

# Backgrounder for media

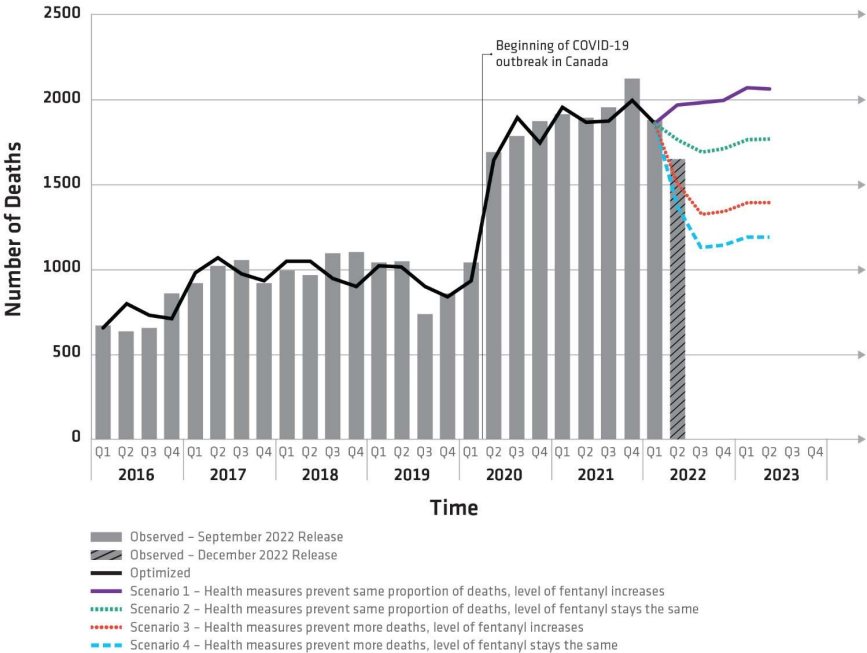
## Modelling projections for opioid-related deaths to June 2023

December 14, 2022





The Public Health Agency of Canada (PHAC) released new modelling projections of the number of opioid-related deaths that may occur over the course of the coming months. The results of the model suggest that, under some scenarios, the **number of opioid-related deaths through to June 2023 may remain high, or may even decrease**, but not to levels seen before the onset of the COVID-19 pandemic.

### Observed and projected opioid-related deaths, Canada, January 2016 to June 2023





## What would be the projected number of deaths under each scenario?



### Scenario 1

	<p>= Health interventions continue to prevent the same proportion of opioid-related deaths.</p>	<p>Projections suggest that opioid-related deaths increase to levels that are slightly higher than those seen in the last year, between approximately 1950 and 2050 deaths quarterly.</p>
	<p>↑ The level of fentanyl in the drug supply is higher than in March 2022.</p>	





### Scenario 2

	<p>= Health interventions continue to prevent the same proportion of opioid-related deaths.</p>	<p>Projections suggest that opioid-related deaths may decrease to levels seen at the onset of the COVID-19 pandemic, between approximately 1700 and 1770 deaths quarterly.</p>
	<p>= The level of fentanyl in the drug supply remains the same as in March 2022.</p>	

### Scenario 3

	<p>↑ Health interventions prevent an increased proportion of opioid-related deaths.</p>	<p>Projections suggest a decrease in opioid-related deaths but not to levels seen before the onset of the COVID-19 pandemic, between approximately 1300 and 1500 deaths quarterly.</p>
	<p>↑ The level of fentanyl in the drug supply is higher than in March 2022.</p>	

#### Scenario 4

	 <p>Health interventions prevent an increased proportion of opioid-related deaths.</p>	Projections suggest a further decrease in opioid-related deaths but not to levels seen before the onset of the COVID-19 pandemic, between approximately 1150 and 1350 deaths quarterly.
	 <p>The level of fentanyl in the drug supply remains the same as in March 2022.</p>	

### Which scenario are we currently trending towards to in Canada?

Based on the [most recent national data](#) from December 2022, we are trending between Scenario 2 and Scenario 3, with opioid-related deaths potentially decreasing. In these scenarios, deaths range from approximately 1300 to 1770 per quarter.

