

REUSING IPRATROPIUM INHALERS

PEDIATRIC EMERGENCY DEPARTMENT



PROBLEM

Ipratropium inhalers used in the pediatric emergency department are discarded after single patient use, often with significant medication remaining; a common issue experienced by hospitals across Canada.

OPPORTUNITY

The pediatric pharmacy team at Surrey Memorial Hospital implemented a **safe Ipratropium inhaler reuse program** after recognizing that most inhalers were being discarded after only a few doses, despite containing substantial remaining medication. The pediatric emergency department alone uses about **1,200 ipratropium inhalers per year**; staff collected over 1,000 partially used inhalers before the project began.

PROCESS

To enable safe reuse, the team developed a process with infection prevention and control (IPAC). Since pediatric patients use spacer chambers, the inhaler does not make contact with the mucous membranes, making the reuse process acceptable from IPAC.

The current workflow involves:

- nurses placing the used inhalers in a **"return to pharmacy" bin**,
- pharmacy technicians collecting the bins, wiping the contents with alcohol, disassembling the inhalers and weighing the canisters without the sleeves and mouth pieces,
- tracking reuse dose by placing a colour-coded sticker on each canister,
- cleaning the components with soap-and-water before reassembling , and
- returning the reprocessed inhalers back into circulation for patient care.

6 is the current reuse limit before final disposal.
The continued collection of weight data will help to inform future reuse limits!

DATA COLLECTION

Since Ipratropium inhalers in Canada do not have built in doses counters, the pharmacy team is collecting canister weight data to ensure adequate medication remains. Weight tracking is also being used to estimate average weight up to 100 doses, generating valuable data to support future reuse programs and expansion.

OUTCOMES

Since launching the program, the unit has not needed to order new inhalers and may not need to for several years, demonstrating substantial cost and waste reduction benefits. Implementation efforts required collaboration with nursing, pharmacy, IPAC, and IT staff to create a streamlined workflow for reusing inhalers.

For more resources, view the sustainable pharmacy and prescribing page at <https://cascadescanada.ca/activation-areas/pharmacy-and-prescribing/>

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