**Supplementary Table 1.** ICD-9 and procedure codes used to define variables.

|  |  |
| --- | --- |
| Definition | ICD-9/Procedure Code |
| Bone marrow transplant | 996.85 |
| Heart Transplant | 996.83 |
| Intestinal Transplant | 996.87 |
| Kidney Transplant | 996.81 |
| Liver Transplant | 996.82 |
| Lung Transplant | 996.84 |
| Pancreas Transplant | 996.86 |
| History of diabetes | 250, 250.0, 250.00, 250.01-250.03, 250.1, 250.10-250.13, 250.2, 250.20-250.23, 250.3, 250.30-250.33, 250.4, 250.40-250.43, 250.5, 250.50-250.53, 250.6, 250.60-250.63, 250.7, 250.70-250.73, 250.8, 250.80-250.83, 250.9, 250.90-250.93 |
| History of coronary artery disease | 410, 410.0-410.9, 411, 411.0, 411.1, 411.8, 411.89, 411.81, 412, 413, 413.1, 413.9, 414, 414.0, 414.00-414.07, 414.1, 414.10-414.12, 414.19, 414.2, 414.3, 414.8, 414.9 |
| History of chronic kidney disease | 585, 585.1-585.6, 585.9 |
| History of chronic liver disease | 571, 571.0-571.4, 571.40-571.42, 571.49, 571.5, 571.6, 571.8, 571.9 |
| History of hypertension | 401, 401.0, 401.1, 401.9, 402, 402.0, 402.00, 402.01, 402.1, 402.10, 402.11, 402.9, 402.90, 402.91, 403, 403.0, 403.1, 403.9, 404, 404.0 404.1, 404.9, 405, 405.0, 405.01, 405.09, 405.1, 405.11, 405.19, 405.9, 405.91, 405.99 |
| History of leukemia | 203, 203.0, 203.1, 203.8, 204, 204.0-204.2, 204.8, 204.9, 205, 205.0-205.3, 205.8, 205.9, 206, 206.0-206.2, 206.8, 206.9, 207, 207.1, 207.2, 207.8, 208, 208.0-208.2, 208.8, 208.9 |
| History of lymphoma | 200, 200.0-200.8, 201, 201.0-201.2, 201.4-201.7, 201.9, 202, 202.0-202.9 |
| Neutropenia | 288, 288.0, 288.00-288.04, 288.09 |
| Cancer of esophagus | 150.0-150.5, 150.8, 150.9, 230.1, V10.03 |
| Cancer of stomach | 151.0-151.4, 151.8, 151.9, 209.23, V10.04 |
| Cancer of colon | 153.0-153.9, 159.0, 209.10, 209.11, 209.16, 230.3, V10.05 |
| Cancer of rectum and anus | 154.0-154.3, 154.8, 209.17, 230.4, 230.6, 796.70-796.74, V10.06 |
| Cancer of liver and intrahepatic bile duct | 155.0-155.2, 230.8, V10.07 |
| Cancer of pancreas | 157.0-157.4, 157.8, 157.9 |
| Cancer of other GI organs/peritoneum | 152.1, 152.2, 152.9, 156.1, 156.2, 156.8, 158.8, 158.9, 159.1, 159.9, 209.00, 209.01, 209.03, 230.9, V10.00, V10.09 |
| Cancer of bronchus/lung | 162.2, 162.3, 162.5, 162.8, 162.9, 209.21, 231.2, V10.11 |
| Cancer of other respiratory and intrathoracic | 162.0, 163.0, 163.9, 165.8, 165.9, V10.12, V10.20, V10.22 |
| Cancer of bone and connective tissue | 170.0-171.0, 171.2-171.9 |
| Melanomas of skin | 172.1-172.9 |
| Other non-epithelial cancer of skin | 173.0, 173.02, 173.1, 173.11, 173.12, 173.2, 173.20-173.22, 173.3, 173.30-173.32, 173.39, 173.4, 173.40-173.42, 173.49, 173.5, 173.50-173.52, 173.59, 173.6, 173.60-173.62, 173.69, 173.7, 173.70, 173.72, 173.8, 173.81, 173.82, 173.9, 173.90-173.92, 209.31, 209.33, 209.34, 209.36, 232.0, 232.2-232.8, V10.83 |
| Cancer of breast | 174.0-174.3, 174.5, 174.6, 174.8, 174.9, 175.9, 233.0, V10.3 |
| Cancer of uterus | 179, 182.0, 182.1, 182.8, V10.42 |
| Cancer of cervix | 180.0, 180.1, 180.8, 180.9, 233.1, 795.01-795.04 |
| Cancer of ovary | 183.0, V10.43 |
| Cancer of other female genital organs | 181, 183.2, 183.4, 183.8, 184.0, 184.1, 184.4, 184.8, 184.9, 233.3, 233.31, 233.32, V10.40, V10.44 |
| Cancer of prostate | 185, 233.4, V10.46 |
| Cancer of testis | 186.9, V10.47 |
| Cancer of other male genital organs | 187.4-187.8, 233.5, V10.45, V10.49 |
| Cancer of bladder | 188.1-188.9, 233.7, V10.51 |
| Cancer of kidney and renal pelvis | 189.0, 189.1, V10.52, V10.53 |
| Cancer of other urinary organs | 189.2, 189.3, 189.8, 189.9, 230.1, 233.9, V10.50, V10.59 |
| Cancer of brain and nervous system | 191, 191.0-191.4, 191.6-192.3, 192.9, V10.85, V10.86 |
| Cancer of thyroid | 193, 258.02, V10.87 |
| Hodgkin’s disease | 201.40, 201.41, 201.48, 201.50-201.52, 201.54, 201.55, 201.57, 201.58, 201.60, 201.61, 201.68, 201.90-201.96, 201.98, V10.72 |
| Non-Hodgkin’s lymphoma | 200.00-200.05, 200.08, 200.10-200.15, 200.18, 200.20-200.24, 200.26-200.28, 200.30, 200.31, 200.33, 200.38, 200.40, 200.41, 200.44, 200.48, 200.50, 200.53, 200.58, 200.60, 200.61, 200.63, 200.65, 200.68, 200.70-200.74, 200.78, 200.80-200.82, 200.85, 202.00-202.05, 202.08, 202.10-202.15, 202.18, 202.20, 202.28, 202.70-202.72, 202.76, 202.78, 202.80-202.88, 202.90-202.95, 202.98, V10.71, V10.79 |
| Leukemia | 202.40, 202.41, 203.10, 203.11, 204.00, 204.01, 204.10-204.12, 204.20, 204.80, 204.82, 204.90, 204.91, 205.00-205.02, 205.10-205.12, 205.30, 205.32, 205.80, 205.81, 205.90, 206.00, 207.00, 207.10, 207.80, 207.81, 208.00, 208.01, 208.10, 208.90, 208.91, V10.60-V10.63, V10.69 |
| Multiple myeloma | 203.00-203.02, 203.80 |
| Cancer other and unspecified primary | 164.0-164.3, 164.9, 176.0, 176.1, 176.3-176.5, 176.8, 176.9, 190.1, 190.3, 190.5, 190.6, 190.9, 194.0, 194.1, 194.3, 194.4, 194.8, 194.9, 195.1-195.3, 195.5, 195.8, 202.30, 202.34, 202.50, 202.60, 202.61, 234.8, 795.1, 795.10-795.14, V10.29, V10.81, V10.84, V10.88, V10.89, V10.9, V10.90, V10.91, V71.1 |
| Secondary malignancies | 196.0-196.3, 196.5, 196.6, 196.8-197.8, 198.0-198.7, 198.81, 198.82, 198.89, 209.71-209.74, 511.81, 789.51 |
