0.25; 0.37]**

**Type: State data systems**

Utah

6 39

0.15

[0.06; 0.31]

**Subtotal 39**

**Random effects model**

Heterogeneity: not applicable

**0.15 [0.07; 0.30]**

**0.15 [0.07; 0.30]**

**Total**

**Random effects model**

Heterogeneity: *I* 2 = 70%, *p* < 0.01

**699**

0.1 0.2 0.3 0.4

**0.30 [0.27; 0.34]**

**0.29 [0.23; 0.36]**

\* Homicide offenders reported to be drunk or alcohol-intoxicated.

# Hypothermia

**Study**

**BAC ≥ 0.10 g/dL Tested**

**AAF**

**95% CI**

**Type: Published studies**

Koutsavlis et al. 200325 (Canada)

3\* 12

0.25

[0.05; 0.57]

**Subtotal 12**

**Random effects model**

Heterogeneity: not applicable

**0.25 [0.08; 0.55]**

**0.25 [0.08; 0.55]**

**Type: State data systems**

Utah Virginia

North Carolina

13 55

26 101

11 21

0.24

0.26

0.52

[0.13; 0.37]

[0.18; 0.35]

[0.30; 0.74]

**Subtotal**

**Random effects model**

Heterogeneity: *I* 2 = 69%, *p* = 0.04

**177**

**0.28 [0.22; 0.35]**

**0.30 [0.20; 0.43]**

**Total**

**Random effects model**

Heterogeneity: *I* 2 = 54%, *p* = 0.09

**189**

0.1 0.2 0.3 0.4 0.5 0.6 0.7

**0.28 [0.22; 0.35]**

**0.29 [0.20; 0.40]**

\* Alcohol intoxication was reported to be a risk factor.

## Motor vehicle nontraffic crashes

**Study**

**BAC ≥ 0.10 g/dL Tested**

**AAF**

**95% CI**

**Type: Published studies** Minnesota DNR 2002–201026 Hall et al. 200927

Wisconsin DNR 2002–202028

Minnesota DNR 2001–201526

Wisconsin DNR 2001–202029 Landen et al. 199930

44

23

118

81

206

11

166

52

245

165

343

17

0.27

0.44

0.48

0.49

0.60

0.65

[0.20; 0.34]

[0.30; 0.59]

[0.42; 0.55]

[0.41; 0.57]

[0.55; 0.65]

[0.38; 0.86]

**Subtotal**

**Random effects model**

Heterogeneity: *I* 2 = 90%, *p* < 0.01

**988**

**0.49 [0.46; 0.52]**

**0.47 [0.37; 0.58]**

**Type: State data systems**

Utah

5 48

0.10

[0.03; 0.23]

**Subtotal 48**

**Random effects model**

Heterogeneity: not applicable

**0.10 [0.04; 0.23]**

**0.10 [0.04; 0.23]**

**Total**

**Random effects model**

Heterogeneity: *I* 2 = 91%, *p* < 0.01

**1036**

0.2

0.4 0.6 0.8

**0.47 [0.44; 0.50]**

**0.42 [0.28; 0.56]**

## Occupational and machine injuries

**Study**

**BAC ≥ 0.10 g/dL Tested**

**AAF**

**95% CI**

**Type: Published studies** West et al. 199631 (Canada) Foster & Dissanaike 201432 Davis & Brissie 200033 Fullerton et al. 199534 Lucas & Lincoln 200735

0

0

0

29

14\*

24

11

10

449

71

0.00

0.00

0.00

0.06

0.20

[0.00; 0.14]

[0.00; 0.28]

[0.00; 0.31]

[0.04; 0.09]

[0.11; 0.31]

**Subtotal**

**Random effects model**

Heterogeneity: *I* 2 = 69%, *p* = 0.01

**565**

**0.08 [0.06; 0.10]**

**0.05 [0.01; 0.24]**

**Type: State data systems**

Utah 1 5

North Carolina 3 7

0.20

0.43

[0.01; 0.72]

[0.10; 0.82]

**Subtotal 12**

**Random effects model**

Heterogeneity: *I* 2 = 0%, *p* = 0.42

**0.33 [0.13; 0.62]**

**0.33 [0.13; 0.62]**

**Total**

**Random effects model**

Heterogeneity: *I* 2 = 70%, *p* < 0.01

**577**

0

0.2 0.4 0.6 0.8

**0.08 [0.06; 0.11]**

**0.08 [0.02; 0.22]**

\* Alcohol was concluded to be a factor associated with the fatal injuries in investigation reports.

