Optimizing opioid prescribing practices following minimally invasive lung resections through a structured quality improvement process

Abstract document:

Canada is experiencing an opioid crisis; surgeons must balance pain control with potential harm. The Canadian Association of Thoracic Surgeons (CATS) recently published guidelines regarding opioid prescriptions. For minimally invasive (VATS) lung resections, 120 morphine milligram equivalents (MME) is recommended. We undertook a quality improvement (QI) project to optimize opioid prescribing following VATS lung resections at our centre.

A linkage of prospective institutional and provincial databases was developed. Opioid-naïve patients were included. In 12 months pre-intervention, 173 patients were identified; average discharge prescriptions were 158 MME, with 51% exceeding guideline quantities. This confirmed room for improvement. Within a formal QI framework, two interventions were selected: incorporation of CATS guidelines into our postoperative care pathway, and development of a patient information handout regarding opioids. The outcome measure was average MME of discharge prescriptions, process measure was percentage of prescriptions exceeding guidelines, and balancing measure was opioid refills within 90 days of discharge. Data was analyzed using control charts with two-week subgroups, and traditional statistics comparing pre- and post-intervention groups.

In 12 months post-intervention, 175 patients were identified. Average discharge prescriptions were 100 MME (vs. 158 MME; $p = 0.0003$) with 19% (vs. 51%; $p < 0.0001$) of prescriptions exceeding guidelines. This equates to an average reduction of 14.5 mg oral hydromorphone per patient. Control charts demonstrated special cause variation corresponding with the intervention, and system stability existed post-intervention (Figures 1, 2). There was no statistically significant difference in opioid refill prescriptions following intervention; control charts confirmed no special cause variation in refills associated with the intervention.

The use of a formal QI framework incorporating CATS opioid guidelines was associated with a significant reduction in the average dose of opioids prescribed at discharge, improved practitioner adherence to prescribing guidelines, and no increase in opioid refill prescriptions following VATS lung resections.