| Malignant neoplasm without specification of site | 199.0-199.2, 209.20, 209.29, 209.30, 209.70, 209.75, 209.79 |
| Neoplasms of unspecified nature or uncertain behavior | 235.0-236.0, 236.2, 236.3, 236.7, 236.90, 236.91, 236.99, 237.0-237.5, 237.70-237.72, 237.9-238.4, 238.6, 238.7, 238.71-238.77, 238.79, 238.8-239.8, 239.89, 239.9 |
| HIV | 042 |
| Burns | 906.5-906.9, 940.0-940.2, 940.4, 941.00, 941.03, 941.05-941.10, 941.17, 941.18, 941.20-941.23, 941.25, 941.27-941.31, 941.37-941.39, 942.00-942.05, 942.13, 942.15, 942.21-942.25, 942.29, 942.31-942.34, 942.39, 942.45, 942.49, 943.01, 943.03, 943.05, 943.10, 943.21, 943.23, 943.25, 943.30-943.34, 943.39, 943.49, 944.00, 944.01, 944.03, 944.07, 944.08, 944.10, 944.20, 944.21, 944.23, 944.24, 944.26-944.28, 944.30, 944.33, 944.38, 944.48, 944.52, 944.58, 945.00-945.04, 945.06, 945.11, 945.12, 945.14, 945.16, 945.20, 945.22-945.26, 945.31, 945.32, 945.34-945.36, 946.0, 947.0, 947.1, 948.00, 948.10, 948.11, 948.20-948.22, 948.30, 948.40, 948.44, 948.55, 949.0 |
| Cancer of head and neck | 140.0, 140.1, 140.3-140.6, 140.8-141.1, 141.3, 141.4, 141.6, 141.8, 141.9, 142.0-142.2, 142.9, 143.0, 143.1, 143.8-144.1, 144.8-145.6, 145.8-147.3, 147.8-148.3, 148.8-149.1, 149.8-160.3, 160.5, 160.8-161.3, 161.8, 161.9, 195.0, 230.0, 231.0, V10.02, V10.21 |
| Incision and excision of CNS | 0101, 0109, 0121-0128, 0131, 0132, 0139, 0141, 0142, 0151-0153, 0159 |
| Insertion, replacement, or removal of extracranial ventricular shunt | 0231-0235, 0239, 0242, 0243 |
| Laminectomy; excision intervertebral disc | 0302, 0309, 805, 8050, 8051, 8059, 8459, 8460-8469, 8480-8485 |
| Diagnostic spinal tap | 0331 |
| Insertion of catheter or spinal stimulator and injection into spinal canal | 038, 0390-0394 |
| Decompression of peripheral nerve | 0443, 0444, 0449 |
| Other diagnostic nervous system procedures | 0111-0115, 0118, 0119, 0332, 0339, 0411, 0412, 0419, 0511, 0519 |
| Other non-OR or closed therapeutic nervous system procedures | 0102, 0241, 0295, 0321, 0395, 0396, 0480, 0481, 0489, 0531, 0532, 0539 |
| Other OR therapeutic nervous system procedures | 0120, 0129, 016, 0201-0207, 0211-0214, 022, 0221 0222, 0291-0294, 0296, 0299, 0301, 031, 0329, 034, 0351-0353, 0359, 036, 0371, 0372, 0379, 0397-0399, 0401 0402-0407, 042, 043, 0441, 0442, 045, 046, 0471-0476, 0479, 0491-0493, 0499, 050, 0521-0525, 0529, 0581, 0589, 059, 1761, 8053, 8054, 8458, 8694-8698 |
| Lobectomy or pneumonectomy | 3220-3227, 3229, 323, 3230, 3239, 324, 3241, 3249, 325, 3250, 3259 |
| Other diagnostic procedures on lung and bronchus | 3320, 3325, 3328, 3329, 3402 |
| Incision of pleura; thoracentesis; chest drainage | 3404, 3406, 3409, 3491 |
| Heart valve procedures | 3500-3514, 3520-3528, 3596, 3597, 3599 |
| Coronary artery bypass graft | 3610-3617, 3619, 362, 363, 3631-3634, 3639 |
| Insertion, revision, replacement, or removal of cardiac pacemaker or cardioverter/defibrillator | 0050-0054, 0056, 0057, 1751, 1752, 3770-3783, 3785-3787, 3789, 3794-3798 |
| Other OR heart procedures | 3531-3535, 3539, 3541, 3542, 3550-3555, 3560-3563, 3570-3573, 3581-3584, 3591-3595, 3598, 3600, 3603, 3609, 3691, 3699, 3710-3712, 3731-3737, 374, 3741, 3749, 3752-3755, 3760-3768, 3790, 3791, 3799 |
| Extracorporeal circulation auxiliary to open heart procedures | 3961-3966 |
| Aortic resection, replacement, or anastomosis | 3834, 3844, 3864, 3971, 3973, 3978 |
| Peripheral vascular bypass | 3925, 3929 |
| Other vascular bypass and shunt; not heart | 390, 391, 3921-3924, 3926, 3928 |
| Creation, revision, and removal of AV fistula or vessel-to-vessel cannula for dialysis | 3927, 3942, 3943, 3993 |
| Hemodialysis | 3995 |
| Bone marrow transplant | 410, 4100-4108 |
| Procedures on spleen | 411, 412, 4141-4143, 415, 4193, 4195, 4199 |
| Gastrostomy; temporary and permanent | 431, 4311, 4319, 432, 4432 |
| Colostomy; temporary and permanent | 4610-4614 |
| Ileostomy and other enterostomy | 4620-4624, 4631, 4632, 4639 |
| Gastrectomy, partial and total | 435-437, 4381, 4382, 4389, 4391, 4399 |
| Small bowel resection | 4561-4563 |
| Colorectal resection | 1731-1736, 1739, 4571-4576, 4579, 458, 4581-4583, 4840-4843, 4849, 485, 4850-4852, 4859, 4861-4866, 4869 |
| Local excision of large intestine lesion (not endoscopic) | 4541 |
| Appendectomy | 470, 4701, 4709, 471, 4711, 4719 |
| Cholecystectomy and common duct exploration | 5121-5124, 5141-5143, 5149, 5151, 5159 |
| Inguinal and femoral hernia repair | 1711-1713, 1721-1724, 5300-5305, 5310-5317, 5321, 5329, 5331, 5339 |
| Other hernia repair | 5341-5343, 5349, 5351, 5359, 5361-5363, 5369, 537, 5371, 5372, 5375, 5380-5384, 539 |
| Laparoscopy (GI) | 5421 |
| Exploratory laparotomy | 5411 |
| Excision/lysis peritoneal adhesions | 545, 5451, 5459 |
| Other OR upper GI therapeutic procedures | 4201, 4209-4212, 4219, 4231, 4232, 4239-4242, 4251-4256, 4258, 4259, 4261-4266, 4268, 4269, 427, 4282-4287, 4289, 4299, 430, 433, 4342, 4349, 4400-4403, 442, 4421, 4429, 4431, 4438-4442, 445, 4461, 4463-4469, 4491, 4492, 4495-4499 |
