



# “Desflurane Needs to Des-appear” – Reducing Use of a Harmful Anesthetic Gas Across Newfoundland and Labrador

## Choosing Wisely Canada Recommendation

Don't use desflurane when other anesthetic drugs and techniques are equally effective and less harmful to the environment.

## Practice Points

1. Choosing Wisely NL/Quality of Care NL have partnered with anesthesiologists to reduce the use of desflurane across the province.
2. Desflurane is known to be about 2,500 times more warming than carbon dioxide and emits about 25 times more greenhouse gases than sevoflurane, a commonly used alternative gas.

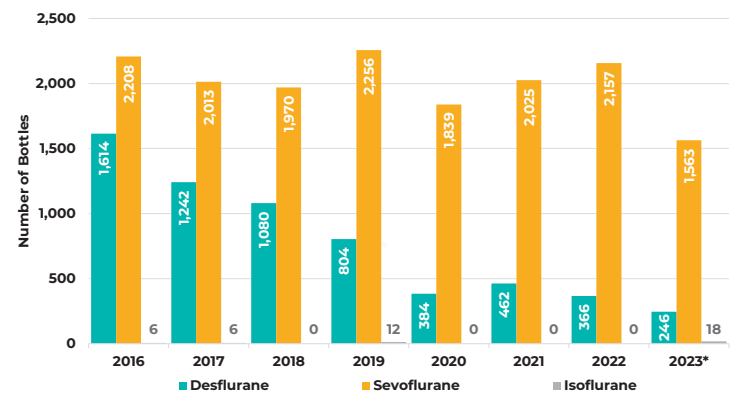
## Methods/Data

1. A literature review of the current state of desflurane use across Canada, and globally, was conducted.
2. Data were obtained to determine desflurane purchasing trends in NL and each of its health zones. Communication with anesthesiologists and health administrators revealed an existing informal Eastern Zone initiative to reduce desflurane use based on its detrimental environmental effects. The Chief of Anesthesia, Eastern Zones, had desflurane removed from anesthesia gas machines in operating rooms in an effort to reduce its use by creating additional steps to retrieve the gas and load it into the machine.
3. Purchasing trends are being used to inform target zones/facilities and aid in roll out measures. Currently, further interventions are being co-designed with anesthesiologists and anesthesiology administrators to target two other health zones – Western Zone and Labrador-Grenfell Zone.

## Results

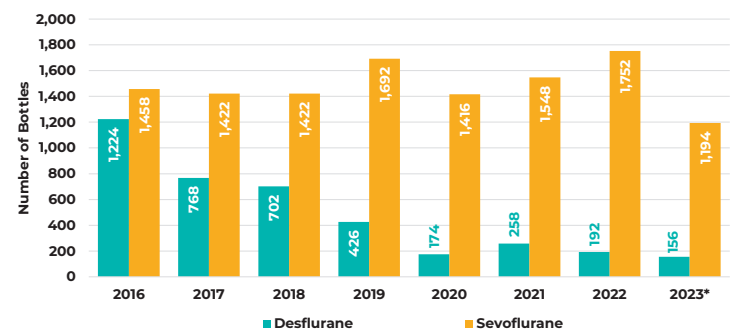
- Figure 1 shows trends of desflurane purchasing across NL as compared to sevoflurane.
- Figure 2 provides a more detailed breakdown of purchasing trends of NL Health Services by health zone.

- Purchasing of desflurane in Eastern Zone has been steadily declining from 2016–2023, while Central Zone has maintained low levels of purchasing over the same period.
- Central Zone and Labrador-Grenfell Zone have continued to purchase desflurane at levels similar to sevoflurane and have not seen the same levels of decline in use as observed in other zones.



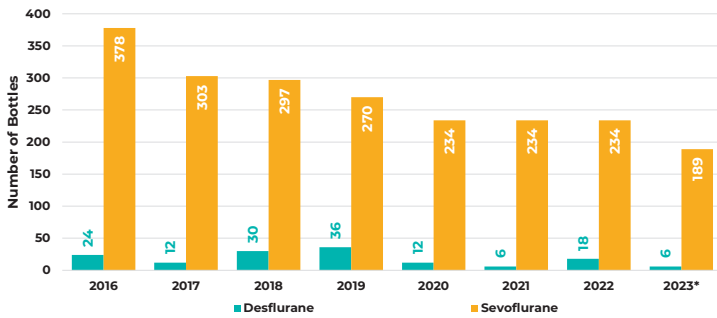
\*data collected up to October 2023

Figure 1. Annual Anesthetic Gas Purchasing Trends for the Province of NL from 2016–2023



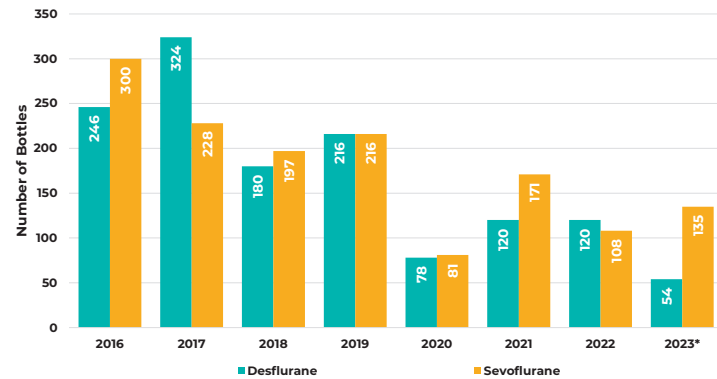
\*data collected up to October 2023

Figure 2A. Annual Anesthetic Gas Purchasing Trends for Eastern Health from 2016–2023



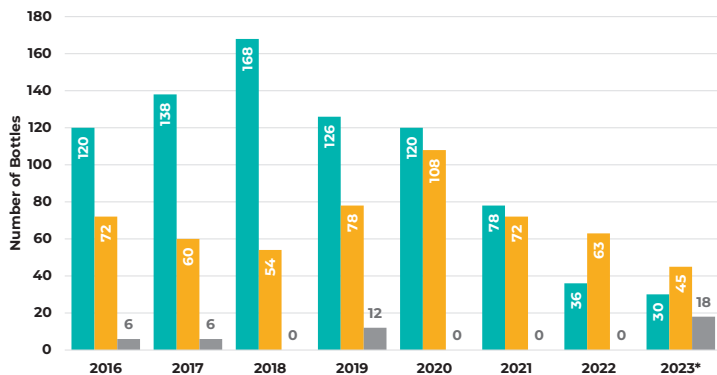
\*data collected up to October 2023

**Figure 2B. Annual Anesthetic Gas Purchasing Trends for Central Health from 2016–2023**



\*data collected up to October 2023

**Figure 2C. Annual Anesthetic Gas Purchasing Trends for Western Health from 2016–2023**



\*data collected up to October 2023

**Figure 2D. Annual Anesthetic Gas Purchasing Trends for Labrador-Grenfell Health from 2016–2023**

## Conclusions

1. Concerns raised about a past global shortage of sevoflurane, a common alternative gas, have led some departments to want to maintain stock of desflurane as a back-up alternative in the event of another future shortage.
2. Desflurane use in NL has been declining steadily over the past several years, but to implement a ban requires significant coordination amongst various zones. A complete ban may not be possible without a plan in place for a readily available safe alternative.