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Montreal, September 14 2022

Lynn Hebert

Administrative Technician CPDP and  
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Dear Mrs Hebert

**Impact report Alaris PK Syringe Anesthesia Pumps**

We kindly requested the purchase of 2 new anesthesia pumps for use at the Montreal Children's Hospital. Over the past 18 months the pumps were used to deliver safe and effective intravenous anesthesia for children, in particular patients requiring neuromuscular monitoring. These pumps represent a quantum leap in the delivery of intravenous anesthesia currently not used in pediatric anesthesia in Canada, but are otherwise successfully used in large parts of the world.

These pumps are special in a way that they allow the precise delivery of anesthesia drugs such as propofol or other strong narcotics to patients undergoing general anesthesia or deep sedation. They helped anesthetists at the Montreal Children's Hospital to provide safe care in the most adverse conditions of the pandemic. You may know, that these pumps operate in a very sophisticated way helping to reliably administer anesthesia drugs effectively to children of varying sizes and weights. Over or underdosing of propofol with adverse effects was common in these children frequently leading to prolonged recovery or even potential awareness.

The introduction of 2 new pumps using a target controlled infusion (TCI) to the Montreal Children's Hospital has dramatically changed this situation. The TCI systems use validated pharmacokinetic mathematical models to precisely adjust the propofol infusion to achieve the programmed effect-site target. Depth of anesthesia is altered by changing the programmed plasma concentration. This automatically and reliably leads to the administration of the correct dose of propofol in children of all sizes. These pumps are exceptionally intuitive and easy to use, require minimal maintenance or calibration.

The pumps are now widely accepted and enthusiastically used by anesthesia staff and respiratory technicians. They have resulted in a substantial reduction of propofol use per patient (1 propofol 50ml vial on

average) while maintaining depth of anesthesia and exceptional hemodynamic stability. Patients have benefitted from a smooth and comfortable recovery after anesthesia minimizing stress, anxiety for the children and have also been widely praised by parents and other staff.

We believe that using this new TCI pump will become the new standard of care for the anesthesia delivery in children. We are, therefore, grateful for the generous support for the purchase of these pumps and would like to sincerely express our thanks to the generous donations. We hope that in the future we will be able to afford further pumps in order to extend this exceptional anesthesia care to all children that would benefit from this new technique.

With best wishes kind regards

Best wishes



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