**Supplemental Table 1** – Validated ICD-10-CM and CCI Coding Used for Analysis

**Supplemental Table 2** – CCI Coding Excluded from Analysis

**Supplemental Table 3** – STROBE Statement

**Supplemental Table 1 – Validated ICD-10 and CCI Coding Used for Analysis**

|  |  |  |
| --- | --- | --- |
| **ICD-10-CA Diagnostic Coding** | | |
| **K50.X** | Crohn’s disease (regional enteritis) including granulomatous enteritis | |
| K50.0 | Crohn’s disease of the small intestine | |
| K50.1 | Crohn’s disease of the large intestine | |
| K50.8 | Crohn’s disease of the small and large intestine | |
| K50.9 | Crohn’s disease unspecified (regional enteritis NOS) | |
| **CCI – Resective Surgery Coding** | | |
| **1.NK.87**  1.NK.87.DA  1.NK.87.LA  1.NK.87.DN  1.NK.87.RE  1.NK.87.DP  1.NK.87.RF  1.NK.87.DX  1.NK.87.TF  1.NK.87.DY 1.NK.87.TG | | **Excision partial, small intestine**  Simple excision, laparoscopic  Simple excision, open  Enterocolostomy anastomosis, laparoscopic  Enterocolostomy anastomosis, open  Enteroenterostomy anastomosis, laparoscopic  Enteroenterostomy anastomosis, open  Stoma formation with distal closure, laparoscopic  Stoma formation with distal closure, open  Stoma formation with mucous fistula, laparoscopic  Stoma formation with mucous fistula, open |
| **1.NM.87**  1.NM.87.DA  1.NM.87.LA  1.NM.87.DF  1.NM.87.RN  1.NM.87.DE  1.NM.87.RD  1.NM.87.DN  1.NM.87.RE  1.NM.87.DX  1.NM.87.TF  1.NM.87.DY  1.NM.87.TG | | **Excision partial, large intestine**  Simple excision, laparoscopic  Simple excision, open  Colocolostomy anastomosis, laparoscopic  Colocolostomy anastomosis, open  Colorectal anastomosis, laparoscopic  Colorectal anastomosis, open  Enterocolostomy anastomosis, laparoscopic  Enterocolostomy anastomosis, open  Stoma formation and distal closure, laparoscopic  Stoma formation and distal closure, open  Stoma formation with mucous fistula, laparoscopic  Stoma formation with mucous fistula, open |
| **1.NQ.87**  1.NQ.87.LA  1.NQ.87.DA  1.NQ.87.RD  1.NQ.87.DE  1.NQ.87.TF  1.NQ.87.DX | | **Excision partial, rectum** (includes proctocolectomy, procto-sigmoidectomy, pull through, rectosigmoidectomy, anterior resection)  Closure by apposition, open  Closure by apposition, laparoscopic  Colorectal anastomosis, open  Colorectal anastomosis, laparoscopic  Colostomy with Hartman or submucosal fistula, open  Colostomy with Hartman or submucosal fistula, laparoscopic |
| **1.NM.89**  1.NM.89.DF  1.NM.89.RN  1.NM.89.DX  1.NM.89.TF | | **Excision total, large intestine**  Ileorectal anastomosis, laparoscopic  Ileorectal anastomosis, open  Stoma formation with distal closure, laparoscopic  Stoma formation with distal closure, open |
| **1.NM.91**  1.NM.91.DF  1.NM.91.RN  1.NM.91.DE  1.NM.91.RD  1.NM.91.DN  1.NM.91.RE  1.NM.91.DX  1.NM.91.TF  1.NM.91.DY  1.NM.91.TG | | **Excision radical, large intestine** (including en bloc resection)  Colocolostomy anastomosis, laparoscopic  Colocolostomy anastomosis, open  Colorectal anastomosis, laparoscopic  Colorectal anastomosis, open  Enterocolostomy anastomosis, laparoscopic  Enterocolostomy anastomosis, open  Stoma formation with distal closure, laparoscopic  Stoma formation with distal closure, open  Stoma formation with mucous fistula, laparoscopic  Stoma formation with mucous fistula, open |
| **1.NQ.89**  1.NQ.89.SF  1.NQ.89.KZ  1.NQ.89.GV  1.NQ.89.SF  1.NQ.89.KZ  1.NQ.89.RS  1.NQ.89.LH  1.NQ.89.AB  1.NQ.89.RS  1.NQ.89.LH | | **Excision total, rectum**  Coloanal anastomosis, abdominal anterior approach  Coloanal anastomosis, abdominoperineal approach  Coloanal anastomosis, combined endoscopic approach  Pouch formation, abdominal anterior approach  Pouch formation, abdominoperineal approach  Stoma formation with distal closure, anterior approach  Stoma formation with distal closure, abdominoperineal  Stoma formation with distal closure, combined endoscopic  Continent ileostomy formation, anterior approach  Continent ileostomy formation, abdominoperineal approach |

