# Supplementary tables

***Supplementary table 1.*** *Full covariate table for 30 day mortality (other covariate tables may be obtained by e-mail correspondence to the primary author)*

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| --- | --- | --- | --- | --- |
| **Covariate name** | **Covariate value** | **Covariate count** | **Covariate mean** | **Covariate standard deviation** |
| **age group: 95 - 99** | 1.173 | 190 | 0.003 | 0.054 |
| **ASA Score 4** | 1.098 | 1300 | 0.02 | 0.139 |
| **age group: 90 - 94** | 1.021 | 1317 | 0.02 | 0.14 |
|  **Only exploratory surgery, diagnostic laparoscopy or exploratory laparotomy** | 0.932 | 300 | 0.005 | 0.067 |
| **age group: 85 - 89** | 0.884 | 4622 | 0.07 | 0.256 |
| **age group: 80 - 84** | 0.594 | 8373 | 0.128 | 0.334 |
| **Defunctioning stoma** | 0.559 | 2394 | 0.036 | 0.187 |
|  **Tumor perforation, open perforation** | 0.555 | 1442 | 0.022 | 0.147 |
|  **Endoscopic insertion of permanent colonic stent** | 0.488 | 862 | 0.013 | 0.114 |
|  **Emergency operation** | 0.484 | 7584 | 0.116 | 0.32 |
|  **MX category** | 0.479 | 8961 | 0.137 | 0.343 |
|  **Gastrointestinal perforation** | 0.471 | 945 | 0.014 | 0.119 |
| **ASA Score 3** | 0.391 | 14118 | 0.215 | 0.411 |
|  **Ileocolic resection** | 0.346 | 130 | 0.002 | 0.044 |
|  **Primary malignant neoplasm of splenic flexure of colon** | 0.335 | 1939 | 0.03 | 0.169 |
|  **Intention of surgery within 6 hours of indication of surgery** | 0.309 | 707 | 0.011 | 0.103 |
| **WHO Performance status 3** | 0.288 | 499 | 0.008 | 0.087 |
| **age group: 75 - 79** | 0.258 | 10781 | 0.164 | 0.371 |
|  **Primary malignant neoplasm of transverse colon** | 0.247 | 3747 | 0.057 | 0.232 |
|  **Secondary malignant neoplasm of liver** | 0.237 | 6499 | 0.099 | 0.299 |
|  **Exploratory procedure of abdomen, laparoscopic or open approach** | 0.193 | 238 | 0.004 | 0.06 |
|  **Total colectomy and ileostomy** | 0.189 | 993 | 0.015 | 0.122 |
|  **Secondary malignant neoplastic disease** | 0.175 | 9212 | 0.14 | 0.347 |
|  **Biopsy only** | 0.17 | 621 | 0.009 | 0.097 |
|  **Optional surgery** | 0.168 | 57073 | 0.87 | 0.336 |
|  **T4 category** | 0.166 | 2642 | 0.04 | 0.197 |
|  **WHO Performance status 2** | 0.161 | 1779 | 0.027 | 0.162 |
|  **Secondary malignant neoplasm of peritoneum** | 0.158 | 618 | 0.009 | 0.097 |
|  **Indication for procedure** | 0.143 | 7416 | 0.113 | 0.317 |
|  **Excision** | 0.126 | 8125 | 0.124 | 0.329 |
|  **Anterior resection of rectum with colostomy** | 0.126 | 2742 | 0.042 | 0.2 |
|  **M1 category** | 0.118 | 10416 | 0.159 | 0.365 |
|  **Anastomosis of intestine** | 0.115 | 21359 | 0.326 | 0.469 |
|  **Creation of loop ileostomy** | 0.113 | 1535 | 0.023 | 0.151 |
|  **Laparotomy** | 0.107 | 31401 | 0.479 | 0.5 |
|  **Mechanical ileus** | 0.101 | 5441 | 0.083 | 0.276 |
|  **DRE, tumor fixated** | 0.09 | 1878 | 0.029 | 0.167 |
| **Alcohol consumption per week: 0 units** | 0.09 | 11895 | 0.181 | 0.385 |