| Other OR lower GI therapeutic procedures | 4500-4503, 4531-4534, 4549-4552, 4590-4595, 4601-4604, 4640-4643, 4650-4652, 4660-4664, 4671-4676, 4679-4682, 4691-4694, 4699, 472, 4791, 4792, 4799, 480, 481, 4835, 4871-4876, 4879, 4881, 4882, 4891-4893, 4899, 4901, 4902, 4904, 4911, 4912, 493, 4939, 4951, 4952, 4959, 496, 4971-4976, 4979, 4991-4995, 4999 |
| Other OR GI therapeutic procedures | 1763, 500, 5021-5026, 5029, 503, 504, 5061, 5069, 5102-5104, 5131-5137, 5139, 5161-5163, 5169, 5171, 5172, 5179, 5181-5183, 5189, 5191-5195, 5199, 5201, 5209, 522, 5222, 523, 524, 5251-5253, 5259, 526, 527, 5292, 5295, 5296, 5299, 540, 5412, 5419, 543, 544, 5461-5464, 5471-5475, 5492-5495 |
| Nephrectomy, partial and complete | 554, 5551-5554 |
| Kidney transplant | 5561, 5569 |
| Open prostatectomy | 603-605, 6061, 6062, 6069 |
| Oophorectomy, unilateral and bilateral | 653, 6531, 6539, 654, 6541, 6549, 6551-6554, 6561-6564 |
| Ligation or occlusion of fallopian tubes | 6621, 6622, 6629, 6631, 6632, 6639 |
| Cesarean section | 740-742, 744, 7499 |
| Organ transplantation (other than bone marrow, corneal, or kidney) | 335, 3350-3352, 336, 375, 3751, 4194, 4697, 5051, 5059, 5280-5286 |
| Radiation therapy | 9220-9229, 9241 |
| Enteral and parenteral nutrition | 966, 9915 |
| Cancer chemotherapy | 0010, 0015, 1770, 9925, 9928 |
| Elixhauser congestive heart failure | 398.91, 402.11, 402.91, 404.11, 404.13, 404.91, 404.93, 428.x |
| Elixhauser valvular disease | 093.2, 394.0-397.1, 424.0-424.91, 746.3-746.6, V42.2, V43.3 |
| Elixhauser pulmonary circulation disorders | 416.x, 417.9 |
| Elixhauser peripheral vascular disorders | 440.x, 441.2, 441.4, 441.7, 441.9, 443.1-443.9, 447.1, 557.1, 557.9, V43.4 |
| Elixhauser hypertension | 401.1, 401.9 |
| Elixhauser paralysis | 342.0, 342.1, 342.9-344.x |
| Elixhauser other neurological disorders | 331.9, 332.0, 333.4, 333.5, 334.x, 335.x, 340.x, 341.1-341.9, 345.0, 345.1, 345.4, 345.5, 345.8, 345.9, 348.1, 348.3, 780.3, 784.3 |
| Elixhauser chronic pulmonary disease | 490-492.8, 493.00-493.91, 494.x-505.x, 506.4 |
| Elixhauser diabetes, uncomplicated | 250.0-250.3 |
| Elixhauser diabetes, complicated | 250.4-250.7, 250.9 |
| Elixhauser hypothyroidism | 243-244.2, 244.8, 244.9 |
| Elixhauser renal failure | 403.11, 403.91, 404.12, 404.92, 585.x, 586.x, V42.0, V45.1, V56.0, V56.8 |
| Elixhauser liver disease | 070.32, 070.33, 070.54, 456.0, 456.1, 456.2, 571.0, 571.2-571.9, 572.3, 572.8, V42.7 |
| Elixhauser peptic ulcer disease excluding bleeding | 531.70, 531.90, 532.70, 532.90, 533.70, 533.90, 534.70, 534.90, V12.71 |
| Elixhauser AIDS/HIV | 042.x-044.x |
| Elixhauser lymphoma | 200.x-202.3x, 202.5-203.0, 203.8, 238.6, 273.3, V10.71, V10.72, V10.79 |
| Elixhauser metastatic cancer | 196.x-199.x |
| Elixhauser solid tumor without metastasis | 140.x-172.x, 174.x, 175.x, 179.x-195.x, V10.x |
| Elixhauser rheumatoid arthritis / collagen vascular diseases | 701.0, 710.x, 714.x, 720.x, 725.x |
| Elixhauser coagulopathy | 286.x, 287.1, 287.3-287.5 |
| Elixhauser obesity | 278.0 |
| Elixhauser weight loss | 260.x-263.x |
| Elixhauser fluid and electrolyte disorders | 276.x |
| Elixhauser blood loss anemia | 280.0 |
| Elixhauser deficiency anemia | 280.1-281.9, 285.2, 285.9 |
| Elixhauser alcohol abuse | 291.1, 291.2, 291.5-291.9, 303.9, 305.0, V113 |
| Elixhauser drug abuse | 292.0, 292.82-292.89, 292.9, 304.0, 305.2, 305.9 |
| Elixhauser psychoses | 295.x-298.x, 299.1 |
| Elixhauser depression | 300.4, 301.12, 309.0, 309.1, 311 |

NOTE: TPN, total parenteral nutrition; GI, gastrointestinal; CNS, central nervous system; OR, operating room; AV, arteriovenous; AIDS/HIV, autoimmune deficiency syndrome/human immunodeficiency virus.

**Supplementary Table 2.** Comparison of additional characteristics between patients with *Candida krusei* (CK)bloodstream infections and those with non-CKbloodstream infections.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | CK (N=59) | Non-CK (N=1,814) | P-value | Total (N=1,873) |
| Elixhauser Comorbidities |  |  |  |  |
| Congestive heart failure | 1 (1.7) | 30 (1.7) | 1.0000 | 31 (1.7) |
| Valvular disease | 1 (1.7) | 38 (2.1) | 1.0000 | 39 (2.1) |
| Peripheral vascular disorder | 2 (3.4) | 161 (8.9) | 0.1413 | 163 (8.7) |
| Hypertension | 26 (44.1) | 761 (42.0) | 0.7459 | 787 (42.0) |
| Paralysis | 0 (0) | 1 (0.1) | 1.0000 | 1 (0.05) |
| Other neurological disorder | 7 (11.9) | 122 (6.7) | 0.1203 | 129 (6.9) |
| Chronic pulmonary disease | 2 (3.4) | 302 (16.7) | 0.0066 | 304 (16.2) |
| Hypothyroidism | 12 (20.3) | 204 (11.3) | 0.0314 | 216 (11.5) |
| Renal failure | 8 (13.6) | 325 (17.9) | 0.3890 | 333 (17.8) |
| Liver disease | 3 (5.1) | 200 (11.0) | 0.1486 | 203 (10.8) |
| Peptic ulcer disease | 0 (0) | 3 (0.2) | 1.0000 | 3 (0.2) |
| HIV/AIDS | 0 (0) | 19 (1.1) | 1.0000 | 19 (1.0) |
| Lymphoma | 1 (1.7) | 5 (0.3) | 0.1749 | 6 (0.3) |
| Cardiac arrhythmias | 3 (5.1) | 79 (4.4) | 0.7417 | 82 (4.4) |
| Solid tumor without  metastasis | 0 (0) | 38 (2.1) | 0.6307 | 38 (2.0) |
| Rheumatoid arthritis /  Collagen vascular diseases | 0 (0) | 2 (0.1) | 1.0000 | 2 (0.1) |
| Coagulopathy | 20 (33.9) | 332 (18.3) | 0.0025 | 352 (18.8) |
| Obesity | 5 (8.5) | 175 (9.7) | 0.7636 | 180 (9.6) |
