

Self-Inflicted Poisoning

On average, every day 38 people visit an emergency department for treatment for an incident involving self-inflicted poisoning.

Results

For the purposes of this Compass, self-inflicted poisoning includes any self-harm cases which involve the intentional poisoning of oneself by way of exposure to or ingestion of various substances. Injury suicide (attempted), which include, but are not limited to, actions of strangulation, submersion, hand gun discharge etc., were not included in this analysis.

During the 2005/06 fiscal year, there were a total of 12,823 emergency department visits and 5,890 hospitalizations for treatment for self-inflicted poisoning. (See Methods Section for Data Sources). These numbers translate into provincial rates of 104.4 per 100,000 population for emergency department visits and 47.2 per 100,000 for hospitalizations (Table 1).

Overall, females accounted for 63% of emergency department visits and hospitalizations. Specifically, females between 15 and 19 years of age had the highest numbers and rates of emergency department visits and hospitalizations.

For emergency department visits, poisoning from antiepileptic, sedative hypnotics as well as poisoning from nonopioid analgesics, antipyretics, and antirheumatics were the most common, accounting for 38% of all visits. For hospitalizations, poisoning due to the use of these two categories of drugs were the most common accounting for 13% and 15% of all hospitalizations respectively. There were 159 (1.2%) cases of emergency department visits for alcohol toxicity and 71 (1.2%) hospitalizations. These cases are included in other/unspecified (Figure 2).

Injury rates varied by region, with the highest rate of both emergency department visits and hospitalizations for self-inflicted poisoning, reported in the Northern region of Ontario. (Table 1).

Over 42% of individuals who visited an emergency department for an incident involving self-inflicted poisoning were discharged to their place of residence. Another 37% were admitted into a reporting facility as an in-patient directly from ambulatory care. For hospitalized cases, approximately 13% were transferred to another facility providing inpatient hospital care, which includes acute, sub acute, and psychiatric care. Over 5% signed themselves out against medical advice and 75% were

FIGURE 1. Emergency department visits for self-inflicted poisoning by age and sex (Ontario, 2005/2006)

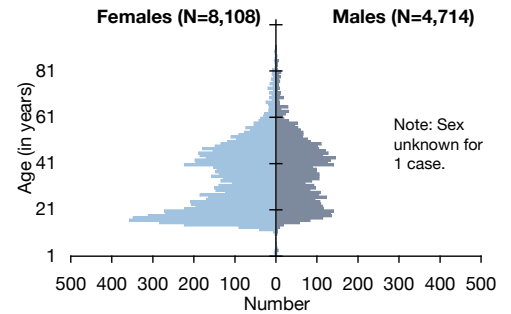


FIGURE 2. Type of drug used (Most responsible diagnosis, Ontario, 2005/2006)

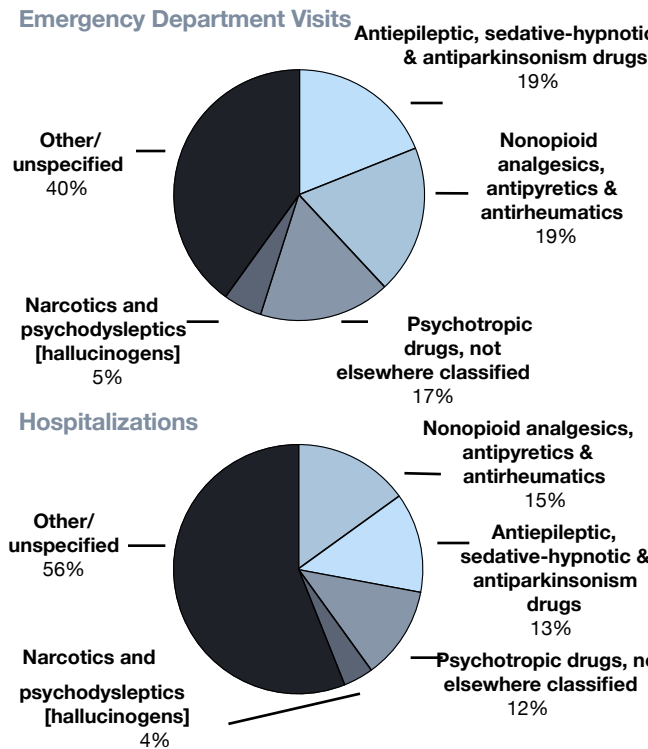


TABLE 1. Regional comparison of self-inflicted poisoning (Ontario, 2005/06)