## Other road vehicle crashes

## (railroad-trespasser injuries)

**Study**

**BAC ≥ 0.10 g/dL Tested**

**AAF**

**95% CI**

**Type: Published studies**

North American Management 201336 CDC 199937

Pelletier et al. 199738

470\*

40

100

940

78

125

0.50

0.51

0.80

[0.47; 0.53]

[0.40; 0.63]

[0.72; 0.87]

**Subtotal**

**Random effects model**

Heterogeneity: *I* 2 = 94%, *p* < 0.01

**1143**

**0.53 [0.50; 0.56]**

**0.61 [0.44; 0.77]**

**Type: State data systems**

North Carolina

33 48

0.69

[0.54; 0.81]

**Subtotal 48**

**Random effects model**

Heterogeneity: not applicable

**0.69 [0.54; 0.80]**

**0.69 [0.54; 0.80]**

**Total**

**Random effects model**

Heterogeneity: *I* 2 = 93%, *p* < 0.01

**1191**

0.4 0.5 0.6

0.7

0.8

**0.54 [0.51; 0.57]**

**0.63 [0.49; 0.75]**

\* Alcohol was reported to be a factor based on coroners' and chief medical examiners' response.

# Poisoning (not alcohol)

**Study**

**BAC ≥ 0.10 g/dL Tested**

**AAF**

**95% CI**

**Type: Published studies** Przepyszny & Jenkins 200739 Moolenaar et al. 199540 Levine et al. 199541

19 84

17 74

48 119

0.23

0.23

0.40

[0.14; 0.33]

[0.14; 0.34]

[0.31; 0.50]

**Subtotal**

**Random effects model**

Heterogeneity: *I* 2 = 79%, *p* < 0.01

**277**

**0.30 [0.25; 0.36]**

**0.29 [0.20; 0.39]**

**Type: State data systems**

Utah Michigan Virginia Minnesota

North Carolina

170

475

668

60

1126

1719

4081

5576

500

2388

0.10

0.12

0.12

0.12

0.47

[0.09; 0.11]

[0.11; 0.13]

[0.11; 0.13]

[0.09; 0.15]

[0.45; 0.49]

**Subtotal**

**Random effects model**

Heterogeneity: *I* 2 = 100%, *p* < 0.01

**14264**

**0.18 [0.17; 0.18]**

**0.16 [0.09; 0.27]**

**Total**

**Random effects model**

Heterogeneity: *I* 2 = 100%, *p* < 0.01

**14541**

0.1 0.2 0.3 0.4

**0.18 [0.17; 0.18]**

**0.20 [0.13; 0.29]**

#

# Suicide

**Study**

**BAC ≥ 0.10 g/dL Tested**

**AAF**

**95% CI**

**Type: Published studies** Weinberger et al. 200142 Lewis et al. 200743

San Nicolas & Lemos 201544 Bullock & Diniz 200045 (Canada) Davis 199946

Wolford-Clevenger et al. 202047

Cherpitel et al. 199648

Fisher et al. 201549 Branas et al. 201150 Kaplan et al. 201351

Shields et al. 2006,52 200820 Przepyszny & Jenkins 200739 Conner et al. 201653

1

0

14

11

4

75

17

380

24

7777

656

8

88

46

14

102

77

24

447

101

2178

123

39579

2702

31

224

0.02

0.00

0.14

0.14

0.17

0.17

0.17

0.17

0.20

0.20

0.24

0.26

0.39

[0.00; 0.12]

[0.00; 0.23]

[0.08; 0.22]

[0.07; 0.24]

[0.05; 0.37]

[0.13; 0.21]

[0.10; 0.26]

[0.16; 0.19]

[0.13; 0.28]

[0.19; 0.20]

[0.23; 0.26]

[0.12; 0.45]

[0.33; 0.46]

**Subtotal**

**Random effects model**

Heterogeneity: *I* 2 = 89%, *p* < 0.01

**45648**

**0.20 [0.19; 0.20]**

**0.18 [0.14; 0.23]**

**Type: State data systems**

Utah Virginia Minnesota Colorado Michigan

North Carolina

485

493

588

1038

962

1249

2416

2417

2490

4221

3645

1886

0.20

0.20

0.24

0.25

0.26

0.66

[0.18; 0.22]

[0.19; 0.22]

[0.22; 0.25]

[0.23; 0.26]

[0.25; 0.28]

[0.64; 0.68]