| Weight loss | 0 (0) | 71 (3.9) | 0.1681 | 71 (3.8) |
| Blood loss anemia | 5 (8.5) | 97 (5.4) | 0.2500 | 102 (5.5) |
| Deficiency anemia | 28 (47.5) | 639 (35.2) | 0.0535 | 667 (35.6) |
| Alcohol abuse | 1 (1.7) | 14 (0.8) | 0.3824 | 15 (0.8) |
| Drug abuse | 0 (0) | 16 (0.9) | 1.0000 | 16 (0.9) |
| Depression | 18 (30.5) | 408 (22.5) | 0.1483 | 426 (22.7) |
| Other Comorbidities |  |  |  |  |
| Hypertension | 26 (44.1) | 759 (41.8) | 0.7330 | 785 (41.9) |
| Diabetes | 12 (20.3) | 427 (23.5) | 0.5680 | 439 (23.4) |
| Coronary artery disease | 9 (15.3) | 402 (22.2) | 0.2071 | 411 (21.9) |
| Chronic liver disease | 1 (1.7) | 126 (7.0) | 0.1806 | 127 (6.8) |
| Chronic kidney disease | 7 (11.9) | 298 (16.4) | 0.3502 | 305 (16.3) |
| BMI, median (IQR) | 24.7 (7.6) | 24.0 (8.4) | 0.8037 | 24.0 (8.4) |
| Solid organ transplant | 1 (1.7) | 13 (0.7) | 0.3622 | 14 (0.8) |
| Heart Transplant | 0 (0) | 2 (0.1) | 1.0000 | 2 (0.1) |
| Intestinal Transplant | 0 (0) | 2 (0.1) | 1.0000 | 1 (0.05) |
| Kidney Transplant | 1 (1.7) | 3 (0.2) | 0.1203 | 4 (0.2) |
| Liver transplant | 0 (0) | 3 (0.2) | 1.0000 | 3 (0.2) |
| Lung transplant | 0 (0) | 5 (0.3) | 1.0000 | 5 (0.3) |
| Pancreas transplant | 0 (0) | 1 (0.1) | 1.0000 | 1 (0.05) |
| Burns | 0 (0) | 24 (1.3) | 1.0000 | 24 (1.3) |
| Radiation therapy | 1 (1.7) | 22 (1.2) | 0.5232 | 23 (1.2) |
| Preceding or concurrent  bacterial infection | 47 (82.5) | 1,427 (84.8) | 0.6224 | 1,474 (84.8) |
| TPN within prior 30 days | 19 (32.2) | 476 (26.2) | 0.3067 | 495 (26.4) |
| Malignancy |  |  |  |  |
| Any | 17 (28.8) | 592 (32.6) | 0.5374 | 609 (32.5) |
| Hodgkin’s lymphoma | 1 (1.7) | 35 (1.9) | 1.0000 | 36 (1.9) |
| Non-Hodgkin’s lymphoma | 15 (25.4) | 124 (6.8) | <0.0001 | 139 (7.4) |
| Multiple myeloma | 5 (8.5) | 36 (2.0) | 0.0082 | 41 (2.2) |
| Gastrointestinal | 8 (13.6) | 198 (10.9) | 0.5229 | 206 (11.0) |
| Colon | 5 (8.5) | 84 (4.6) | 0.1991 | 89 (4.8) |
| Secondary malignancy | 7 (11.9) | 297 (16.4) | 0.3554 | 304 (16.2) |
| Thorax | 1 (1.7) | 107 (5.9) | 0.2547 | 108 (5.8) |
| Female reproductive | 2 (3.4) | 90 (5.0) | 1.0000 | 92 (4.9) |
| Male reproductive | 1 (1.7) | 59 (3.3) | 1.0000 | 60 (3.2) |
| Urinary | 1 (1.7) | 52 (2.9) | 1.0000 | 53 (2.8) |
| Esophagus | 0 (0) | 17 (0.9) | 1.0000 | 17 (0.9) |
| Rectum/anus | 2 (3.4) | 56 (3.1) | 0.7045 | 58 (3.1) |
| Liver/bile duct | 1 (1.7) | 27 (1.5) | 0.5946 | 28 (1.5) |
| Pancreas | 0 (0) | 36 (2.0) | 0.6270 | 36 (1.9) |
| Other gastrointestinal or  peritoneal | 0 (0) | 30 (1.7) | 1.0000 | 30 (1.6) |
| Bronchus/lung | 1 (1.7) | 89 (4.9) | 0.3630 | 90 (4.8) |
| Other respiratory or  intrathoracic | 1 (1.7) | 101 (5.6) | 0.3723 | 102 (5.5) |
| Bone or connective tissue | 0 (0) | 28 (1.5) | 1.0000 | 28 (1.5) |
| Melanoma | 0 (0) | 42 (2.3) | 0.6411 | 42 (2.2) |
| Other non-epithelial skin | 1 (1.7) | 59 (3.3) | 1.0000 | 60 (3.2) |
| Breast | 2 (3.4) | 71 (3.9) | 1.0000 | 73 (3.9) |
| Uterus | 1 (1.7) | 31 (1.7) | 1.0000 | 32 (1.7) |
| Cervix | 1 (1.7) | 57 (3.1) | 1.0000 | 58 (3.1) |
| Ovary | 1 (1.7) | 32 (1.8) | 1.0000 | 33 (1.8) |
| Other female genital | 0 (0) | 13 (0.7) | 1.0000 | 13 (0.7) |
| Prostate | 1 (1.7) | 52 (2.9) | 1.0000 | 53 (2.8) |
| Testis | 0 (0) | 5 (0.3) | 1.0000 | 5 (0.3) |
| Other male genital | 0 (0) | 2 (0.1) | 1.0000 | 2 (0.1) |
| Bladder | 0 (0) | 32 (1.8) | 0.6231 | 32 (1.7) |
| Kidney and renal pelvis | 1 (1.7) | 18 (1.0) | 0.4573 | 19 (1.0) |
| Other urinary | 0 (0) | 7 (0.4) | 1.0000 | 7 (0.4) |
| Brain and nervous system | 0 (0) | 8 (0.4) | 1.0000 | 8 (0.4) |
| Thyroid | 0 (0) | 9 (0.5) | 1.0000 | 9 (0.5) |
| Other/unspecified primary | 1 (1.7) | 87 (4.8) | 0.5233 | 88 (4.7) |
| Head and neck | 0 (0) | 60 (3.3) | 0.2594 | 60 (3.2) |
| Devices |  |  |  |  |
| Ventilator | 3 (5.1) | 58 (3.2) | 0.4386 | 61 (3.3) |
| Permanent central line | 22 (37.3) | 594 (32.8) | 0.4648 | 616 (32.9) |
| Temporary central line | 13 (22.0) | 486 (26.8) | 0.4159 | 499 (26.6) |
| Dialysis catheter | 6 (10.2) | 155 (8.5) | 0.6613 | 161 (8.6) |
| Urinary catheter | 3 (5.1) | 77 (4.2) | 0.7379 | 80 (4.3) |
| Select Laboratory Values |  |  |  |  |
| Absolute lymphocyte count,  median (IQR) | 3.0 (16.2) | 4.8 (8.0) | 0.4100 | 4.8 (8.0) |
| Hemoglobin, median (IQR) | 7.7 (1.6) | 8.3 (1.8) | <0.0001 | 8.3 (1.8) |
| Creatinine, median (IQR) | 0.8 (0.6) | 1.0 (1.1) | 0.0795 | 1.0 (1.1) |
| Aspartate aminotransferase,  median (IQR) | 25.5 (25.0) | 32.0 (35.5) | 0.0083 | 32.0 (36.0) |
| Alanine aminotransferase,  median (IQR) | 26.0 (35.0) | 28.0 (36.0) | 0.7472 | 28.0 (36.0) |
| Total bilirubin,  median(IQR) | 0.6 (0.8) | 0.5 (0.9) | 0.2185 | 0.5 (0.9) |
| In-hospital Procedures |  |  |  |  |
| Hemodialysis | 3 (5.1) | 90 (5.0) | 1.0000 | 93 (5.0) |
| Any gastrointestinal  procedure | 2 (3.4) | 170 (9.4) | 0.1174 | 172 (9.2) |
| Parenteral nutrition | 5 (8.5) | 71 (3.9) | 0.0877 | 76 (4.1) |
| Incision/excision of CNS | 0 (0) | 10 (0.6) | 1.0000 | 10 (0.5) |
| Extracranial ventricular  shunt | 0 (0) | 3 (0.2) | 1.0000 | 3 (0.2) |
| Laminectomy | 0 (0) | 8 (0.4) | 1.0000 | 8 (0.4) |
| Diagnostic spinal tap | 1 (1.7) | 67 (3.7) | 0.7219 | 68 (3.6) |