|  **TX category** | 0.078 | 3053 | 0.047 | 0.211 |
| **Charlson Score 3+** | 0.071 | 6668 | 0.102 | 0.302 |
|  **Resection of rectum** | 0.07 | 11149 | 0.17 | 0.376 |
|  **Total mesorectal excision** | 0.07 | 7128 | 0.109 | 0.311 |
| **Temporary stoma** | 0.056 | 4030 | 0.061 | 0.24 |
| **Distance from tumor to anal verge by endoscopy >5 <=10 cm** | 0.051 | 8224 | 0.125 | 0.331 |
|  **N0 category** | 0.049 | 7270 | 0.111 | 0.314 |
| **Distance from tumor to anal verge by MRI >10 cm** | 0.042 | 2697 | 0.041 | 0.199 |
| **Distance from tumor to anal verge by endoscopy <=5 cm** | 0.037 | 5338 | 0.081 | 0.273 |
|  **Tumor perforation, encapsulated** | 0.036 | 1655 | 0.025 | 0.157 |
|  **NX category** | 0.032 | 3466 | 0.053 | 0.224 |
|  **N2 category** | 0.031 | 2400 | 0.037 | 0.188 |
| **Permanent stoma** | 0.03 | 990 | 0.015 | 0.122 |
|  **Primary malignant neoplasm of hepatic flexure of colon** | 0.025 | 3043 | 0.046 | 0.21 |
|  **Total abdominal colectomy with ileoproctostomy** | 0.021 | 745 | 0.011 | 0.106 |
|  **Left colectomy** | 0.018 | 4062 | 0.062 | 0.241 |
|  **MRI T4** | 0.011 | 1236 | 0.019 | 0.136 |
|  **Primary malignant neoplasm of colon** | 0.001 | 44541 | 0.679 | 0.467 |
|  **Primary malignant neoplasm of sigmoid colon** | -0.002 | 19004 | 0.29 | 0.454 |
|  **Extended right hemicolectomy** | -0.008 | 1817 | 0.028 | 0.164 |
|  **Palliative intent** | -0.009 | 4132 | 0.063 | 0.243 |
| **Alcohol consumption per week: >21 units** | -0.01 | 3601 | 0.055 | 0.228 |
|  **DRE, tumor adherent** | -0.011 | 1236 | 0.019 | 0.136 |
|  **Treatment intent** | -0.02 | 1070 | 0.016 | 0.127 |
|  **M0 category** | -0.022 | 54365 | 0.829 | 0.377 |
|  **MRI T3** | -0.026 | 4351 | 0.066 | 0.249 |
|  **Fiberoptic endoscopic insertion of expanding metal stent into colon** | -0.027 | 1982 | 0.03 | 0.171 |
|  **Smoker** | -0.037 | 10515 | 0.16 | 0.367 |
| **Pre-operative therapy (neoadjuvant or combined chemo- radiotherapy)** | -0.038 | 5365 | 0.082 | 0.274 |
|  **Colonoscopy** | -0.044 | 198 | 0.003 | 0.055 |
|  **T1 category** | -0.045 | 4629 | 0.071 | 0.256 |
|  **Histological diagnosis of biopsy, malignant adenomatous neoplasm** | -0.053 | 9078 | 0.138 | 0.345 |
|  **Transverse colectomy** | -0.054 | 752 | 0.011 | 0.106 |
|  **Secondary malignant neoplasm of lung** | -0.056 | 2907 | 0.044 | 0.206 |
| **Distance from tumor to anal verge by MRI >5 <=10 cm** | -0.059 | 4692 | 0.072 | 0.258 |
|  **Proficient mismatch repair protein (MMR) status** | -0.06 | 29390 | 0.448 | 0.497 |
|  **Primary malignant neoplasm of cecum** | -0.088 | 8568 | 0.131 | 0.337 |
|  **Depth of tumor growth profund for tunica muscularis, for T3-T4 tumors by CT SCAN (millimeter)** | -0.092 | 2908 | 0.251 | 1.28 |
|  **Tumor finding** | -0.093 | 34613 | 0.528 | 0.499 |
|  **Sigmoid colectomy and colostomy** | -0.099 | 2696 | 0.041 | 0.198 |
| **WHO Performance status 1** | -0.107 | 5514 | 0.084 | 0.277 |
|  **Compromised resection** | -0.108 | 1070 | 0.016 | 0.127 |
