Supplementary Digital Content 1: Table of general surgical procedures identified by common procedural terminology codes that were included in the study cohort and their total number and percentage

|  |  |  |  |
| --- | --- | --- | --- |
| Common Procedural Terminology Codes Code | Description | Procedure Category | N (%) |
| 49203 | Exc abd tum 5 cm or less | Abdominal Excision | 66 (0.1) |
| 49204 | Exc abd tum over 5 cm |
| 49205 | Exc abd tum over 10 cm |
| 49000 | Exploration of abdomen | Abdominal Exploration | 68 (0.1) |
| 49002 | Reopening of abdomen |
| 60540 | Explore adrenal gland | Adrenalectomy | 42 (0.1) |
| 60650 | Laparoscopy adrenalectomy |
| 44950 | Appendectomy | Appendectomy | 6,021 (8.5) |
| 44960 | Appendectomy |
| 44970 | Laparoscopy appendectomy |
| 43644 | Lap gastric bypass/roux-en-y | Bariatric Surgery | 2,015 (2.9) |
| 43645 | Lap gastr bypass incl smll i |
| 43770 | Lap place gastr adj device |
| 43772 | Lap rmvl gastr adj device |
| 43774 | Lap rmvl gastr adj all parts |
| 43775 | Lap sleeve gastrectomy |
| 43845 | Gastroplasty duodenal switch |
| 43846 | Gastric bypass for obesity |
| 43848 | Revision gastroplasty |
| 43860 | Revise stomach-bowel fusion |
| 19020 | Incision of breast lesion | Breast Excision | 12,808 (18.1) |
| 19110 | Nipple exploration |
| 19120 | Removal of breast lesion |
| 19125 | Excision breast lesion |
| 19300 | Removal of breast tissue |
| 19301 | Partial mastectomy |
| 19302 | P-mastectomy w/ln removal |
| 19303 | Mast simple complete |
| 19304 | Mast subq |
| 19305 | Mast radical |
| 19307 | Mast mod rad |
| 47562 | Laparoscopic cholecystectomy | Cholecystectomy | 16,363 (23.1) |
| 47563 | Laparo cholecystectomy/graph |
| 47564 | Laparo cholecystectomy/explr |
| 47600 | Removal of gallbladder |
| 47605 | Removal of gallbladder |
| 47610 | Removal of gallbladder |
| 44140 | Partial removal of colon | Colorectal Surgery | 1,079 (1.5%) |
| 44141 | Partial removal of colon |
| 44143 | Partial removal of colon |
| 44144 | Partial removal of colon |
| 44145 | Partial removal of colon |
| 44146 | Partial removal of colon |
| 44150 | Removal of colon |
| 44155 | Removal of colon/ileostomy |
| 44157 | Colectomy w/ileoanal anast |
| 44158 | Colectomy w/neo-rectum pouch |
| 44160 | Removal of colon |
| 44188 | Lap colostomy |
| 44204 | Laparo partial colectomy |
| 44205 | Lap colectomy part w/ileum |
| 44206 | Lap part colectomy w/stoma |
| 44207 | Lap colectomy/coloproctostomy |
| 44208 | Lap colectomy/coloproctostomy |
| 44210 | Laparo total proctocolectomy |
| 44211 | Lap colectomy w/proctectomy |
| 44212 | Laparo total proctocolectomy |
| 44314 | Revision of ileostomy |
| 44320 | Colostomy |
| 44340 | Revision of colostomy |
| 44345 | Revision of colostomy |
| 44346 | Revision of colostomy |
| 45005 | Drainage of rectal abscess |
| 45020 | Drainage of rectal abscess |
| 45110 | Removal of rectum |
| 45111 | Partial removal of rectum |
| 45112 | Removal of rectum |
| 45113 | Partial proctectomy |
| 45119 | Remove rectum w/reservoir |
| 45123 | Partial proctectomy |
| 45130 | Excision of rectal prolapse |
| 45395 | Lap removal of rectum |
| 45397 | Lap remove rectum w/pouch |
| 45400 | Laparoscopic proc |
| 45402 | Lap proctopexy w/sig resect |
| 45505 | Repair of rectum |
| 45540 | Correct rectal prolapse |
| 45541 | Correct rectal prolapse |
| 45550 | Repair rectum/remove sigmoid |
| 46040 | Incision of rectal abscess |
| 46045 | Incision of rectal abscess |
| 46060 | Incision of rectal abscess |
| 46947 | Hemorrhoidopexy by stapling |
| 11000 | Debride infected skin | Debridement, Lymph Node Dissection | 2,523 (3.6) |
| 11004 | Debride genitalia & perineum |