| Spinal canal procedures | 0 (0) | 18 (1.0) | 1.0000 | 18 (1.0) |
| Decompression of  peripheral nerve | 0 (0) | 1 (0.1) | 1.0000 | 1 (0.05) |
| Other nervous system  procedures | 0 (0) | 1 (0.1) | 1.0000 | 1 (0.05) |
| Other OR nervous system  procedures | 0 (0) | 9 (0.5) | 1.0000 | 9 (0.5) |
| Lobectomy | 0 (0) | 2 (0.1) | 1.0000 | 2 (0.1) |
| Chest incision | 0 (0) | 56 (3.1) | 0.4197 | 56 (3.0) |
| Heart valve procedures | 0 (0) | 14 (0.8) | 1.0000 | 14 (0.8) |
| CABG | 0 (0) | 5 (0.3) | 1.0000 | 5 (0.3) |
| Pacemaker procedure | 0 (0) | 15 (0.8) | 1.0000 | 15 (0.8) |
| Other OR heart procedures | 0 (0) | 19 (1.1) | 1.0000 | 19 (1.0) |
| ECMO | 0 (0) | 25 (1.4) | 1.0000 | 25 (1.3) |
| Aortic procedures | 0 (0) | 5 (0.3) | 1.0000 | 5 (0.3) |
| Peripheral vascular bypass | 0 (0) | 7 (0.4) | 1.0000 | 7 (0.4) |
| Other vascular bypass | 0 (0) | 4 (0.2) | 1.0000 | 4 (0.2) |
| AVF for dialysis | 0 (0) | 10 (0.6) | 1.0000 | 10 (0.5) |
| Spleen procedures | 0 (0) | 10 (0.6) | 1.0000 | 10 (0.5) |
| Gastrostomy | 1 (1.7) | 71 (3.9) | 0.7256 | 72 (3.8) |
| Colostomy | 1 (1.7) | 69 (3.8) | 0.7235 | 70 (3.7) |
| Enterostomy | 0 (0) | 19 (1.1) | 1.0000 | 19 (1.0) |
| Gastrectomy | 0 (0) | 2 (0.1) | 1.0000 | 2 (0.1) |
| Small bowel resection | 0 (0) | 30 (1.7) | 1.0000 | 30 (1.6) |
| Colorectal resection | 0 (0) | 24 (1.3) | 1.0000 | 24 (1.3) |
| Appendectomy | 0 (0) | 2 (0.1) | 1.0000 | 2 (0.1) |
| Cholecystectomy | 0 (0) | 12 (0.7) | 1.0000 | 12 (0.6) |
| Other hernia repair | 0 (0) | 11 (0.6) | 1.0000 | 11 (0.6) |
| Laparoscopy (GI) | 0 (0) | 2 (0.1) | 1.0000 | 2 (0.1) |
| Exploratory laparotomy | 0 (0) | 6 (0.3) | 1.0000 | 6 (0.3) |
| Adhesion lysis | 0 (0) | 34 (1.9) | 0.6244 | 34 (1.8) |
| Other adhesion | 1 (1.7) | 21 (1.2) | 0.5075 | 22 (1.2) |
| Other lower GI procedures | 0 (0) | 45 (2.5) | 0.3993 | 45 (2.4) |
| Other GI procedures | 0 (0) | 45 (2.5) | 0.3993 | 45 (2.4) |
| Nephrectomy | 0 (0) | 4 (0.2) | 1.0000 | 4 (0.2) |
| Kidney transplant | 0 (0) | 1 (1.1) | 1.0000 | 1 (0.05) |
| Oophorectomy | 0 (0) | 4 (0.2) | 1.0000 | 4 (0.2) |
| Cesarean section | 0 (0) | 1 (0.1) | 1.0000 | 1 (0.05) |
| Organ transplantation | 0 (0) | 7 (0.4) | 1.0000 | 7 (0.4) |
| Medications Ordered Within 90 Days Prior to *Candida* BSI | | | | |
| Echinocandins | 10 (17.0) | 86 (4.7) | 0.0006 | 96 (5.1) |
| Anidulafungin | 3 (5.1) | 25 (1.4) | 0.0557 | 28 (1.5) |
| Caspofungin | 1 (1.7) | 13 (0.7) | 0.3622 | 14 (0.8) |
| Micafungin | 6 (10.2) | 48 (2.7) | 0.0060 | 54 (2.9) |
| Nystatin | 6 (10.2) | 101 (5.6) | 0.1457 | 107 (5.7) |
| Antibiotics | 48 (81.4) | 1,316 (72.6) | 0.1344 | 1,364 (72.8) |
| Aminoglycosides | 2 (3.4) | 68 (3.8) | 1.0000 | 70 (3.7) |
| Anthracycline | 6 (10.2) | 53 (2.9) | 0.0093 | 59 (3.2) |
| Carbapenems | 16 (27.1) | 327 (18.0) | 0.0756 | 343 (18.3) |
| Cephalosporins | 27 (45.8) | 799 (44.1) | 0.7938 | 826 (44.1) |
| Cyclic lipopeptides | 3 (5.1) | 81 (4.5) | 0.7459 | 84 (4.5) |
| Dapsone | 6 (10.2) | 25 (1.4) | 0.0003 | 31 (1.7) |
| Glycopeptide antibiotic | 28 (47.5) | 760 (41.9) | 0.3945 | 788 (42.1) |
| Lincomycin derivatives | 2 (3.4) | 60 (3.3) | 1.0000 | 62 (3.3) |
| Macrolide | 4 (6.8) | 161 (8.9) | 0.5762 | 165 (8.8) |
| Monobactam | 3 (5.1) | 22 (1.2) | 0.0417 | 25 (1.3) |
| Nitroimidazoles | 14 (23.7) | 418 (23.0) | 0.9021 | 432 (23.1) |
| Oxazolidinones | 14 (23.7) | 204 (11.3) | 0.0033 | 218 (11.6) |
| Penicillin/β-lactamase  inhibitors | 18 (30.5) | 300 (16.5) | 0.0049 | 318 (17.0) |
| Penicillins | 3 (5.1) | 89 (4.9) | 0.7646 | 92 (4.9) |
| Quinolones | 19 (32.2) | 353 (19.5) | 0.0158 | 372 (19.9) |
| Sulfonamides | 11 (18.6) | 132 (7.3) | 0.0040 | 143 (7.6) |
| Tetracyclines | 2 (3.4) | 55 (3.0) | 0.7000 | 57 (3.0) |
| Topical antiseptics | 11 (18.6) | 280 (15.4) | 0.5032 | 291 (15.5) |
| Amphotericin B | 0 (0) | 0 (0) | n/a | 0 |
| Amphotericin B lipid  complex | 0 (0) | 1 (0.1) | 1.0000 | 1 (0.05) |
| Liposomal amphotericin B | 0 (0) | 1 (0.1) | 1.0000 | 1 (0.05) |
| Terbinafine | 0 (0) | 1 (0.1) | 1.0000 | 1 (0.05) |
| Chemotaxis inhibitor | 0 (0) | 3 (0.2) | 1.0000 | 3 (0.2) |
| Growth factor inhibitor | 0 (0) | 3 (0.2) | 1.0000 | 3 (0.2) |
| Tumor specific inhibitors | 1 (1.7) | 11 (0.6) | 0.3197 | 12 (0.6) |
| Antiparasitic | 0 (0) | 7 (0.4) | 1.0000 | 7 (0.4) |
| Interferons | 0 (0) | 2 (0.1) | 1.0000 | 2 (0.1) |
| Polymyxin | 0 (0) | 22 (1.2) | 1.0000 | 22 (1.2) |
| Protease inhibitors | 0 (0) | 1 (0.1) | 1.0000 | 1 (0.05) |
| Rifamycin | 0 (0) | 64 (3.5) | 0.2640 | 64 (3.4) |
| Streptogrammins | 0 (0) | 3 (0.2) | 1.0000 | 3 (0.2) |
| Thalidomide | 0 (0) | 2 (0.1) | 1.0000 | 2 (0.1) |
| Urinary anti-infectives | 0 (0) | 8 (0.4) | 1.0000 | 8 (0.4) |

NOTE: CK, *Candida krusei;* HIV, human immunodeficiency virus; AIDS, acquired immune deficiency syndrome; AST, aspartate aminotransferase; CNS, central nervous system; OR, operating room; CABG, coronary artery bypass graft; ECMO, extracorporeal membrane oxygenation; AVF, arteriovenous fistula; GI, gastrointestinal; TNF, tumor necrosis factor.

**Supplementary Table 3.** Univariate logistic regression predicting *Candida krusei* versus other *Candida* bloodstream infection.

