RURAL SURGICAL AND OBSTETRICAL FACILITY LEVEL OUTCOMES FOR INDEX PROCEDURES:

A RETROSPECTIVE COHORT STUDY (2016-2021)

MAIN TAKEWAYS

The data from this study suggests the surgical care provided at RSON sites is of **high quality**.

One in three procedures (34 %) were performed by Family Physicians with Enhanced Surgical Skills.

We found evidence that the **quality of care at rural facilities is at least as good as that of referral facilities in rural BC** for colonoscopy, hernia repair and appendectomy.

BACKGROUND & OBJECTIVES:

Using retrospective observational data we compared the adverse outcomes of selected low-acuity surgical procedures to show whether the outcomes of surgical care at rural facilities is comparable to that of larger referral facilities. We focused on colonoscopy, hernia repair, appendectomy and Cesarean birth, as they are most common to rural facilities in British Columbia (BC).

METHODS:

We analyzed population-level data for patients admitted to one of seven participating Rural Surgical Obstetrical Network (RSON) sites and corresponding referral facilities between January 1st 2016 and March 31st 2021. Adjusted odds ratios and their corresponding 95% confidence intervals were obtained between facility types for each procedure. We used tests of non-inferiority on the adjusted odds ratios as well as additional sensitivity analyses using 'worst-case' odds-ratios to account for unmeasured confounding.

RESULTS:

During the study period,

Colonoscopies	Hernia Repairs	Appendectomies	C-Sections
10, 559	**999**	**136**	**937**

were performed at RSON hospitals.

The proportion of patients from RSON communities who were able to have their procedures done locally increased between 2016 and 2021, with absolute differences between 5 % (hernia repair) and 14 % (appendectomy). **Proportion of patients served locally is a key quality indicator for rural health services.**

Complication rates for each index procedure were lower at RSON hospitals compared to referral sites, with absolute differences ranging from 0.3 % for Cesarean section to 3.9 % for appendectomy.

As expected, comorbidity levels were on-average higher at referral sites compared to RSON hospitals. However, this was taken account of in the analysis.

We have strong evidence in favour of lower complication rates for colonoscopy patients across various levels of patient risk. Additionally, we have evidence in favour of a comparable complication rates between rural and referral facilities for appendectomy and hernia repair patients. We show that complication rates for cesarean delivery patients at rural sites are similar to referral patients, as well as having similar proportions of emergency procedures and other comorbidities.

INTERPRETATION:

We found evidence of lower complications for colonoscopies, appendectomies and hernia repairs at rural facilities. Despite no statistical significance, Cesarean birth also exhibited lower adjusted odds of adverse outcome at rural facilities compared to larger referral sites. These findings are an important step towards documenting rural specific outcomes and creating attendant benchmarks for rural practice.

DOI:

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Rural Surgical and Obstetrical Networks

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