| | South West | Central South | Central West | Central East | Toronto | East | North | Ontario |
|------------------------------------|------------|---------------|--------------|--------------|---------|-------|-------|---------|
| Emergency Department Visits | | | | | | | | |
| Number | 1,638 | 1,633 | 2,199 | 1,846 | 1,958 | 2,113 | 1,345 | 12,823 |
| Rate per 100,000 ^a | 107.2 | 142.1 | 94.0 | 84.6 | 74.5 | 130.1 | 169.4 | 104.4 |
| Average Age | 34.98 | 34.82 | 32.43 | 34.82 | 35.3 | 34.13 | 32.93 | 34.17 |
| % Female | 62 | 61 | 66 | 62 | 64 | 64 | 63 | 63 |
| Hospitalizations | | | | | | | | |
| Number | 703 | 675 | 986 | 861 | 792 | 749 | 1,084 | 5,890 |
| Rate per 100,000 ^a | 44.6 | 57.7 | 41.4 | 39.1 | 29.4 | 45.2 | 134.8 | 47.2 |
| Average Age | 38.18 | 37.09 | 35.47 | 37.46 | 39.31 | 37.25 | 35.16 | 36.94 |
| % Female | 62 | 58 | 66 | 61 | 63 | 63 | 67 | 63 |

a. Age-standardized rate per 100,000 population. Note: Region of residence unknown/outside of Ontario for 91 emergency department visits and 40 hospitalizations.



Ontario Injury Compass

is produced by

SMARTRISK

with support from

The Ontario Public

Health Association

and

The Government of Ontario



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TABLE 2. Regional comparison of self-inflicted poisoning by age group (Ontario, 2005/06)

| | South West | Central South | Central West | Central East | Toronto | East | North | Ontario |
|---|-------------|---------------|--------------|--------------|-------------|-------------|-------------|--------------|
| Emergency Department Visits- Rate per 100,000^a (Number) | | | | | | | | |
| 15-19 years | 242.2 (268) | 306.2 (251) | 280.6 (452) | 212.6 (335) | 171.8 (253) | 339.6 (371) | 373.8 (231) | 261.8 (2172) |
| 20-24 years | 179.4 (199) | 289.9 (234) | 184.1 (301) | 145.3 (208) | 136.7 (246) | 238.8 (264) | 296.3 (170) | 194.2 (1643) |
| 25-29 years | 154.5 (153) | 225 (162) | 146.8 (238) | 108.7 (135) | 121.4 (271) | 173.9 (184) | 325.8 (147) | 156.4 (1300) |
| 30-34 years | 148.8 (151) | 180.4 (137) | 108.8 (195) | 112.1 (162) | 64.9 (153) | 155.3 (175) | 251.3 (130) | 123.8 (1116) |
| 35-39 years | 149.2 (167) | 193.9 (170) | 86 (173) | 112.4 (198) | 87.7 (192) | 166.9 (209) | 256.2 (153) | 129.3 (1268) |
| Hospitalizations- Rate per 100,000^a (Number) | | | | | | | | |
| 15-19 years | 99.4 (110) | 97.6 (80) | 105.5 (170) | 75.5 (119) | 47.5 (70) | 84.2 (92) | 250.8 (155) | 96.7 (802) |
| 20-24 years | 63.1 (70) | 106.5 (86) | 58.1 (95) | 70.6 (101) | 38.9 (70) | 76.9 (85) | 212.6 (122) | 75.2 (636) |
| 25-29 years | 43.4 (43) | 80.6 (58) | 54.3 (88) | 44.3 (55) | 39 (87) | 56.7 (60) | 257.1 (116) | 62.1 (516) |
| 30-34 years | 66 (67) | 81.6 (62) | 48.5 (87) | 52.6 (76) | 29.3 (69) | 55 (62) | 212.6 (110) | 59.7 (538) |
| 35-39 years | 59 (66) | 74.1 (65) | 46.2 (93) | 51.1 (90) | 43.9 (96) | 63.9 (80) | 216 (129) | 63.2 (620) |

a. Age-specific rate (and number) per 100,000 population. Note: Region of residence unknown/outside of Ontario for 91 emergency department visits and 40 hospitalizations.