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristica | Coefficient | Odds ratio (95% CI) | P-value |
| Demographics |  |  |  |
| Sex (reference=male) | -0.2236 | 0.800 (0.473, 1.351) | 0.4034 |
| Race (reference=non-black) | -0.8544 | 0.426 (0.214, 0.846) | 0.0148 |
| Age, median (IQR) | -0.00325 | 0.997 (0.982, 1.012) | 0.6757 |
| BMI, median (IQR) | -0.0123 | 0.988 (0.952, 1.025) | 0.5129 |
| Comorbidities |  |  |  |
| Hypertension | 0.0909 | 1.095 (0.650, 1.846) | 0.7331 |
| Diabetes | -0.1871 | 0.829 (0.436, 1.578) | 0.5686 |
| Coronary artery disease | -0.4585 | 0.632 (0.308, 1.297) | 0.2109 |
| Chronic liver disease | -1.4654 | 0.231 (0.032, 1.681) | 0.1479 |
| Chronic kidney disease | -0.3786 | 0.685 (0.308, 1.522) | 0.3529 |
| Elixhauser Comorbidities |  |  |  |
| Congestive heart failure | 0.0253 | 1.026 (0.138, 7.648) | 0.9803 |
| Valvular disease | -0.2157 | 0.806 (0.109, 5.971) | 0.8328 |
| Peripheral vascular disorder | -1.0198 | 0.361 (0.087, 1.490) | 0.1588 |
| Hypertension | 0.0864 | 1.090 (0.647, 1.838) | 0.7459 |
| Other neurological disorder | 0.6244 | 1.867 (0.830, 4.198) | 0.1309 |
| Chronic pulmonary disease | -1.7388 | 0.176 (0.043, 0.724) | 0.0160 |
| Hypothyroidism | 0.7007 | 2.015 (1.052, 3.862) | 0.0347 |
| Renal failure | -0.3298 | 0.719 (0.338, 1.529) | 0.3917 |
| Liver disease | -0.8383 | 0.432 (0.134, 1.394) | 0.1604 |
| Lymphoma | 1.8307 | 6.238 (0.717, 54.247) | 0.0971 |
| Cardiac arrhythmias | 0.1626 | 1.177 (0.360, 3.841) | 0.7876 |
| Coagulopathy | 0.8283 | 2.290 (1.318, 3.976) | 0.0033 |
| Obesity | -0.1425 | 0.867 (0.342, 2.197) | 0.7638 |
| Blood loss anemia | 0.4941 | 1.639 (0.641, 4.191) | 0.3023 |
| Deficiency anemia | 0.5073 | 1.661 (0.987, 2.794) | 0.0558 |
| Alcohol abuse | 0.7971 | 2.219 (0.287, 17.145) | 0.4448 |
| Depression | 0.4140 | 1.513 (0.860, 2.662) | 0.1509 |
| Other Potential Predisposing Factors | | | |
| Bone marrow transplant | 2.4778 | 11.915 (5.327, 26.651) | <0.0001 |
| Solid organ transplant | 0.8707 | 2.389 (0.307, 18.567) | 0.4053 |
| Kidney Transplant | 2.3428 | 10.410 (1.067, 101.584) | 0.0438 |
| Cancer chemotherapy | 1.4869 | 4.424 (2.274, 8.606) | <0.0001 |
| Radiation therapy | 0.3411 | 1.406 (0.187, 10.599) | 0.7406 |
| TPN within 30 days | 0.2893 | 1.335 (0.766, 2.329) | 0.3079 |
| Enteral/parenteral nutrition | 0.8211 | 2.273 (0.882, 5.857) | 0.0890 |
| Preceding bacterial infection | -0.1402 | 0.869 (0.470, 1.607) | 0.6547 |
| Concurrent bacterial infection | 0.2121 | 1.236 (0.698, 2.190) | 0.4673 |
| Preceding or concurrent | -0.1746 | 0.840 (0.419, 1.683) | 0.6228 |
| Malignancy |  |  |  |
| Any | -0.1797 | 0.836 (0.472, 1.480) | 0.5380 |
| Leukemia | 2.3322 | 10.301 (6.035, 17.582) | <0.0001 |
| Lymphoma | 1.4775 | 4.382 (2.408, 7.976) | <0.0001 |
| Hematologic | 2.5073 | 12.272 (6.893, 21.846) | <0.0001 |
| Gastrointestinal | 0.2473 | 1.281 (0.599, 2.737) | 0.5235 |
| Thorax | -1.2908 | 0.275 (0.038, 2.005) | 0.2028 |
| Female reproductive | -0.3973 | 0.672 (0.162, 2.797) | 0.5850 |
| Male reproductive | -0.6677 | 0.513 (0.070, 3.766) | 0.5116 |
| Urinary | -0.5375 | 0.584 (0.079, 4.299) | 0.5976 |
| Gastric | 1.1467 | 3.148 (0.719, 13.789) | 0.1282 |
| Colon | 0.6456 | 1.907 (0.744, 4.892) | 0.1791 |
| Rectum/Anus | 0.0967 | 1.102 (0.262, 4.625) | 0.8949 |
| Liver/bile duct | 0.1320 | 1.141 (0.152, 8.542) | 0.8977 |
| Bronchus/lung | -1.0961 | 0.334 (0.046, 2.440) | 0.2799 |
| Other respiratory/intrathoracic | -1.2296 | 0.292 (0.040, 2.133) | 0.2252 |
| Other non-epithelial skin | -0.6677 | 0.513 (0.070, 3.766) | 0.5116 |
| Breast | -0.1492 | 0.861 (0.206, 3.599) | 0.8380 |
| Uterus | -0.00835 | 0.992 (0.133, 7.389) | 0.9935 |
| Cervix | -0.6321 | 0.531 (0.072, 3.905) | 0.5345 |
| Ovary | -0.0399 | 0.961 (0.129, 7.148) | 0.9689 |
| Prostate | -0.5375 | 0.584 (0.079, 4.299) | 0.5976 |
| Kidney/renal pelvis | 0.5426 | 1.720 (0.226, 13.106) | 0.6005 |
| Other/unspecified primary | -1.0722 | 0.342 (0.047, 2.500) | 0.2906 |
| Secondary | -0.3746 | 0.688 (0.309, 1.528) | 0.3581 |
| Unspecified site | 0.2313 | 1.260 (0.448, 3.547) | 0.6614 |
| Unspecified nature | 0.7537 | 2.125 (1.056, 4.276) | 0.0346 |
| Hodgkin’s lymphoma | -0.1320 | 0.876 (0.118, 6.507) | 0.8974 |
| Non-Hodgkin’s lymphoma | 1.5362 | 4.647 (2.516, 8.584) | <0.0001 |
| Multiple myeloma | 1.5202 | 4.573 (1.727, 12.110) | 0.0022 |
| Central Lines |  |  |  |
| Ventilator | 0.4836 | 1.622 (0.493, 5.335) | 0.4259 |
| Permanent central line | 0.1999 | 1.221 (0.714, 2.089) | 0.4654 |
| Temporary central line | -0.2583 | 0.772 (0.414, 1.442) | 0.4174 |
| Dialysis catheter | 0.1921 | 1.212 (0.513, 2.864) | 0.6615 |
| Urinary catheter | 0.1895 | 1.209 (0.370, 3.948) | 0.7537 |
| Any indwelling catheter | 0.0684 | 1.071 (0.637, 1.800) | 0.7962 |
| Vital Signs |  |  |  |
| Temperature, median (IQR) | 0.1205 | 1.128 (0.888, 1.433) | 0.3235 |
| Heart rate, median (IQR) | 0.0124 | 1.013 (1.002, 1.023) | 0.0182 |
| Respiratory rate, median (IQR) | 0.0452 | 1.046 (1.013, 1.081) | 0.0063 |
| Laboratory Values |  |  |  |
| Absolute lymphocyte count,  median (IQR) | 0.0166 | 1.017 (1.006, 1.028) | 0.0034 |
| Absolute neutrophil count,  median (IQR) | 0.0141 | 1.014 (0.996, 1.032) | 0.1237 |
| Neutropenia (ANC<500) | 2.0.388 | 7.681 (4.382, 13.465) | <0.0001 |
| Platelets, median (IQR) | -0.00876 | 0.991 (0.988, 0.995) | <0.0001 |
| Hemoglobin, median (IQR) | -0.4003 | 0.670 (0.560, 0.802) | <0.0001 |
| Creatinine, median (IQR) | -0.1361 | 0.873 (0.685, 1.112) | 0.2707 |
| Dichotomized creatinine  (Reference: <1) | -0.4932 | 0.611 (0.352, 1.060) | 0.0799 |
| Aspartate aminotransferase,  median (IQR) | -0.00302 | 0.997 (0.991, 1.003) | 0.2997 |
| Alanine aminotransferase,  median (IQR) | -0.00124 | 0.999 (0.995, 1.003) | 0.5162 |
| Total bilirubin, median (QR) | -0.0101 | 0.990 (0.923, 1.062) | 0.7769 |
