The American opioid death epidemic—lessons for New Zealand?

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ABSTRACT

The US is currently in the grips of an epidemic of opioid drug deaths. The pattern has shifted from prescription opioids to illicit fentanyl in most recent years. In New Zealand there has been concern about prescription opioid drugs, although we have not seen the rapid increase in mortality that has been observed in the US. It is not clear whether we will follow the American pattern, but there may be lessons we can learn from the American experience and develop appropriate surveillance for this potentially significant public health problem.

For anyone who follows the US media or watches the American medical scene, it is not news that America is currently in the grips of an unprecedented epidemic of deaths due to opioid drugs. Recently, the US surgeon general released an extensive report on the problem of drug and alcohol addiction in the US, and the National League of Cities/National Association of Counties issued a joint report calling for action. The issue receives frequent coverage in major national newspapers such as the Washington Post and New York Times, and is the subject of innumerable investigations and stories in local print and electronic media. By 2015 the number of fatal overdoses in the US had quadrupled over 1999 rates, with 63.1% (33,091 of a total 52,404) of drug deaths involving opioids. Although official 2016 data is not yet available, the New York Times estimates that there will likely be a 19% increase over 2015 figures, based on a review of local medical examiner and health department data from across the country.

CDC data shows that overdoses involving commonly prescribed natural and semisynthetic opioids and methadone paralleled the general rise in opioid deaths from 2000 to 2010, when a resurgence of heroin was associated with an increase in the slope of the rise of opioid overdoses. This was followed by another increase in the slope associated with the appearance of synthetic opioids, notably fentanyl and its analogues in 2013. Although it can be difficult to determine the source of the drugs in fatal overdoses, it would appear that fentanyl and its analogues are coming largely from non-pharmaceutical sources used to cut or substitute for heroin, or in the illicit manufacture of pharmaceutical ‘look-alikes’ sold on the street. Thus, what initially was considered by many to be primarily a problem driven by prescription medication abuse, is shifting to an ‘illicit’ pattern, although it is difficult, if not impossible, to disentangle the two. Prescription drug look-alikes sold on the street tend to blur that distinction, and the nature of opioid addiction is such that dependent individuals may switch from prescription to illicit sources depending upon ease of access, which may account for the re-emergence of heroin. Furthermore, the pattern of the opioid drug death epidemic has not been uniform across the US, with certain states hit harder than others, some of which may be accounted for by differing sources of drug. Indeed, heroin use has been shown to follow market source patterns, such as the black tar variety seen in San Francisco versus the powdered form in Philadelphia. The latter may be more easily cut with powdered fentanyl, accounting for some of the drug
mortality differences seen in the two cities. The epidemic of opioid/opiate drugs deaths in the US has been greatest in the eastern northern and southern states parallel to and along the Appalachian mountain chain. In Cuyahoga County (greater Cleveland), Ohio, one of the hardest hit states, drug deaths climbed from 250 in 2006 to 370 in 2015 mostly due to heroin on a background of other opioids (predominantly oxycodone with recent addition of fentanyl). Deaths occurred predominantly in males (71%, county population 47.6%) and in the 30–44 and 45–60 age groups (35% and 36% respectively). Fifty-five percent (55%) were suburban (non-urban). Highest attained level of education was high school diploma or less in 70%. Seventy-five percent (75%) were white (64% of county population).

Opioids are of course available worldwide. In a 2015 study, Martins et al suggest that “there has been a substantial increase in drug overdose incidence and prevalence in several countries worldwide over the past decade, contributing to both increased costs and mortality”. Opioid use more than doubled worldwide between 2001–03 and 2011–13, but in an uneven distribution with Canada, Northern Europe and Australia showing similar patterns to that in the US, indicating that patterns of prescription opioid utilisation in these parts of world are similar to those seen in the US during the early stages of the American opioid death epidemic.

It is not entirely clear whether mortality trends in Australasia will necessarily follow the same pattern as in America. According to coronial data, there were 4,102 opioid-related deaths in Australia between 2007 and 2011, about 500 to 600 per annum with a peak of 685 in 2009. In this series, heroin was most frequently reported, with methadone and oxycodone second and third. Tse at the Department of Forensic Medicine, Newcastle, NSW, reported on 81 fentanyl-related deaths between 2010 and 2014. During this period he observed a steady annual increase from one case in 2010 to 38 cases in 2014, mirroring an increase in volume of fentanyl prescriptions in Australia over the same period. A significant majority (79%) of the Newcastle cases injected fentanyl extracted from a patch, suggesting that illicit use was following national prescribing patterns.

In New Zealand it has been estimated that there were 9,142 chronic opioid drug users in 2010 of whom half were not receiving opioid substitution therapy. Based on data from the 2012/2013 New Zealand Health Survey, McFadden estimated that approximately 29,200 persons used opioid or sedative drugs in New Zealand. Between 2009 and 2013, the years for which most recent data are available from Ministry of Health Statistics, there were 200 deaths in New Zealand attributed to narcotic or psychedelic drug poisoning, either of accidental (181 cases) or undetermined (19 cases) intent. Presumably, most of these are opioid related. Between 35 and 47 deaths were reported each year with the peak in 2012 and nadir in 2010. No unequivocal trend was apparent. Among the 200 deaths, 124 (62%) were male, 155 (77.5%) were New Zealand European and 42 (21%) were Māori. Peak age group was in the 40's (28.5%), followed by the 50's (25%) and 30's (24.5%).

