

Supplemental digital content 3: Additional text for methods.

*Study design, data sources, setting and participants*

Members of the population of Manitoba excluded from the administrative data repository include members of the Armed forces, the Royal Canadian Mounted Police and inmates in federal penitentiaries. Physician service claims are recorded in International Classification of Diseases (ICD) version 9-CM with 3 digits. Hospital discharge abstracts were recorded in ICD9-CM until March 31, 2004 and subsequently in ICD10-CA. All ICD digits and up to 25 diagnoses are coded in hospital discharge abstracts. Duplicate records were removed in all databases before and after each merging of records. For both obstructive sleep apnea and control patients, when multiple surgeries occurred within an admission only the first surgery was included because the outcomes could only be assigned to a hospital admission and not to a specific date. All anesthesia care in Manitoba is provided exclusively by physician anesthesiologists working with patients in a one to one ratio, with or without a trainee.

*Predictor variables*

For the admission to an intensive care unit at the time of surgery predictor variable, admissions to intensive care on the day of surgery were considered postoperative admissions and excluded from this risk factor. Only patients documented to be in an intensive care unit the day before surgery and still in the intensive care unit on the day of surgery were assigned this risk factor. This ensured elective postoperative intensive care unit admission (due to particularly high risk surgery on high risk patients) was not misclassified as a preoperative risk factor.

The modified revised cardiac risk index score was calculated from international classification of diseases codes in physician service claims and hospital discharge abstracts. It differed from the published version in its use of administrative data definitions of the relevant comorbidities and the replacement of the high-risk surgery group by major surgery as defined in this study. The Charlson comorbidity index was calculated from the hospital discharge abstract associated with the surgical procedure. The programming used excluded complications and only applied comorbidities towards the calculation of the Charlson index and the revised cardiac risk index.