**Subtotal**

**Random effects model**

Heterogeneity: *I* 2 = 100%, *p* < 0.01

**17075**

**0.28 [0.28; 0.29]**

**0.29 [0.19; 0.42]**

**Total**

**Random effects model**

Heterogeneity: *I* 2 = 99%, *p* = 0

**62723**

0 0.1 0.2 0.3 0.4 0.5 0.6

**0.22 [0.22; 0.22]**

**0.21 [0.16; 0.27]**

## Water transport

**Study**

**BAC ≥ 0.10 g/dL Tested**

**AAF**

**95% CI**

**Type: Published studies**

New York State OPRHP 2013–201954 Wisconsin DNR 2004–201855

Browne et al. 200356 Smith et al. 200157 Barss 201158 (Canada)

14

37

18

60

565

83

170

73

221

1923

0.17

0.22

0.25

0.27

0.29

[0.10; 0.27]

[0.16; 0.29]

[0.15; 0.36]

[0.21; 0.34]

[0.27; 0.31]

**Subtotal**

**Random effects model**

Heterogeneity: *I* 2 = 62%, *p* = 0.03

**2470**

**0.28 [0.26; 0.30]**

**0.25 [0.21; 0.30]**

**Type: State data systems**

Virginia Minnesota

3 7

20 45

0.43

0.44

[0.10; 0.82]

[0.30; 0.60]

