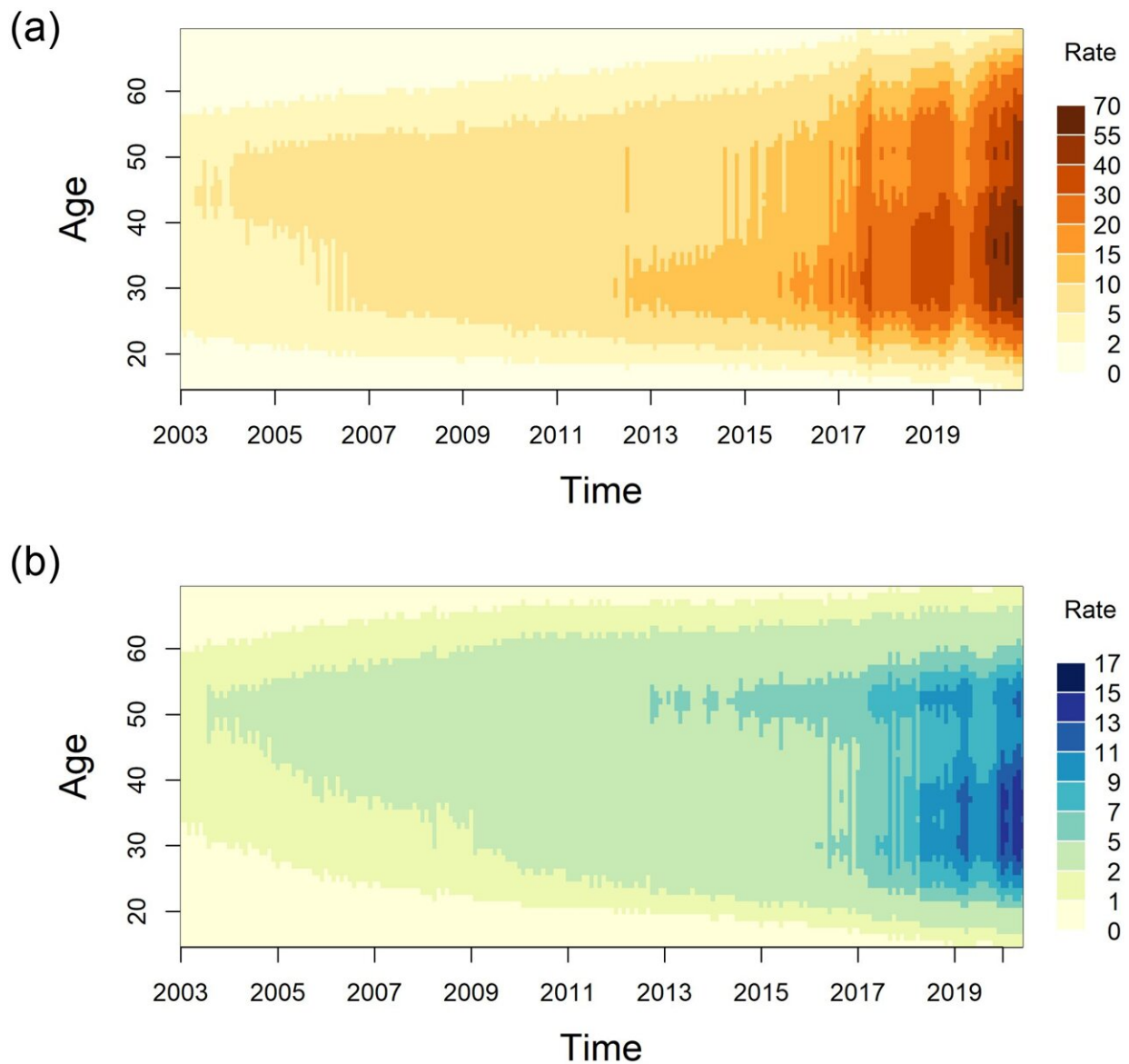


Opioid-related deaths affecting more younger adults, study finds

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Opioid-related mortality rate per 100,000 person-years, by age and date of death

in months in Ontario. Note the age-related shift in peak mortality rates from the 45 to 54-year age group in 2003 to the 25 to 44-year age group in 2020. Credit: Paul et al., 2022, PLOS ONE, CC-BY 4.0 (creativecommons.org/licenses/by/4.0/)

From 2003 through 2020, as opioid-related mortality in Ontario, Canada increased five-fold, the age distribution also shifted downward—with rates now peaking for people in their mid-30s—according to a new study published this week in the open-access journal *PLOS ONE* by Patrick Brown of University of Toronto, and colleagues.

Opioid-related mortality is a critical public health issue in North America, with rates of opioid-related deaths having increased drastically over recent years. Updated [data](#) on the demographic makeup of deaths and how they have changed over time is crucial to tailoring [public health interventions](#).

In the new study, the researchers used [mortality data](#) from the Office of the Chief Coroner for Ontario, the most populous province in Canada. Opioid-related deaths were defined as deaths where acute drug toxicity involving opioids was considered as directly contributing to the cause of death.

Between 2003 and 2020, there were 11,633 opioid-related deaths in people aged 15 through 69. Overall, 72% of [opioid-related deaths](#) during the 18-year study period were male, and accidental deaths accounted for 82% of the deaths.

Opioid-related mortality rates jumped more than fivefold over this period. They increased substantially for both sexes and across all ages over time, with a downward shifting age distribution for both sexes.

Using a novel Bayesian modeling approach, the authors estimated that in 2003, the maximum mortality rate for males, of 5.5 deaths per 100,000 person-years (95% CI 4.0-7.6), was seen around age 44, while in 2020, the maximum of 67.2 deaths per 100,000 person-years (95% CI 55.3-81.5) was at age 35. For females, the greatest mortality rates also shifted to younger ages; in 2003 the peak of 2.2 deaths per 100,000 person-years (95% CI 1.5-3.2) was at age 51, while in 2020, the peak of 16.8 (95% CI 12.8-22.0) was at age 37.

Based on the observed data and resulting models, the researchers hypothesize that opioid-related mortality among the younger population will continue to grow. Targeting strategies to address opioid-related mortality among individuals in the 25 to 44-year age group is of greater importance than in the past, they conclude.

The authors add: "Opioid-related mortality has been rising in Ontario, Canada since 2003, and after a brief decline in part of 2019, the [upward trend](#) resumed in the 2020 COVID-19 era. Using a novel Bayesian model and high-frequency data from the coroner's office, we show that the [age distribution](#) of opioid-related mortality has shifted gradually over 18 years from being highest among the 45 to 54-year age group, to being highest among the 25 to 44-year age group."

More information: Identifying the changing age distribution of opioid-related mortality with high-frequency data, *PLoS ONE* (2022). [DOI: 10.1371/journal.pone.0265509](#)

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