

**Clinical toxicology and Drug and Poison Information Centre**

**BC Drug and Poison Information Centre**

**British Columbia**

The most common drug-related generic categories & generic substances from Jan to Aug 2017 were analgesics, sedative/hypnotics/antipsychotics, stimulants and street drugs, cardiovascular drugs, vitamins, hormones and hormone antagonists, dietary supplements/herbals/homeopathic, antihistamines, topical preparations and antimicrobials.

The Poison Information (24-Hour Line) is available: 604-682-5050 for the lower mainland and 1-800-567-8911 for outside lower mainland.

**Differences in Strategies for Reducing Opioid-Overdose Deaths in Canada and States**

Unlike Canada where the overdose-reversal drug naloxone available without a prescription, in 36 US states possession of naloxone without a prescription illegal.

Medically supervised injection facilities in Canada is legally approved; there are few if any in the States.

Rates of criminal-justice involvement remain lower in Canada than rates in the United States [but increasing].<sup>1</sup>

**Reasons for refusing or accepting emergency department-based take-home naloxone in BC**

➤ **Reasons for refusing**

- ✓ Not at risk of overdose
- ✓ Their ED visit was not the right time or place for take-home naloxone.

➤ **Reasons for accepting**

- ✓ Wanted to save the lives of others.

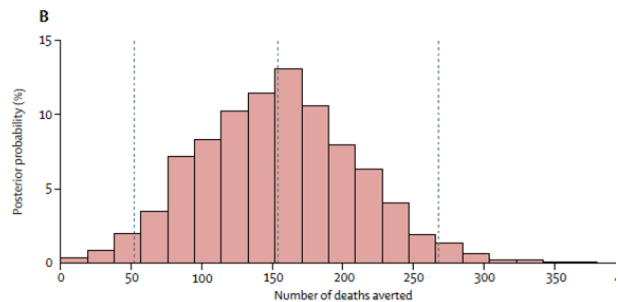
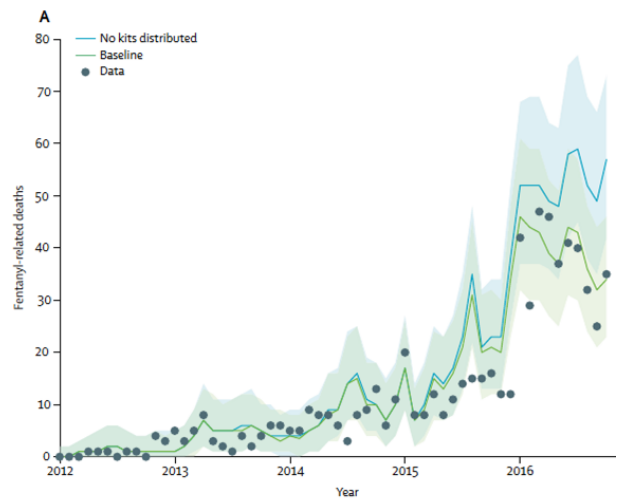
--- Those refusing emergency department-based take-home naloxone may accept elsewhere if referred to appropriate community services for overdose risk education and take-home naloxone distribution.<sup>2</sup>

Estimated number of deaths averted from Jan 1 to Oct 31, 2016, for the retrospective scenarios. The scenarios were: the actual number of take-home naloxone kits that were distributed (baseline); the rate of fentanyl in the supply was the same as in 2015; all the kits distributed in 2016 were instead distributed on Jan 1, 2016; the population of people who use drugs was halved; and the kits were distributed on Jan 1, 2016, and the at-risk population was reduced by a half. Middle line is the median, shaded area is the 50% credible interval, whiskers show the 95% credible interval, and diamonds show the 5% outliers. (figure adopted from Irvine MA, et al.)<sup>3</sup>

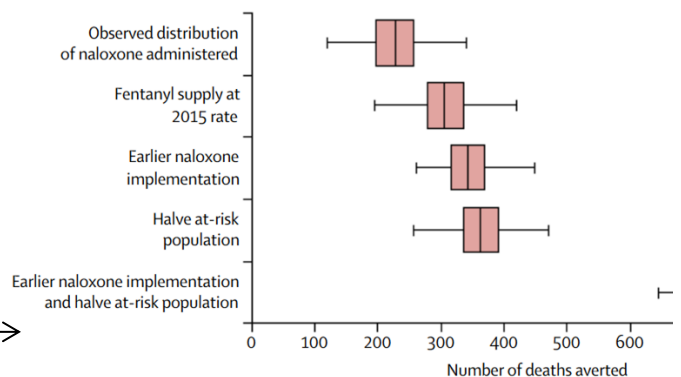
**298 deaths were averted by the take-home naloxone program in BC**

499 ambulance-attended overdoses and 2,121 illicit drug-related deaths (677 [32%] deaths related to fentanyl) were recorded between 2012 and 2016, mostly since January, 2016. In the same period, 19,074 take-home naloxone kits were distributed.

Authors estimated that 298 deaths (95% credible interval [CrI] 91-474) were averted by the take-home naloxone programme. Of these deaths, 226 (95% CrI 125-340) were averted in 2016.