**Subtotal 52**

**Random effects model**

Heterogeneity: *I* 2 = 0%, *p* = 0.94

**0.44 [0.31; 0.58]**

**0.44 [0.31; 0.58]**

**Total**

**Random effects model**

Heterogeneity: *I* 2 = 64%, *p* = 0.01

**2522**

0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8

**0.28 [0.27; 0.30]**

**0.27 [0.22; 0.32]**

|  |
| --- |
| **References** |

1. Botch SR JR. *Toxicological Findings of Pilots Involved in Aviation Accidents Operated under Title 14 CFR Part 135.* Washington, DC: Office of Aerospace Medicine, Federal Aviation Administration. August, 2009.
2. Botch SR JR. *Alcohol-Related Aviation Accidents Involving Pilots with Previous Alcohol Offenses*. Washington, DC: Office of Aerospace Medicine, Federal Aviation Administration. October, 2008.
3. Li G, Hooten EG, Baker SP, Butts JD. Alcohol in aviation-related fatalities: North Carolina, 1985-1994. *Aviat Space Environ Med*. 1998;69(8):755–760.
4. Boghossian E, Tambuscio S, Sauvageau A. Nonchemical suffocation deaths in forensic setting: A 6-year retrospective study of environmental suffocation, smothering, choking, and traumatic/positional asphyxia. *J Forensic Sci*. 2010;55(3):646–651. doi:10.1111/j.1556- 4029.2010.01351.x
5. Colorado Department of Public Health and Environment. Colorado Child Fatality Prevention System Data Dashboard. [https://cohealthviz.dphe.state.co.us/t/PSDVIP-](https://cohealthviz.dphe.state.co.us/t/PSDVIP-MHPPUBLIC/views/CFPSDashboardFinalLocal/Story1?iframeSizedToWindow=true&%3Aembed=y&%3AshowAppBanner=false&%3Adisplay_count=no&%3AshowVizHome=no) [MHPPUBLIC/views/CFPSDashboardFinalLocal/Story1?iframeSizedToWindow=true&:embed=y](https://cohealthviz.dphe.state.co.us/t/PSDVIP-MHPPUBLIC/views/CFPSDashboardFinalLocal/Story1?iframeSizedToWindow=true&%3Aembed=y&%3AshowAppBanner=false&%3Adisplay_count=no&%3AshowVizHome=no) [&:showAppBanner=false&:display\_count=no&:showVizHome=no](https://cohealthviz.dphe.state.co.us/t/PSDVIP-MHPPUBLIC/views/CFPSDashboardFinalLocal/Story1?iframeSizedToWindow=true&%3Aembed=y&%3AshowAppBanner=false&%3Adisplay_count=no&%3AshowVizHome=no). Accessed April 9, 2021.
6. Parks SE, Mirchandani G, Rodriguez S, Hellsten J. History of maltreatment among unintentional injury deaths: Analyses of texas child fatality review data, 2005–2007. *Inj Prev*. 2011;17(SUPPL. 1). doi:10.1136/ip.2010.026336
7. South Carolina State Child Fatality Advisory Committee. State Fiscal Year 2019 Report. https://scfacsc.files.wordpress.com/2020/02/2019-scfac-annual-report-final.pdf. Accessed April 12, 2021.
8. Okuda T, Wang Z, Lapan S, Fowler DR. Bathtub drowning: An 11-year retrospective study in the state of Maryland. *Forensic Sci Int*. 2015;253:64–70. doi:10.1016/j.forsciint.2015.05.013
9. Cummings P, Quan L. Trends in unintentional drowning the role of alcohol and
medical care.*JAMA*. 1999;281(23):2198–2202. doi:10.1001/jama.281.23.2198
10. Browne ML, Lewis-Michl EL, Stark AD. Unintentional drownings among New York State residents, 1988–1994. *Public Health Rep*. 2003;118(5):448–458. doi:10.1016/S0033- 3549(04)50276-5
11. Canadian Red Cross Society. Drownings and Other Water-Related Injuries in Canada: 10 Years of Research, Module 1 Overview. [https://www.redcross.ca/training-and-](https://www.redcross.ca/training-and-certification/swimming-and-water-safety-tips-and-resources/drowning-research) [certification/swimming-and-water-safety-tips-and-resources/drowning-research.](https://www.redcross.ca/training-and-certification/swimming-and-water-safety-tips-and-resources/drowning-research) Published 2006. Accessed April 9, 2021.
12. Lincoln JM, Perkins R, Melton F, Conway GA. Drowning in Alaskan waters. *Public Health Rep*. 1996;111(6):531–535.
13. Levine B, Moore KA, Fowler D. Interaction between carbon monoxide and ethanol in fire fatalities. *Forensic Sci Int*. 2001;124(2-3):115–116. doi:10.1016/s0379-0738(01)00583-7
14. Tridata Corporation. *Establishing a Relationship Between Alcohol and Casualties of Fire*. Arlington, VA: Federal Emergency Management Agency, United States Fire Administration National Fire Data Center. October, 1999.
15. U.S. Fire Administration, National Fire Data Center. *Case Study: Contribution of Alcohol to Fire Fatalities in Minnesota. Topical Fire Research Series, Vol. 3- Issue 4*. Washington, DC: U.S. Department of Homeland Security/Federal Emergency Management Agency; July 2003.
16. McGwin G, Chapman V, Rousculp M, Robison J, Fine P. The epidemiology of fire-related deaths in Alabama, 1992–1997. *J Burn Care Rehabil*. 2000;21(1):75–83. doi:10.1097/00004630-200021010-00016
17. Marshall SW, Runyan CW, Bangdiwala SI, Linzer MA, Sacks JJ, Butts JD. Fatal residential fires: Who dies and who survives? *JAMA* 1998;279(20):1633–1637. doi:10.1001/jama.279.20.1633
18. Cherry D, Runyan C, Butts J. A population based study of unintentional firearm fatalities. *Inj Prev*. 2001;7(1):62–65. doi:10.1136/ip.7.1.62
19. Collins KA. Adolescent Russian roulette deaths. *Am J Forensic Med Pathol*. 2010;31(1):4–6. doi:10.1097/PAF.0b013e3181c6849f
20. Shields LBE, Hunsaker JC, Stewart DM. Russian roulette and risk-taking behavior: A medical examiner study. *Am J Forensic Med Pathol*. 2008;29(1):32–39. doi:10.1097/PAF.0b013e318160675e
21. Spunt B, Brownstein HH, Crimmins SM, Langley S, Spanjol K. Alcohol-related homicides committed by women. *J Psychoactive Drugs*. 1998;30(1):33–43. doi:10.1080/02791072.1998.10399669
22. Spunt B, Brownstein H, Goldstein P, Fendrich M, Liberty HJ. Drug use by homicide offenders. *J Psychoactive Drugs*. 1995;27(2):125–134. doi:10.1080/02791072.1995.10471681
23. Banks L, Crandall C, Sklar D, Bauer M. A comparison of intimate partner homicide to intimate partner homicide-suicide: One hundred and twenty-four New Mexico cases.*Violence Against Women*. 2008;14(9):1065–1078. doi:10.1177/1077801208321983
24. Greenfeld L. *Alcohol and Crime: An Analysis of National Data on the Prevalence of Alcohol Involvement in Crime.* Washington, DC. US Department of Justice, Office of Justice Programs, Bureau of Justice Statistics; April 5–7, 1998.
25. Koutsavlis AT, Kosatsky T. Environmental-Temperature Injury in a Canadian Metropolis. *J Environ Health*. 2003;66(5):40–45.
26. Minnesota Department of Natural Resources. Incident (accident) reports. [https://www.dnr.state.mn.us/enforcement/incidentreports/index.html? cf\_chl\_captcha\_tk](https://www.dnr.state.mn.us/enforcement/incidentreports/index.html?__cf_chl_captcha_tk__=d75424ba4d2e1c70b375583390bef6fccc0f677d-1618131130-0-AeZxhJIZ3GwnN8Li8Fzo0OnztKNCpkvJp5hwVJcvj6u5a1BhhNUO-BWaZWJMovu2ICPEqUIk_pPUXEAcuUK9ABFhkY7f3CsoOJyVmfKTQNH5iQX-)=d75424ba4d2e1c70b375583390bef6fccc0f677d-1618131130-0-