| 11005 | Debride abdom wall |
| 11006 | Debride genit/per/abdom wall |
| 11042 | Deb subq tissue 20 sq cm/< |
| 11043 | Deb musc/fascia 20 sq cm/< |
| 11044 | Deb bone 20 sq cm/< |
| 14301 | Tis trnfr any 30.1-60 sq cm |
| 38570 | Laparoscopy lymph node biop |
| 38724 | Removal of lymph nodes neck |
| 38740 | Remove armpit lymph nodes |
| 38745 | Remove armpit lymph nodes |
| 38760 | Remove groin lymph nodes |
| 43107 | Removal of esophagus | Esophageal Surgery | 474 (0.7) |
| 43117 | Partial removal of esophagus |
| 43279 | Lap myotomy heller |
| 43280 | Laparoscopy fundoplasty |
| 43281 | Lap paraesophag hern repair |
| 43282 | Lap paraesoph her rpr w/mesh |
| 43284 | Laps esophgl sphnctr agmntj |
| 43332 | Transab esoph hiat hern rpr |
| 43333 | Transab esoph hiat hern rpr |
| 43610 | Excision of stomach lesion | Gastrectomy, Hepatectomy, Liver Ablation, Pancreatectomy, or Splenectomy | 2,034 (2.9) |
| 43611 | Excision of stomach lesion |
| 43621 | Removal of stomach |
| 43631 | Removal of stomach partial |
| 43632 | Removal of stomach partial |
| 43633 | Removal of stomach partial |
| 43840 | Repair of stomach lesion |
| 47120 | Partial removal of liver |
| 47122 | Extensive removal of liver |
| 47125 | Partial removal of liver |
| 47130 | Partial removal of liver |
| 38100 | Removal of spleen total |
| 38120 | Laparoscopy splenectomy |
| 48140 | Partial removal of pancreas |
| 48150 | Partial removal of pancreas |
| 48153 | Pancreatectomy |
| 47370 | Laparo ablate liver tumor rf |
| 49505 | Prp i/hern init reduc >5 yr | Hernia Repair | 23,423 (33.1) |
| 49507 | Prp i/hern init block >5 yr |
| 49520 | Rerepair ing hernia reduce |
| 49521 | Rerepair ing hernia blocked |
| 49525 | Repair ing hernia sliding |
| 49550 | Rpr rem hernia init reduce |
| 49553 | Rpr fem hernia init blocked |
| 49560 | Rpr ventral hern init reduc |
| 49561 | Rpr ventral hern init block |
| 49565 | Rerepair ventrl hern reduce |
| 49566 | Rerepair ventrl hern block |
| 49568 | Hernia repair w/mesh |
| 49570 | Rpr epigastric hern reduce |
| 49572 | Rpr epigastric hern blocked |
| 49585 | Rpr umbil hern reduc > 5 yr |
| 49587 | Rpr umbil hern block > 5 yr |
| 49650 | Lap ing hernia repair init |
| 49651 | Lap ing hernia repair recur |
| 49652 | Lap vent/abd hernia repair |
| 49653 | Lap vent/abd hern proc comp |
| 49654 | Lap inc hernia repair |
| 49655 | Lap inc hern repair comp |
| 49656 | Lap inc hernia repair recur |
| 49657 | Lap inc hern recur comp |
| 49321 | Laparoscopy biopsy | Laparoscopy | 824 (1.2) |
| 49322 | Laparoscopy aspiration |
| 60500 | Explore parathyroid glands | Parathyroidectomy | 1,358 (1.9) |
| 60502 | Re-explore parathyroids |
| 44005 | Freeing of bowel adhesion | Small Bowel Surgery | 1,375 (0.5) |
| 44020 | Explore small intestine |
| 44050 | Reduce bowel obstruction |
| 44110 | Excise intestine lesion(s) |
| 44120 | Removal of small intestine |
| 44125 | Removal of small intestine |
| 44130 | Bowel to bowel fusion |
| 44180 | Lap enterolysis |
| 44187 | Lap ileo/jejuno-stomy |
| 44202 | Lap enterectomy |
| 44227 | Lap close enterostomy |
| 44310 | Ileostomy/jejunostomy |
| 44312 | Revision of ileostomy |
| 44602 | Suture small intestine |
| 44620 | Repair bowel opening |
| 44625 | Repair bowel opening |
| 44626 | Repair bowel opening |
| 44640 | Repair bowel-skin fistula |
| 60200 | Remove thyroid lesion | Thyroidectomy | 3,487 (4.9) |
| 60210 | Partial thyroid excision |
| 60220 | Partial removal of thyroid |
| 60225 | Partial removal of thyroid |
| 60240 | Removal of thyroid |
| 60252 | Removal of thyroid |
| 60254 | Extensive thyroid surgery |
| 60260 | Repeat thyroid surgery |
| 60271 | Removal of thyroid |