Total naloxone impact on fentanyl-related deaths (A) Comparison of the number of fentanyl-related deaths between the actual distribution of take-home naloxone kits (baseline) and a counterfactual scenario in which no kits were distributed. Shaded area shows the respective 95% credible interval. (B) Estimated number of fentanyl-related deaths averted during the study period due to distribution of take-home naloxone kits. Dashed lines are the median and 95% credible intervals. (figure adopted from Irvine MA, et al.)<sup>3</sup>



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### Fentanyl urine testing in rural BC

In a pilot study, "24 participants completed the urine test and first interview. Among them 4 had a positive fentanyl urine test.

Later, 15 clients completed the second questionnaire, 10 of whom reported introducing a behavior change after testing and the remaining 5 indicated being already engaged in harm reduction practices.

All four clients who tested positive completed the second questionnaire; all but one indicated adopting behaviors towards overdose prevention."<sup>4</sup>

### Hospitalization among street-involved youth who use illicit drugs in Vancouver BC

From January 2005 to May 2016, 1,216 youth participated in the study and 373 (31%) reported hospitalization in the previous 6 months.<sup>5</sup>

#### ➤ The top reported medical reasons for hospital admission were:

- ✓ Mental illness (38%),
- ✓ Physical trauma (13%),
- ✓ Drug-related issues (13%)

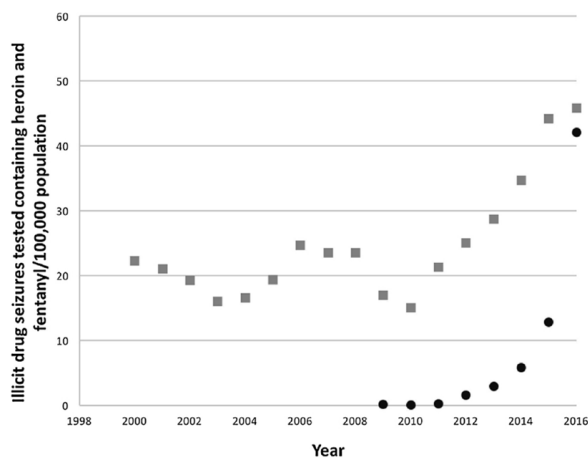
#### ➤ Factors significantly associated with hospitalization were:

- ✓ Past diagnosis of a mental illness
- ✓ Frequent cocaine use
- ✓ Non-fatal overdose (AOR = 1.76; 95% CI 1.37-2.25),
- ✓ Homelessness (AOR = 1.40; 95% CI 1.16-1.68) (all  $p < 0.05$ ).

### Fentanyl and heroin contained in seized illicit drugs and overdose-related deaths in BC

Fentanyl is increasingly being found combined with other opioid and non-opioid illicit drugs. Investigators found the following associations:

- ✓ The number of seized fentanyl samples and total overdose deaths ( $R^2 = 0.97$ )
- ✓ Seized fentanyl and fentanyl-detected overdose deaths ( $R^2 = 0.99$ ),
- ✓ The number of seized heroin samples and total overdose deaths ( $R^2 = 0.78$ ).



Illicit drug seizures tested and containing heroin and fentanyl in British Columbia from 2006 to 2016. \*Data obtained from the Health Canada Drug Analysis Service. Circle=fentanyl, square=heroin (figure adopted from Baldwin N, et al.)<sup>6</sup>

### Willingness to test urine in BC

Willingness of people who inject drugs for drug checking offered within supervised injection services were studied among 180 subjects.<sup>7</sup>

Positive associated with willingness to frequently check drugs at supervised injection services exists for:

- ✓ Female gender (Adjusted Odds Ratio 95% CI = 2.31 (1.20-4.46)),
- ✓ Homelessness (2.36 (1.14-4.86)),
- ✓ Drug dealing (2.16 (1.07-4.33))

### References

1. Wood E. Strategies for Reducing Opioid-Overdose Deaths - Lessons from Canada. *N Engl J Med* 2018;**378**(17):1565-67.
2. Kestler A, Giesler A, Buxton J, et al. Yes, not now, or never: an analysis of reasons for refusing or accepting emergency department-based take-home naloxone. *CJEM* 2018:1-9.
3. Irvine MA, Buxton JA, Otterstatter M, et al. Distribution of take-home opioid antagonist kits during a synthetic opioid epidemic in British Columbia, Canada: a modelling study. *Lancet Public Health* 2018;**3**(5):e218-e25.
4. Mema SC, Sage C, Popoff S, et al. Expanding harm reduction to include fentanyl urine testing: results from a pilot in rural British Columbia. *Harm Reduct J* 2018;**15**(1):19.
5. Chang DC, Rieb L, Nosova E, et al. Hospitalization among street-involved youth who use illicit drugs in Vancouver, Canada: a longitudinal analysis. *Harm Reduct J* 2018;**15**(1):14.
6. Baldwin N, Gray R, Goel A, et al. Fentanyl and heroin contained in seized illicit drugs and overdose-related deaths in British Columbia, Canada: An observational analysis. *Drug Alcohol Depend* 2018;**185**:322-27.
7. Kennedy MC, Scheim A, Rachlis B, et al. Willingness to use drug checking within future supervised injection services among people who inject drugs in a mid-sized Canadian city. *Drug Alcohol Depend* 2018;**185**:248-52.