[A eZxhJIZ3GwnN8Li8Fzo0OnztKNCpkvJp5hwVJcvj6u5a1BhhNUO-BW aZWJMovu2ICPEqUIk\_pPUXEAcuUK9ABFhkY7f3CsoOJyVmfKTQNH5iQX-.](https://www.dnr.state.mn.us/enforcement/incidentreports/index.html?__cf_chl_captcha_tk__=d75424ba4d2e1c70b375583390bef6fccc0f677d-1618131130-0-AeZxhJIZ3GwnN8Li8Fzo0OnztKNCpkvJp5hwVJcvj6u5a1BhhNUO-BWaZWJMovu2ICPEqUIk_pPUXEAcuUK9ABFhkY7f3CsoOJyVmfKTQNH5iQX-) Accessed April 9, 2021.

1. Hall AJ, Bixler D, Helmkamp JC, Kraner JC, Kaplan JA. Fatal All-Terrain Vehicle Crashes. Injury Types and Alcohol Use. *Am J Prev Med*. 2009;36(4):311–316. doi:10.1016/j.amepre.2008.11.019
2. Wisconsin Department of Natural Resources. Fatality summary, annual reports and crash reporting, All-Terrain Vehicle Crash Incident Reports. https://dnr.wisconsin.gov/topic/ATV/CrashInfo. Accessed April 9, 2021.
3. Wisconsin Department of Natural Resources. Fatality summary, annual reports and crash reporting, Recreational Vehicle Incident Reports. [https://dnr.wisconsin.gov/topic/snowmobile/CrashInfo.](https://dnr.wisconsin.gov/topic/snowmobile/CrashInfo) Accessed April 9, 2019.
4. Landen MG, Middaugh J, Dannenberg AL. Injuries associated with snowmobiles, Alaska, 1993- 1994. *Public Health Rep*. 1999;114(1):48–52. doi:10.1093/phr/114.1.48
5. West R, Shkrum MJ, Young JG. Commercial logging fatalities in Ontario, 1986-1991. *Am J Forensic Med Pathol*. 1996;17(4):299–304. doi:10.1097/00000433-199612000-00004
6. Foster CA, Dissanaike SD. Prevalence and consequences of positive blood alcohol levels among patients injured at work. *J Emerg Trauma Shock* 2014;7(4):268–273. doi:10.4103/0974-2700.142748
7. Davis GG, Brissie RM. A Review of Crane Deaths in Jefferson County, Alabama. *J Forensic Sci*. 2000;45(2):392-396. doi:10.1520/jfs14692j
8. Fullerton L, Olson L, Crandall C, Sklar D, Zumwalt R. Occupational Injury Mortality in New Mexico. *Ann Emerg Med*. 1995;26(4):447–454. doi:10.1016/S0196-0644(95)70113-3
9. Lucas DL, Lincoln JM. Fatal falls overboard on commercial fishing vessels in Alaska. *Am J Ind Med*. 2007;50(12):962–968. doi:10.1002/ajim.20509
10. North American Management. *Rail Trespasser Fatalities*. Washington, DC. U.S. Department of Transportation, Federal Railroad Administration: June, 2013
11. Centers for Disease Control and Prevention. Injuries among railroad trespassers--Georgia, 1990-1996. *MMWR Morb Mortal Wkly Rep*. 1999;48(25):537–541.
12. Pelletier A. Deaths among railroad trespassers: The role of alcohol in fatal injuries. *JAMA* 1997;277(13):1064–1066. doi:10.1001/jama.277.13.1064
13. Przepyszny LM, Jenkins AJ. The prevalence of drugs in carbon monoxide-related deaths: A retrospective study, 2000-2003. *Am J Forensic Med Pathol*. 2007;28(3):242–248. doi:10.1097/01.paf.0000257417.26383.e4
14. Moolenaar RL, Etzel RA, Gibson Parrish R. Unintentional deaths from carbon monoxide poisoning in New Mexico, 1980 to 1988. A comparison of medical examiner and national

mortality data. *West J Med*. 1995;163(5):431–43.