|  **DRE, tumor mobile** | -0.116 | 9664 | 0.147 | 0.354 |
|  **Primary malignant neoplasm of ascending colon** | -0.191 | 6252 | 0.095 | 0.294 |
|  **Screening for malignant neoplasm of colon** | -0.195 | 4906 | 0.075 | 0.263 |
| **Alcohol consumption per week: 15-21 units** | -0.198 | 3874 | 0.059 | 0.236 |
| **Body Mass Index(by algorithm) <=18.5** | -0.198 | 1889 | 0.029 | 0.167 |
| **Alcohol consumption per week: 1-14 units** | -0.216 | 29498 | 0.45 | 0.497 |
|  **construction of diverting stoma before definitive procedure** | -0.217 | 453 | 0.007 | 0.083 |
|  **Primary malignant neoplasm of rectum** | -0.227 | 20842 | 0.318 | 0.466 |
|  **No creation of ostomy** | -0.244 | 20060 | 0.306 | 0.461 |
|  **Family history of malignant neoplasm of gastrointestinal tract** | -0.254 | 16082 | 0.245 | 0.43 |
| **Body Mass Index(by algorithm) >30 <=35** | -0.254 | 6278 | 0.096 | 0.294 |
| **Body Mass Index(by algorithm) >35** | -0.256 | 2122 | 0.032 | 0.177 |
|  **Ex-cigarette smoker** | -0.264 | 21136 | 0.322 | 0.467 |
| **age group: 65 - 69** | -0.296 | 10346 | 0.158 | 0.364 |
|  **Sigmoid colectomy** | -0.312 | 11718 | 0.179 | 0.383 |
| **gender = FEMALE** | -0.315 | 30551 | 0.466 | 0.499 |
|  **intention of surgery within 36 hours of indication of surgery** | -0.326 | 474 | 0.007 | 0.085 |
| **Charlson Score 0** | -0.332 | 41563 | 0.633 | 0.482 |
|  **Excision of secondary malignant neoplasm** | -0.348 | 2899 | 0.044 | 0.206 |
|  **Laparoscopy** | -0.352 | 26577 | 0.405 | 0.491 |
|  **Curative - procedure intent** | -0.355 | 48435 | 0.738 | 0.44 |
| **ASA Score 2** | -0.37 | 33595 | 0.512 | 0.5 |
|  **Abdominoperineal resection** | -0.373 | 5205 | 0.079 | 0.27 |
| **[CUSTOM]Body Mass Index(by algorithm) >18.5 <=25** | -0.393 | 23809 | 0.363 | 0.481 |
|  **Never smoked tobacco** | -0.433 | 19297 | 0.294 | 0.456 |
|  **Other local resection including polypresection or EMR** | -0.475 | 2152 | 0.033 | 0.178 |
| **WHO Performance status 0** | -0.484 | 14655 | 0.223 | 0.416 |
|  **Local macroradical excision of colorectal tumor** | -0.568 | 22133 | 0.337 | 0.473 |
| **Body Mass Index(by algorithm) >25 <=30** | -0.581 | 18811 | 0.287 | 0.452 |
| **age group: 60 - 64** | -0.593 | 7508 | 0.114 | 0.318 |
| **age group: 55 - 59** | -0.883 | 4849 | 0.074 | 0.262 |
| **ASA Score 1** | -0.889 | 13850 | 0.211 | 0.408 |
|  **Endoscopic procedure** | -0.939 | 3874 | 0.059 | 0.236 |
| **age group: 50 - 54** | -1.034 | 2914 | 0.044 | 0.206 |

*ASA = American Society of Anesthesiology score, MX = Metastasis category unknown, WHO = World Health Organization, T4 = Tumor category 4, MRI = Magnetic resonance imaging, M1 = Metastasis category 1, TX = Tumor category unknown, DRE = Digital rectal exploration, NX = Node category unknown, N2 = Node category 2, M0 = Metastasis category 0, MRI T3 = Tumor category 3 assessed on magnetic resonance imaging, T1 = Tumor category 1, pMMR = proficient mismatch repair, CT Scan = Computer tomography scan*