Supplemental Online Content

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**eMethods.** Case Definitions, Data Sources, and Analytical Methods

This supplemental material has been provided by the authors to give readers additional information about their work.
Case Definitions

The primary outcome was all-cause mortality in the year following on or more Emergency Department (ED) visits due to alcohol. ED visits due to alcohol were defined as visits where one of the ICD-10 codes from Table 1 was listed as the main or contributing reason for the ED visit.

Table 1. ICD-10 codes for ED visits due to alcohol

| ICD Code | Type of Harm                                                                 |
|----------|------------------------------------------------------------------------------|
| F100     | Mental and behavioural disorders due to use of alcohol, acute intoxication   |
| F101     | Mental and behavioural disorders due to use of alcohol, harmful use          |
| F102     | Mental and behavioural disorders due to use of alcohol, dependence syndrome  |
| F103     | Mental and behavioural disorders due to use of alcohol, withdrawal state    |
| F104     | Mental and behavioural disorders due to use of alcohol, withdrawal state with delirium |
| F105     | Mental and behavioural disorders due to use of alcohol, psychotic disorder   |
| F106     | Mental and behavioural disorders due to use of alcohol, amnesic syndrome    |
| F107     | Mental and behavioural disorders due to use of alcohol, residual and late-onset psychotic disorder |
| F108     | Mental and behavioural disorders due to use of alcohol, other mental and behavioural disorders |
| F109     | Mental and behavioural disorders due to use of alcohol, unspecified mental and behavioural disorder |
| E244     | Alcohol-induced pseudo-Cushing's syndrome                                   |
| G312     | Degeneration of nervous system due to alcohol                              |
| G621     | Alcoholic polyneuropathy                                                    |
| G721     | Alcoholic myopathy                                                          |
| I426     | Alcoholic cardiomyopathy                                                    |
| K292     | Alcoholic gastritis                                                         |
| K700     | Alcoholic fatty liver                                                       |
| K701     | Alcoholic hepatitis                                                         |
| K702     | Alcoholic fibrosis and sclerosis of liver                                   |
| K703     | Alcoholic cirrhosis of liver                                                |
| K704     | Alcoholic hepatic failure                                                   |
| K709     | Alcoholic liver disease, unspecified                                         |
| K852     | Alcohol-induced acute pancreatitis                                          |
| K860     | Alcohol-induced chronic pancreatitis                                        |
| Code   | Description                                                                 |
|--------|-----------------------------------------------------------------------------|
| Q99304 | Maternal care for suspected damage to fetus from alcohol / Fetal Alcohol Syndrome |
| R780   | Finding of alcohol in blood                                                 |
| T510   | Toxic effect of alcohol                                                     |
| T519   | Toxic effect of alcohol, unspecified                                         |
| X45    | Accidental poisoning by and exposure to alcohol                             |
| X65    | Intentional self-poisoning by and exposure to alcohol                        |
| Y15    | Poisoning by and exposure to alcohol, undetermined intent                   |
Data Sources

Data were obtained using linked health administrative data held by ICES, an independent, non-profit research institute whose legal status under Ontario’s health information privacy law allows it to collect and analyze health care and demographic data, without consent, for health system evaluation and improvement. Data on demographic characteristics, ED visits and death were obtained through the following linked, de-identified health administrative databases at ICES: 1) the Registered Persons Database which captures demographic information including age and sex and the date of all deaths; and 2) the National Ambulatory Care Reporting System, which captures all ED visits in Ontario. These datasets were linked using unique encoded identifiers and analyzed at ICES. This project was authorized under section 45 of Ontario’s Personal Health Information Protection Act thus not requiring review by a Research Ethics Board.
Analyses

We present descriptive statistics including rates and proportions for the probability of all-cause mortality in the 365 days following an index event for four groups: the general population of Ontario (excluding those who had one or more ED visit due to alcohol during the study period), and individuals with a total of 1 (i.e., zero additional ED visits due to alcohol), 2 and 3 or more ED visits due to alcohol respectively in the year following the initial ED visit due to alcohol. Each individual in our study could only contribute a maximum of one year to follow up. Individuals were followed until one of the followed occurred a) a year had passed since their first point of eligibility, b) they died or c) they lost coverage for the Ontario Health Insurance Program (the province of Ontario’s universal health care coverage). For individuals with ED visits due to alcohol follow up began after their first ED visit due to alcohol in the study period (individuals with more than 1 ED visits due to alcohol in a year were followed for up to 365 days following the final ED visit in that year). For individuals in the general population of Ontario without an ED visit due to alcohol during the entire study period follow up began at the first point of study eligibility.

We used Poisson models offset by the log transformed person time at risk to calculate Incidence Rate Ratios (IRR) with 95% confidence intervals for the risk of death in the three groups of individuals with ED visits due to alcohol (1, 2, 3+ visits in a year) relative to the general population. We ran one overall model and then six separate Poisson models stratified by age and sex (men aged 15-29, 30-44, 45-59 years and women aged 15-29, 30-44, 45-59 years).