1. Levine B, Green D, Smialek JE. The Role of Ethanol in Heroin Deaths. *J Forensic Sci*. 1995;40(5):808–810. doi:10.1520/jfs15389j
2. Weinberger LE, Sreenivasan S, Sathyavagiswaran L, Markowitz E. Child and Adolescent Suicide in a Large, Urban Area: Psychological, Demographic, and Situational Factors. *J Forensic Sci*. 2001;46(4):902–907. doi:10.1520/jfs15066j
3. Lewis RJ, Johnson RD, Whinnery JE, Forster EM. Aircraft-assisted pilot suicides in the United States, 1993-2002. *Arch Suicide Res*. 2007;11(2):149–161. doi:10.1080/13811110701247636
4. San Nicolas AC, Lemos NP. Toxicology findings in cases of hanging in the City and County of San Francisco over the 3-year period from 2011 to 2013. *Forensic Sci Int*. 2015;255:146–155. doi:10.1016/j.forsciint.2015.07.006
5. Bullock MJ, Diniz D. Suffocation Using Plastic Bags: A Retrospective Study of Suicides in Ontario, Canada. *J Forensic Sci*. 2000;45(3):14736J. doi:10.1520/jfs14736j
6. Davis LG. Suicidal Drowning in South Florida. *J Forensic Sci*. 1999;44(5):902–905. doi:10.1520/jfs12013j
7. Wolford-Clevenger C, McCleskey B CK. An Assessment of Blood Alcohol Concentration and Potential for Reversal of Method Used in Suicides. *Alcohol Clin Exp Res*. 2020;44:171.
8. Cherpitel CJ. Regional differences in alcohol and fatal injury: A comparison of data from two county coroners. *J Stud Alcohol*. 1996;57(3):244–248. doi:10.15288/jsa.1996.57.244
9. Fisher LB, Overholser JC, Dieter L. Methods of Committing Suicide Among 2,347 People in Ohio. *Death Stud*. 2015;39(1):39–43. doi:10.1080/07481187.2013.851130
10. Branas CC, Richmond TS, Ten Have TR, Wiebe DJ. Acute alcohol consumption, alcohol outlets, and gun suicide. *Subst Use Misuse*. 2011;46(13):1592–1603. doi:10.3109/10826084.2011.604371
11. Kaplan MS, McFarland BH, Huguet N, et al. Acute alcohol intoxication and suicide: A gender- stratified analysis of the National Violent Death Reporting System. *Inj Prev*. 2013;19(1):38–43. doi:10.1136/injuryprev-2012-040317
12. Shields LBE, Hunsaker DM, Hunsaker JC, Ward MK. Toxicologic findings in suicide: A 10-year retrospective review of Kentucky medical examiner cases. *Am J Forensic Med Pathol*. 2006;27(2):106–112. doi:10.1097/01.paf.0000220913.19508.99
13. Conner KR, Lathrop S, Caetano R, Silenzio V, Nolte KB. Blood Alcohol Concentrations in Suicide and Motor Vehicle Crash Decedents Ages 18 to 54. *Alcohol Clin Exp Res*. 2016;40(4):772–775. doi:10.1111/acer.13002
14. New York State Office of Parks, Recreation & Historic Preservation, Boating Resources. Recreational Boating Reports. https://parks.ny.gov/recreation/boating/resources.aspx. Accessed April 9, 2021.
15. Wisconsin Department of Natural Resources. Fatality summary, annual reports and crash reporting, Boat Crash Incident Reports. <https://dnr.wisconsin.gov/Topic/Boat/CrashInfo.> Accessed April 9, 2019
16. Browne ML, Lewis-Michl EL, Stark AD. Watercraft-related drownings among
New York State residents, 1988–1994. *Public Health Rep*. 2003;118(5):459–
463. doi:10.1016/S0033- 3549(04)50277-7
17. Smith GS, Keyl PM, Hadley JA, et al. Drinking and recreational boating fatalities: A population- based case-control study. *JAMA* 2001;286(23):2974–2980. doi:10.1001/jama.286.23.2974
18. Barss, P *Boating Immersion and Trauma Deaths in Canada: 18 Years of Research*. Transport Canada and The Canadian Red Cross Society. 2011.