**Exploratory Analysis (codes not validated)**

|  |  |
| --- | --- |
| **Stricturoplasty or Stricture Dilation** | |
| **1.NK.80**  1.NK.80.DA  1.NK.80.LA | **Repair, small intestine** (including stricturoplasty, dewebbing, duodenoplasty, enterorrhaphy, jejunoplasty, small intestinal oversew, reinforcement, duodenal atresia repair)  Appositional repair, laparoscopic  Appositional repair, open |
| **1.NM.80**  1.NM.80.DA  1.NM.80.LA | **Repair, large intestine** (including stricturoplasty, colorrhaphy, inversion diverticulum of large intestine)  Appositional repair, laparoscopic  Appositional repair, open |

**Supplemental Table 2 – CCI Coding Excluded from Analysis**

|  |  |
| --- | --- |
| **1.NK.77**  1.NK.77.EN  1.NK.77.RR | **Bypass with exteriorization, small intestine** (enterostomy, ileostomy)  End enterostomy, laparoscopic  End enterostomy, open |
| **1.NM.77**  1.NM.77.DY  1.NM.77.EP  1.NM.77.RS | **Bypass with exteriorization, large intestine** (colostomy/resiting)  Stoma formation with creation of mucous fistula  Colostomy, laparoscopic  Colostomy, open |
| **1.NP.86**  1.NP.86.MB  1.NP.86.ME  1.NP.86.MH  1.NP.86.MQ  1.NP.86.MR  1.NP.86.MT | **Closure of fistula, small and large intestine**  Fistula terminating at skin  Fistula terminating in abdominal cavity  Fistula terminating in genital tract  Fistula terminating in thoracic cavity  Fistula terminating in urinary tract  Fistula traveling through multiple cavities |
| **1.NQ.86**  1.NQ.86.MB  1.NQ.86.ME  1.NQ.86.MH  1.NQ.86.MR | **Closure of fistula, rectum**  Fistula terminating at skin  Fistula terminating in abdominal cavity  Fistula terminating in genital tract  Fistula terminating in urinary tract |
| **1.NT.86**  1.NT.86.MB  1.NT.86.ME | **Closure of fistula, anus**  Open approach, fistula terminating at skin  Open, excisional for fistula terminating in abdominal cavity |
| **1.NK.50**  1.NK.50.BA-BD  1.NK.50.BA-NR | **Dilation, small intestine**  Endoscopic with balloon dilator  Endoscopic with stent insertion |
| **1.NM.50**  1.NM.50.BA-BD  1.NM.50.BA-NR | **Dilation, large intestine**  Endoscopic with balloon dilator  Endoscopic with stent insertion |
| **1.NK.80**  1.NK.80.DA  1.NK.80.LA | **Repair, small intestine** (including stricturoplasty, dewebbing, duodenoplasty, enterorrhaphy, jejunoplasty, small intestinal oversew, reinforcement, duodenal atresia repair)  Appositional repair, laparoscopic  Appositional repair, open |
| **1.NM.80**  1.NM.80.DA  1.NM.80.LA | **Repair, large intestine** (including stricturoplasty, colorrhaphy, inversion diverticulum of large intestine)  Appositional repair, laparoscopic  Appositional repair, open |
| **1.NK.52**  1.NK.52.DA  1.NK.52.DA-TS  1.NK.52.LA | **Drainage, small intestine** (including decompression, dilation with drainage, enterotomy NOS, and insertion of drainage tube)  Aspiration, laparoscopic  Aspiration, laparoscopic /decompression tube in-situ  Aspiration, open approach |
| **1.NM.52**  1.NM.52.DA  1.NM.52.LA  1.NK.52.LA-TS  1.NM.52.HA-TS | **Drainage, large intestine** (including cecotomy, colostomy NOS, decompression with dilation of IC valve, decompression of large intestine, dilation with drainage, insertion of drainage tube)  Aspiration, laparoscopic  Aspiration, open  Aspiration, open, leaving drainage/decompression tube in-situ  Percutaneous cecostomy |
| **1.OT.52**  1.OT.52.DA  1.OT.52.LA | **Drainage, abdominal cavity**  Laparoscopic approach  Open approach |
| **1.NQ.84**  1.NQ.84.DA  1.NQ.84.LA | **Construction or reconstruction rectum**  Laparoscopic approach  Open approach |