As noted, the initial phases of the American rise in opioid deaths appeared to be associated with increased use of prescription opioids and methadone, over a longstanding baseline of illicit drug mortality. Therefore, it was generally held that a significant contributory factor was physician opioid prescribing practice, especially for chronic non-cancer pain. It was considered that this led both to the creation of opioid dependence and addiction, as well as to increasing the availability of prescription medications that might be diverted to the illicit market. Consequently, efforts to change prescribing patterns were initiated. In Staten Island, New York, for example, intensive public health measures including targeted educational programmes for general practitioners and emergency room providers on appropriate guidelines for effective pain management, and opioid prescription appeared to lower mortality. Likewise, an opioid utilisation programme instituted by Massachusetts Blue Cross Blue Shield insurance programme was shown to be effective in reducing opioid prescriptions. Here in New Zealand there have been similar efforts. For example, a campaign at Capital and Coast District Health Board demonstrated a 24% overall decrease in prescriptions for oxycodone. As part of this programme the largest
oxycodone primary care prescribers were identified, and a pharmacist facilitator specifically supported their practices. The programme included campaign posters, education forums and peer review groups. Multidisciplinary pain management education sessions were held for primary health providers. A similar programme was run for secondary care practitioners. Thus, the significance of physician prescribing patterns and appropriate management of pain has been recognised.

Another aspect of the drug death epidemic in the US that may be of relevance to New Zealand is the resurgence of heroin and other illicit opioids in response to changing physician describing practices. Acceleration in the US mortality rate since 2013 has been particularly associated with the appearance of the illicit synthetic opioids fentanyl and its analogues, which significantly increase the lethality of illicit drug preparations. In Cuyahoga County, for example, a 64% increase in total overdose deaths from 2015 to 2016 was associated with a 324% increase in fentanyl. This latter phenomenon has not been apparent in New Zealand so far, although drug mortality data over the past two or three years are not yet available. Unless anecdotal observations and reporting by emergency departments or forensic pathologists who perform the autopsies in overdose cases are made, we may not know we have a trend until it is well underway.

The medical practice environments may be similar in the US and New Zealand, at least in terms of pain management and opioid prescription patterns, but patterns of illicit drug distribution may be quite different. The US shares a long land border with Mexico, a major source of US heroin and over which illicit drugs may be easily imported despite best law enforcement efforts. Reportedly, the primary source of illicit fentanyl in the US is manufactured in China and ordered over the Internet or imported through Canada, which shares an even longer and less closely guarded border than that with Mexico. New Zealand, on the other hand, is an island nation with more easily defended borders, at least as far as illicit drug importation may be concerned. Furthermore, law enforcement measures and techniques may differ between the two nations. Thus, it is not clear whether New Zealand will inevitably follow the American pattern.

On the other hand, there is illicit use of opioid drugs in New Zealand, and opioid deaths are seen. Opioid drug misuse appears to be increasing worldwide, and therefore New Zealand is at risk for an opioid drug death epidemic, whether on the American scale or not. A particular challenge in regard to this is data: how will we know, and how soon will we know, if such an epidemic is developing? Will we miss an opportunity to take early action?

In New Zealand, drug overdose deaths fall under the jurisdiction of the coroner, who ultimately reports cause of death to Births Deaths and Marriages, a process that takes several years from time of death to published statistics. Thus, there are not yet publicly available statistics on opioid overdose deaths for 2014, 2015 or 2016, the same period in which the illicit fentanyl component of the American drug epidemic made its appearance. Individual coroners and pathologists and their consulting toxicology laboratory (ESR) may become aware of an emerging problem, but there is no formal mechanism other than the coronial inquest channel to report their suspicions. In the US, local Medical Examiners and Coroners (ME/C) may provide data to various authorities, and have begun to coordinate with groups responsible for aspects of this public health threat, and at least one model online reporting system has been proposed. Coordination with the state prescription drug monitoring programme has proven useful in Virginia, and in Maryland ME/C data linked to GPS data has been used to coordinate local response to an outbreak of fentanyl-related deaths. The creation of a rapid reporting system, including data from coroners and pathologists, emergency departments and St Johns, on suspected drug overdose deaths in New Zealand might serve as an “early warning” system in order to coordinate a response plan to a developing opioid death epidemic.

In summary, the current epidemic of opioid deaths in the US may be a warning to New Zealand. Although we are not currently experiencing the same rate of opioid deaths as in the US, there are deaths due to opioid drugs. Some of the factors in the American epidemic, such as physician prescribing patterns and the clinical management of pain, are relevant, while others, such as the flood of illicit fentanyl, are not currently
in play. Already action has been taken regarding opioid prescription patterns and pain management. On the other hand, our death reporting system may be inadequate to warn us in a timely fashion of a sudden rise in opioid deaths, or of the introduction of new deadly illicit opioids into our illicit drug use scene. It would behove the New Zealand medical profession to take a leadership role in surveillance of this potentially significant public health problem.

Competing interests:
Nil.

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