### What are the levels seen before the onset of the COVID-19 pandemic?

Based on [national surveillance data](#) from January 2019-March 2020, the period immediately prior to the COVID-19 pandemic, opioid-related deaths ranged from approximately 750 to 1,050 per quarter.

### Can we use these projections for specific regions or provinces/territories?

This model was developed at a national level only and cannot be used for simulations at a provincial or territorial level.

### How does this compare to the [last modelling projections](#) that were released in December 2021?

The most recent trends are similar to those released in June 2022. To better align the modelled results with observed data, the December 2022 simulations use a higher proportion of deaths prevented by health interventions beginning in 2022, as availability and accessibility of services

may have increased over the later course of the COVID-19 pandemic, thus lowering the level of people dying of an overdose in comparison to the December 2021 simulations.

## What do you mean by “health interventions to reduce opioid-related deaths”?

Given that models are simplifications of real-life systems, this model does not include specific health interventions to prevent opioid-related deaths. Rather, we include a value representing the combination of a wide range of efforts to reduce opioid-related deaths, such as:

- **prevention** e.g., public education, reduction of stigma around drug use and its impact on people who are using drugs
- **harm reduction** e.g., supervised consumption sites, overdose prevention sites, safer supply, naloxone access/distribution and training
- **treatment** e.g., opioid agonist therapy

In the model, the impact of these efforts is represented as the proportion of opioid-related deaths they may be preventing together.

## How are fentanyl levels measured? What data do you use in relation to these levels?

Similar to how we represent health interventions in the model, we include a value representing the level of fentanyl in the drug supply. PHAC used data from Health Canada’s [Drug Analysis Service](#) to create this value.

## Why are you doing modelling projections for the opioid-related deaths? Why is it important?

While models have recently been widely used in Canada in relation to infectious diseases, they can also be applied to other public health issues, such as the opioid overdose crisis.

While models cannot predict what **will** happen, they can help us understand what **might** happen in certain scenarios. This can help us plan and take action.

## What kind of model is used in this case and how does it work?

PHAC developed a dynamic simulation model of opioid-related deaths. Models use mathematical equations to estimate how many cases of a disease may occur in the coming

days, weeks, months or years. They help researchers simulate real-world possibilities in a virtual environment.

This model simulates how opioid-related deaths across Canada may unfold over the coming months, based on the level of fentanyl in the drug supply and the proportion of opioid-related deaths that are prevented by health interventions. PHAC uses data and information in the simulation model from many sources, including data from Statistics Canada, the Canadian Institute for Health Information, PHAC, Health Canada, the provinces and territories, and peer-reviewed literature.

## **Are the impacts of COVID-19 public health measures, such as physical distancing or reducing gathering sizes, reflected in these projections?**

The impact of these COVID-19 public health measures is not accounted for in the model directly.

Rather, the model accounts for the COVID-19 context by changing the value of the proportion of opioid-related deaths that are prevented by health interventions within the context of the pandemic.

This value can be influenced by factors related to the pandemic such as isolation, causing people to use drugs alone, or the limited availability or accessibility of health and social services for people who use drugs, including life-saving harm reduction initiatives and treatment.

In the December 2022 projections, Scenarios 1 and 2 assumed that health interventions prevented 40% of opioid-related deaths, which aligns with the observed data in early 2022. Scenarios 3 and 4 assumed that health interventions prevented 60% of deaths, as accessibility and availability of services may have increased since the beginning of the COVID-19 pandemic.

## **How often are these projections updated?**

As opioid-related harms have changed significantly over the past years, this model will be updated twice a year.

## **How do I learn more about the methodology behind this model or fact check my news story?**

[Contact us](#) and we will connect you with experts to answer your questions.

## Related Links

- [Modelling opioid-related deaths during the COVID-19 outbreak](#)