



**Topic:** Assessing the risk of occupational fentanyl exposures in overdose prevention services (OPS) and safe consumption services (SCS) sites in British Columbia

**Date:** August 2, 2018

**Background:**

- The BC Centre for Disease Control (BCCDC) conducted a quantitative risk assessment of fentanyl exposure for health care workers (HCWs) and peers working in Supervised Consumption Service (SCS) and Overdose Prevention Service (OPS) sites in British Columbia, with some relevance for first responders who may come into contact with fentanyl.
- In July and August 2017, testing was carried out at five Supervised Consumption Service (SCS) and Overdose Prevention Service (OPS) sites, and included Island Health, Interior Health, Northern Health and agencies with SCS/OPS sites.
- At present, there is no established Occupational Exposure Limit (OEL) for fentanyl.
  - With no established OELs, the study adopted a conservative, in-house OEL used by the pharmaceutical industry for inhalation exposure (OEL = 0.1  $\mu\text{g}/\text{m}^3$ ), and another for surface contact (OEL = 1  $\mu\text{g}/100\text{cm}^2$ ). These limits are the lowest and have the highest safety margin of the options considered.
- The study was overseen by Dr. Marcus Lem, Senior Medical Advisor with the BC Centre for Disease Control (BCCDC) and Victor Leung, a certified industrial hygienist with Core Extension Health & Safety Company.
- Objectives of quantitative risk assessment include:
  - Assess potential fentanyl exposures in the personal air spaces of high-risk occupational groups.
  - Assess potential environmental fentanyl exposures in the ambient air within different areas of each participating OPS and SCS facility.
  - Assess the potential for contamination of fentanyl on high-risk surfaces.
  - Offer recommendations to inform OPS, SCS and other health service guidelines.

**Findings:**

- No sites had significant levels of fentanyl detected in the air or on surfaces.
  - Inhalational exposures to fentanyl in pill or powdered form in HCWs were minimal and well below the study's occupational exposure guideline.
  - Surface contamination from crushing, mixing, and melting drugs including fentanyl was mostly localized.
- The study was not explicitly designed to assess exposure to indoor smoking, but instead to more broadly assess aerosol exposure to fentanyl. While still below the OEL, the highest fentanyl air level detected occurred in the context of clients attempting to smoke drugs inside at one site. The site was resampled on another day when no smoking incidents occurred and fentanyl air levels were significantly lower.



- The burning and smoking of the drugs (as opposed to heating the drugs in water for injection) inside a site could increase the risk of fentanyl exposure via inhalation. The study was not specifically designed to assess the safety or risk to staff working at supervised inhalation or smoking facilities.
- Although surface contamination of fentanyl on consumption tables was generally below the study's OEL threshold, it varied widely and exceeded the threshold on one occasion.

**Interpretation of findings:**

*The interpretations and key messages below are those of the analysis team and the BC Centre for Disease Control.*

- Regular crushing, melting and heating of substances for injection does not appear to pose a risk to staff.
- This evaluation was not designed to assess the risk to staff of supervised smoking facilities. It is recommended, however, that the smoking of all illegal drugs should occur outdoors.
- While the findings showed that fentanyl contamination is localized, there is still some detectable amount in the air. It is unknown whether there is accumulation of fentanyl settling from the air on other surfaces within these sites. Further studies should be considered.

**Key Messages:**

- This study confirms that when existing protocols are followed, exposure risk to fentanyl is very low for workers at sites where people are injecting, snorting or orally ingesting drugs.
- Regular crushing, melting and heating of substances for injection do not pose a risk to staff.
- It is recommended that the smoking of all illegal drugs should occur outdoors.

**Next Steps:**

Discussions and consultations with WorkSafeBC, Health Canada and NIOSH continue in regards to occupational exposure limits for fentanyl. As well, findings from a supplementary study that assessed residual fentanyl on surfaces after cleaning with existing cleaning agents currently used in SCS and OPS sites will be disseminated.

**Analysis Team:**

- |                       |                          |
|-----------------------|--------------------------|
| ● Marcus Lem          | ● Brian Beech            |
| ● Tina Chiang         | ● Don Krawciw            |
| ● Victor Leung        | ● Paul Hasselback        |
| ● Stephanie Dubland   | ● Roy Pursell            |
| ● Robyn Koffman       | ● Raymond Li             |
| ● Richard Laing       | ● Rosalind Baltzer Turje |
| ● Anne Morrison       | ● Wendy Stark            |
| ● Benoit Archambeault | ● Le-Ann Dolan           |



- Jordan Cooper
- Aura Lavellee
- Andrew Gray
- Silvina Mema
- Trevor Corneill

- Corinne Dolman
- Mark Gilbert
- Mark Tyndall
- Perry Kendall
- Bonnie Henry