past three years. Among people with active opioid prescribing at the time of death, 38% also had evidence of non-prescribed opioid use on post mortem toxicology.

Although its prevalence declined during the study period, active benzodiazepine prescriptions remained common, and in 2016 28% of people who died of an opioid-related cause had an active benzodiazepine prescription at the time of their death, while 16% had active prescriptions for both benzodiazepines and opioids.

Overall, people over 45 years and women were more likely to have active opioid prescribing at the time of death. Of those people with no active opioid prescribing, 47% of deaths involved fentanyl in 2016, a sharp increase from 20% in 2013.

The rise in opioid-related morbidity and mortality in North America over recent years has been described as an overdose crisis.[1] It has been argued that one contributing factor to this rise has been the rapid increase in opioid prescribing for chronic non-cancer pain. Although opioid prescribing rates may have fallen in Canada in recent years, as many as one in eight residents of Ontario were prescribed opioid analgesia during 2016.[2]

The researchers comment: 'The absolute number of people with an active opioid prescription who died of an overdose increased by 15% over our study period. This reinforces the need for responses to the opioid crisis that address all avenues through which people can access these drugs, including prescriptions, diverted drugs, and illicitly manufactured products.'

DR JEZ THOMPSON

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Smoking cessation

Rise in vaping accompanied by fall in youth smoking

An increase in the use of e-cigarettes (vaping) has been associated with a drop in smoking by teenagers and young adults, a time trend analysis from the United States has found.

The investigators carried out a literature search using PubMed for surveys on smoking and vaping up to and including 2017. Data on cigarette use by 15-25 year olds were obtained from five different publicly available surveys.

The first of the surveys began to collect data on vaping in 2011 with all surveys collecting such data by 2014. Information on youth and young adult vaping before 2014 was limited and diverges for the different surveys, but indicates that vaping occurred at relatively low levels from 2011 to 2013, but reached much higher levels by 2014. This year was identified as the tipping point when vaping became popular among young people.

The investigators examined trends within the surveys for both past 30-day use and established smoking among young people. One of the studies indicated that the downward trend in smoking in the past 30 days was more than three times greater in the vaping period, from 2014, (a total annual relative reduction in smoking prevalence of 14.1%) than the long-term trend (an annual relative reduction of 4.6%). With established smoking, trend line analysis of daily cigarette use by 15 to 17 year olds showed about three times the annual relative reduction in the vaping period compared with the long-term trend. This reduction was even more evident in the 18-21 year age group. Nearly twice the relative reduction in daily smoking was noted in the 22-24 year age group during the vaping period.

The researchers conclude that long-term decline in smoking prevalence among young people in the US accelerated after 2013 when vaping became more widespread. They also found that there was a decline in established smoking, as measured by daily smoking, smoking half a pack a day or having smoked at least 100 cigarettes to date and currently smoking some days or every day, which markedly accelerated when vaping increased.

The authors comment: 'It is possible that trying e-cigarettes is causally related to smoking for some youth, but the aggregate effect of this relationship at the population level may be small enough that its effects are swamped by other factors that influence smoking behaviour.'

In 2018, a report commissioned by Public Health England *Evidence review of e-cigarettes and heated tobacco products* concluded that: 'the evidence does not support the concern that e-cigarettes are a route into smoking among young people.'[1] This was at variance with the US National Academies of Sciences, Engineering and Medicine which published a report that concluded there was substantial evidence that vaping among young people is strongly associated with progression to smoking.[2]

This paper, based on data gathered from young people in the USA, helps shed further light on this dissonance.

DR PETER SAUL

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