| In-hospital Procedures |  |  |  |
| Any GI procedure | -1.0808 | 0.339 (0.082, 1.402) | 0.1354 |
| Diagnostic spinal tap | -0.7992 | 0.450 (0.061, 3.295) | 0.4315 |
| Hemodialysis | 0.0261 | 1.026 (0.315, 3.342) | 0.9654 |
| Gastrostomy | -0.8593 | 0.423 (0.058, 3.100) | 0.3975 |
| Colostomy | -0.8297 | 0.436 (0.060, 3.194) | 0.4141 |
| Other adhesion | 0.3867 | 1.472 (0.195, 11.131) | 0.7079 |
| Medications Ordered Within 90 days Prior to *Candida* Infection | | | |
| Anidulafungin | 1.3439 | 3.834 (1.124, 13.074) | 0.0318 |
| Caspofungin | 0.8707 | 2.389 (0.307, 18.567) | 0.4053 |
| Clotrimazole | 0.8707 | 2.389 (0.307, 18.567) | 0.4053 |
| Fluconazole | 1.4534 | 4.277 (2.285, 8.008) | <0.0001 |
| Micafungin | 1.4269 | 4.166 (1.708, 10.160) | 0.0017 |
| Nystatin | 0.6525 | 1.920 (0.806, 4.573) | 0.1405 |
| Voriconazole | 2.2685 | 9.665 (2.589, 36.082) | 0.0007 |
| Aminoglycosides | -0.1043 | 0.901 (0.215, 3.767) | 0.8864 |
| Anthracycline | 1.3249 | 3.762 (1.549, 9.136) | 0.0034 |
| Anti-herpes antivirals | 1.9827 | 7.263 (4.280, 12.323) | <0.0001 |
| Anti-lymphocyte antibodies | 2.8156 | 16.704 (5.521, 50.539) | <0.0001 |
| Antimetabolite | 1.9085 | 6.743 (3.897, 11.666) | <0.0001 |
| Anti-myeloid antibodies | 2.7486 | 15.621 (1.396, 174.731) | 0.0257 |
| Anti-TNF antibodies | 3.1891 | 24.266 (5.306, 110.981) | <0.0001 |
| Calcineurin inhibitor | 1.9622 | 7.115 (3.743, 13.524) | <0.0001 |
| Carbapenems | 0.5259 | 1.692 (0.941, 3.041) | 0.0787 |
| Cephalosporins | 0.0694 | 1.072 (0.637, 1.804) | 0.7939 |
| Corticosteroid | 1.4337 | 4.194 (2.460, 7.149) | <0.0001 |
| Cyclic lipopeptides | 0.1365 | 1.146 (0.351, 3.740) | 0.8211 |
| Cytotoxic agent | 1.7212 | 5.592 (2.259, 13.841) | 0.0002 |
| Dapsone | 2.0920 | 8.101 (3.190, 20.572) | <0.0001 |
| Glycopeptide antibiotic | 0.2253 | 1.253 (0.745, 2.106) | 0.3953 |
| Lincomycin derivatives | 0.0257 | 1.026 (0.245, 4.301) | 0.9720 |
| Macrolide | -0.2916 | 0.747 (0.267, 2.088) | 0.5781 |
| Mitotic inhibitors | 1.7869 | 5.971 (2.554, 13.955) | <0.0001 |
| Monobactam | 1.4733 | 4.364 (1.269, 15.008) | 0.0194 |
| mTOR inhibitor | 1.9297 | 6.888 (1.925, 24.649) | 0.0030 |
| Nitroimidazoles | 0.0386 | 1.039 (0.565, 1.912) | 0.9011 |
| Oxazolidinones | 0.8983 | 2.455 (1.324, 4.552) | 0.0043 |
| Penicillin beta-lactamase  inhibitors | 0.7957 | 2.216 (1.256, 3.910) | 0.0060 |
| Penicillins | 0.0382 | 1.039 (0.319, 3.383) | 0.9494 |
| Quinolones | 0.6760 | 1.966 (1.125, 3.436) | 0.0176 |
| Sulfonamides | 1.0716 | 2.920 (1.481, 5.757) | 0.0020 |
| Tetracyclines | 0.1153 | 1.122 (0.267, 4.714) | 0.8749 |
| Topical antiseptics | 0.2277 | 1.256 (0.644, 2.448) | 0.5037 |
| Tumor specific inhibitor | 1.0389 | 2.826 (0.359, 22.256) | 0.3238 |
| Any prior fungin use | 1.4112 | 4.101 (2.009, 8.373) | 0.0001 |
| Any prior azole use | 1.5926 | 4.917 (2.727, 8.865) | <0.0001 |
| Any prior monoclonal  antibody use | 2.8694 | 17.627 (7.216, 43.060) | <0.0001 |
| Any prior antibiotic use | 0.5016 | 1.651 (0.851, 3.205) | 0.1383 |

a Unless otherwise specified, characteristics are dichotomized and reported as absolute frequency (percent).

NOTE: CI, confidence interval; BMI, body mass index; TPN, total parenteral nutrition; AST, aspartate aminotransferase; GI, gastrointestinal; TNF, tumor necrosis factor.

**Supplementary Table 4.** Univariate Cox proportional hazards model predicting mortality in patients with *Candida* bloodstream infection.

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristica | Coefficient | Hazards ratio (95% CI) | P-value |
| Demographics |  |  |  |
| Sex (ref=male) | -0.01659 | 0.984 (0.855, 1.131) | 0.8161 |
| Race (ref=non-black) | -0.10578 | 0.900 (0.773, 1.047) | 0.1724 |
| Age, median (IQR) | 0.01821 | 1.018 (1.014, 1.023) | <0.0001 |
| BMI, median (IQR) | 0.00967 | 1.010 (1.000, 1.019) | 0.0438 |
| Comorbidities |  |  |  |
| Hypertension | 0.12428 | 1.132 (0.983, 1.304) | 0.0841 |
| Diabetes | -0.14579 | 0.864 (0.729, 1.024) | 0.0924 |
| Coronary artery disease | 0.46673 | 1.595 (1.364, 1.864) | <0.0001 |
| Chronic liver disease | 0.76089 | 2.140 (1.706, 2.684) | <0.0001 |
| Chronic kidney disease | 0.38037 | 1.463 (1.230, 1.740) | <0.0001 |
| Elixhauser Comorbidities |  |  |  |
| Congestive heart failure | -0.14712 | 0.863 (0.488, 1.527) | 0.6131 |
| Valvular disease | 0.15709 | 1.170 (0.733, 1.867) | 0.5100 |
| Peripheral vascular disorder | -0.30656 | 0.736 (0.561, 0.966) | 0.0270 |
| Hypertension | -0.18546 | 0.831 (0.719, 0.959) | 0.0116 |
| Other neurological disorder | -0.51577 | 0.597 (0.429, 0.831) | 0.0022 |
| Chronic pulmonary disease | -0.14234 | 0.867 (0.712, 1.057) | 0.1584 |
| Hypothyroidism | -0.16034 | 0.852 (0.678, 1.071) | 0.1694 |
| Renal failure | -0.28910 | 0.749 (0.615, 0.911) | 0.0039 |
| Liver disease | 0.06269 | 1.065 (0.852, 1.330) | 0.5814 |
| Peptic ulcer disease | -0.32501 | 0.723 (0.102, 5.130) | 0.7452 |
| HIV/AIDS | -0.15955 | 0.853 (0.405, 1.794) | 0.6743 |
| Lymphoma | 1.17542 | 3.240 (1.451, 7.232) | 0.0041 |
| Cardiac arrhythmias | 0.50988 | 1.665 (1.250, 2.217) | 0.0005 |
| Solid tumor without metastasis | 0.15006 | 1.162 (0.719, 1.879) | 0.5405 |
| Rheumatoid arthritis /  Collagen vascular disorder | -0.04201 | 0.959 (0.135, 6.810) | 0.9665 |
| Coagulopathy | 0.15281 | 1.165 (0.980, 1.385) | 0.0831 |
| Obesity | -0.65152 | 0.521 (0.389, 0.698) | <0.0001 |
| Weight loss | -0.54566 | 0.579 (0.372, 0.903) | 0.0160 |
| Blood loss anemia | -0.29118 | 0.747 (0.533, 1.049) | 0.0921 |
| Deficiency anemia | -0.32411 | 0.723 (0.621, 0.842) | <0.0001 |
| Alcohol abuse | 0.12941 | 1.138 (0.541, 2.395) | 0.7332 |
| Drug abuse | -0.65844 | 0.518 (0.194, 1.383) | 0.1890 |
| Depression | -0.54064 | 0.582 (0.482, 0.704) | <0.0001 |
| Other Potential Predisposing Factors | | | |
| Bone marrow transplant | 0.73442 | 2.084 (1.388, 3.129) | 0.0004 |