**Supplemental Table 3 – STROBE Statement**

**STROBE 2007 (v4) checklist of items to be included in reports of observational studies in epidemiology\***

**Checklist for cohort, case-control, and cross-sectional studies (combined)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Section/Topic** | Item # | Recommendation | Reported on page # |
| **Title and abstract** | 1 | (*a*) Indicate the study’s design with a commonly used term in the title or the abstract | 1, 4 |
| (*b*) Provide in the abstract an informative and balanced summary of what was done and what was found | 4, 5 |
| Introduction | | |  |
| Background/rationale | 2 | Explain the scientific background and rationale for the investigation being reported | 6, 7 |
| Objectives | 3 | State specific objectives, including any pre-specified hypotheses | 7 |
| Methods | | |  |
| Study design | 4 | Present key elements of study design early in the paper | 8-10 |
| Setting | 5 | Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection | 8 |
| Participants | 6 | (*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up  *Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls  *Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants | 8, 10 |
| (*b*)*Cohort study*—For matched studies, give matching criteria and number of exposed and unexposed  *Case-control study*—For matched studies, give matching criteria and the number of controls per case | N/A |
| Variables | 7 | Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable | 9, 10 |
| Data sources/ measurement | 8\* | For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group | 8-10 |
| Bias | 9 | Describe any efforts to address potential sources of bias | 10 |
| Study size | 10 | Explain how the study size was arrived at | 8, 10 |
| Quantitative variables | 11 | Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why | 10, 11 |
| Statistical methods | 12 | (*a*) Describe all statistical methods, including those used to control for confounding | 10, 11 |
| (*b*) Describe any methods used to examine subgroups and interactions | 11 |
| (*c*) Explain how missing data were addressed | N/A |
| (*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed  *Case-control study*—If applicable, explain how matching of cases and controls was addressed  *Cross-sectional study*—If applicable, describe analytical methods taking account of sampling strategy | N/A |
| (*e*) Describe any sensitivity analyses | 11 |
| **Results** | | |  |
| Participants | 13\* | (a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed | 12 |
|  |  | (b) Give reasons for non-participation at each stage | N/A |
|  |  | (c) Consider use of a flow diagram | Figure 1 |
| Descriptive data | 14\* | (a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders | 12, 14, 29-30 |
|  |  | (b) Indicate number of participants with missing data for each variable of interest | 31 |
|  |  | (c) *Cohort study*—Summarise follow-up time (eg, average and total amount) | N/A |
| Outcome data | 15\* | *Cohort study*—Report numbers of outcome events or summary measures over time | 13 |
|  |  | *Case-control study—*Report numbers in each exposure category, or summary measures of exposure | N/A |
|  |  | *Cross-sectional study—*Report numbers of outcome events or summary measures | N/A |
| Main results | 16 | (*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included | 12-15 |
|  |  | (*b*) Report category boundaries when continuous variables were categorized | 12-15 |
|  |  | (*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period | N/A |
| Other analyses | 17 | Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses | 14-15 |
| **Discussion** | | |  |
| Key results | 18 | Summarise key results with reference to study objectives | 16 |
| Limitations | 19 | Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias | 20-21 |
| Interpretation | 20 | Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence | 21 |
| Generalisability | 21 | Discuss the generalisability (external validity) of the study results | 21 |
| **Other information** | | |  |
| Funding | 22 | Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based | 2 |

\*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

**Note:** An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.