discharged home. Fewer than 1% of individuals died after arrival in the emergency department; however, approximately 2% died after hospital admission. The 5,890 hospitalized cases accounted for more than 34,739 days in acute care hospitals with an average length of stay of 5.9 days.

Discussion

This Compass highlights patterns of Ontario emergency department visits and hospitalizations for self-inflicted poisonings.

Self-inflicted poisonings, especially in youth, are an important issue in our society and represent a significant portion of the burden on our health care system.¹

Much of the literature on self-inflicted poisoning focuses on nonprescription drug overdoses, especially those involving acetaminophen, which is the most commonly used over-the-counter antipyretic analgesic in Canada (as well as in many other countries) and has been cited as the leading cause of deliberate self-poisoning.^{1,2,3,4} Toxicity in the majority of acetaminophen overdose cases is severe hepatic necrosis.^{2,3}

Two Canadian studies found that those at the highest risk for acetaminophen overdose are young females, Aboriginals, and individuals who are on social assistance.^{2,3} In addition, these studies found that the number of emergency department visits for self poisoning incidents were found to peak in the spring and early summer.^{2,3}

There are various clinical syndromes associated with acetaminophen overdoses. For example, the 'garden variety' syndrome refers to patients who ingest large amounts of acetaminophen with a suicidal intent.¹ Another pattern, seen primarily in chronic alcoholics, involves ingesting smaller amounts of the drug in order to relieve pain; however, in the process, accidentally poisoning themselves.¹

References

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Although accidental poisoning is not the focus of this Compass, it is an important issue, nonetheless.

Young women, who are prone to self poisoning and overdosing from drugs including, but not limited to, acetaminophen, often suffer from depression, anxiety, impulsivity, low self esteem, and suicidal ideation.⁵

And finally, non fatal overdoses have been reported among injection drug users, specifically in cases of heroin injection, cocaine injection, benzodiazepine use, alcohol use, and homelessness.^{6,7}

Managing the risk

- ❖ The recommended maximal dosage of acetaminophen is 4 g daily; however even low doses can cause liver toxicity in individuals who abuse alcohol and those who fast.³ Ingesting more than 10 g of this analgesic can cause acute liver failure.³
- ❖ Support legislation to limit over-the-counter acetaminophen sales. This may help decrease the incidence of overdose cases.
 - e.g., some studies have found that implementing legislation, which includes measures such as the restriction of non-prescription drug sales to limited quantities, is associated with a decline in cases of acetaminophen overdoses.³
- ❖ Implement ongoing development of social, contextual and structural interventions to address the issue of overdosing among injection drug users.⁵
- ❖ Address the issue of suicidal intent in hospitals in order to accurately assess the need for support for patients who are admitted or visit an emergency department.
- ❖ Effective treatment programs need to be widely available and accessible.
- ❖ Public health needs to familiarize themselves with existing resources in order to effectively collaborate with key stakeholders on this issue.

For Further Information

Centre for Addiction and Mental Health: www.camh.net
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Methods

Emergency department data were obtained from the National Ambulatory Care Reporting System and acute care hospitalization data were obtained from the Discharge Abstract Database at the Canadian Institute for Health Information for the 2005/06 fiscal year. ICD-10 coding (X60-X69) was used to isolate all emergency department visits and hospitalizations for self-inflicted poisoning incidents. Note that some persons were seen in an emergency department and then admitted to hospital; however, persons can be admitted to hospital without visiting an emergency department. Regions were defined according to place of residence using the Ontario Ministry of Health Region Codes. Deaths occurring outside of the hospital setting were not included in this analysis.

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