| Solid organ transplant | -2.03675 | 0.130 (0.018, 0.923) | 0.0414 |
| Lung transplant | -0.91554 | 0.400 (0.056, 2.843) | 0.3600 |
| Cancer chemotherapy | 0.80483 | 2.236 (1.767, 2.830) | <0.0001 |
| Radiation therapy | 0.49836 | 1.646 (0.951, 2.848) | 0.0748 |
| HIV | 0.03800 | 1.039 (0.557, 1.938) | 0.9049 |
| Burns | -0.62639 | 0.535 (0.239, 1.193) | 0.1264 |
| TPN within 30 days | 0.01677 | 1.017 (0.868, 1.191) | 0.8354 |
| Enteral/parenteral nutrition | -0.23511 | 0.790 (0.539, 1.160) | 0.2299 |
| Preceding bacterial infection | 0.17403 | 1.190 (0.993, 1.426) | 0.0592 |
| Concurrent bacterial infection | 0.13542 | 1.145 (0.982, 1.334) | 0.0830 |
| Preceding or concurrent  bacterial infection | 0.16282 | 1.177 (0.956, 1.449) | 0.1249 |
| Malignancy |  |  |  |
| Any | 0.12637 | 1.135 (0.980, 1.314) | 0.0910 |
| Leukemia | 0.44315 | 1.558 (1.292, 1.878) | <0.0001 |
| Lymphoma | 0.27602 | 1.318 (1.048, 1.656) | 0.0180 |
| Hematologic | 0.38767 | 1.474 (1.250, 1.736) | <0.0001 |
| Gastrointestinal | 0.19857 | 1.220 (0.990, 1.503) | 0.0625 |
| Thorax | 0.20316 | 1.225 (0.927, 1.619) | 0.1532 |
| Female reproductive | -0.08841 | 0.915 (0.658, 1.273) | 0.5996 |
| Male reproductive | 0.12219 | 1.130 (0.770, 1.659) | 0.5327 |
| Urinary | -0.32303 | 0.724 (0.448, 1.170) | 0.1875 |
| Esophagus | -0.08133 | 0.922 (0.438, 1.940) | 0.8304 |
| Gastric | -0.06093 | 0.941 (0.488, 1.814) | 0.8557 |
| Colon | 0.01617 | 1.016 (0.739, 1.397) | 0.9206 |
| Rectum/Anus | -0.36181 | 0.696 (0.447, 1.085) | 0.1100 |
| Liver/bile duct | 0.47276 | 1.604 (0.978, 2.632) | 0.0613 |
| Pancreas | 0.76102 | 2.140 (1.425, 3.214) | 0.0002 |
| Other GI/peritoneum | 0.33199 | 1.394 (0.862, 2.253) | 0.1755 |
| Bronchus/lung | 0.15970 | 1.173 (0.863, 1.595) | 0.3086 |
| Other respiratory/intrathoracic | 0.19501 | 1.215 (0.913, 1.618) | 0.1821 |
| Bone/connective tissue | -0.36466 | 0.694 (0.360, 1.339) | 0.2764 |
| Melanomas | 0.06180 | 1.064 (0.675, 1.676) | 0.7900 |
| Other non-epithelial skin | 0.13826 | 1.148 (0.787, 1.674) | 0.4725 |
| Breast | 0.03392 | 1.035 (0.726, 1.473) | 0.8509 |
| Uterus | 0.01993 | 1.020 (0.601, 1.731) | 0.9411 |
| Cervix | -0.46757 | 0.627 (0.387, 1.013) | 0.0565 |
| Ovary | 0.08324 | 1.087 (0.662, 1.783) | 0.7418 |
| Other female genital | -0.30872 | 0.734 (0.275, 1.961) | 0.5378 |
| Prostate | 0.13988 | 1.150 (0.766, 1.727) | 0.4999 |
| Testis | -0.96755 | 0.380 (0.054, 2.697) | 0.3332 |
| Other male genital | 1.59291 | 4.918 (1.225, 19.742) | 0.0247 |
| Bladder | 0.12806 | 1.137 (0.670, 1.928) | 0.6349 |
| Kidney/renal pelvis | -0.87393 | 0.417 (0.156, 1.114) | 0.0812 |
| Other urinary | -1.28005 | 0.278 (0.039, 1.976) | 0.2008 |
| Thyroid | -0.69356 | 0.500 (0.125, 2.002) | 0.3273 |
| Other/unspecified primary | -0.24594 | 0.782 (0.546, 1.120) | 0.1795 |
| Secondary | 0.39608 | 1.486 (1.251, 1.764) | <0.0001 |
| Unspecified site | 0.35261 | 1.423 (1.089, 1.859) | 0.0098 |
| Unspecified nature | 0.10344 | 1.109 (0.874, 1.407) | 0.3942 |
| Head and neck | 0.03872 | 1.039 (0.708, 1.526) | 0.8432 |
| Hodgkin’s lymphoma | 0.18162 | 1.199 (0.751, 1.914) | 0.4462 |
| Non-Hodgkin’s lymphoma | 0.18604 | 1.204 (0.939, 1.545) | 0.1426 |
| Multiple myeloma | 0.28575 | 1.331 (0.863, 2.053) | 0.1962 |
| Central Lines |  |  |  |
| Ventilator | 0.13536 | 1.145 (0.785, 1.670) | 0.4818 |
| Permanent central line | -0.16422 | 0.849 (0.730, 0.987) | 0.0331 |
| Temporary central line | 0.22609 | 1.254 (1.076, 1.460) | 0.0037 |
| Dialysis | 0.30981 | 1.363 (1.085, 1.713) | 0.0079 |
| Urinary catheter | -0.03233 | 0.968 (0.683, 1.372) | 0.8557 |
| Any indwelling catheter | 0.04924 | 1.050 (0.913, 1.208) | 0.4905 |
| Vital Signs |  |  |  |
| Temperature, median (IQR) | -0.25121 | 0.778 (0.725, 0.835) | <0.0001 |
| Heart rate, median (IQR) | 0.00969 | 1.010 (1.007, 1.013) | <0.0001 |
| Respiratory rate, median (IQR) | 0.03572 | 1.036 (1.026, 1.047) | <0.0001 |
| Laboratory Values |  |  |  |
| Absolute lymphocyte count,  median (IQR) | -0.0002094 | 1.000 (0.995, 1.005) | 0.9315 |
| Absolute neutrophil count,  median (IQR) | 0.00757 | 1.008 (1.002, 1.013) | 0.0097 |
| Platelets, median (IQR) | -0.00371 | 0.996 (0.996, 0.997) | <0.0001 |
| Hemoglobin, median (IQR) | -0.17694 | 0.838 (0.800, 0.877) | <0.0001 |
| Creatinine, median (IQR) | 0.07516 | 1.078 (1.042, 1.115) | <0.0001 |
| Dichotomized creatinine  (Reference: <1) | 0.67929 | 1.972 (1.706, 2.280) | <0.0001 |
| Aspartate aminotransferase,  median (IQR) | 0.0007161 | 1.001 (1.001, 1.001) | <0.0001 |
| Alanine aminotransferase,  median (IQR) | 0.0008797 | 1.001 (1.001, 1.001) | <0.0001 |
| Total bilirubin, median (IQR) | 0.06239 | 1.064 (1.052, 1.077) | <0.0001 |
| In-hospital Procedures |  |  |  |
| Any GI procedure | -0.11697 | 0.890 (0.691, 1.145) | 0.3631 |
| Incision/excision of CNS | -0.88785 | 0.412 (0.103, 1.648) | 0.2097 |
| Laminectomy | -0.72462 | 0.485 (0.121, 1.940) | 0.3060 |
| Diagnostic spinal tap | 0.50431 | 1.656 (1.200, 2.285) | 0.0021 |
| Spinal canal procedures | 0.14299 | 1.154 (0.575, 2.315) | 0.6874 |
| Other OR nervous  system procedures | -0.73013 | 0.482 (0.120, 1.930) | 0.3024 |
| Lobectomy | 1.56527 | 4.784 (1.193, 19.186) | 0.0272 |
| Chest incision | 0.85866 | 2.360 (1.717, 3.245) | <0.0001 |
| Heart valve procedures | 0.49013 | 1.633 (0.846, 3.149) | 0.1438 |
| CABG | 1.13133 | 3.100 (1.160, 8.282) | 0.0240 |
| Pacemaker procedure | 0.56145 | 1.753 (0.939, 3.272) | 0.0778 |
| Other OR heart procedures | 0.35651 | 1.428 (0.788, 2.590) | 0.2404 |
| ECMO | 0.49934 | 1.648 (1.004, 2.703) | 0.0481 |
| Aortic procedures | 1.37764 | 3.966 (1.484, 10.599) | 0.0060 |
| Peripheral vascular bypass | 0.16454 | 1.179 (0.379, 3.663) | 0.7761 |
| Other vascular bypass | 0.41619 | 1.516 (0.380, 6.054) | 0.5558 |
| AVF for dialysis | 0.11834 | 1.126 (0.467, 2.712) | 0.7920 |
| Hemodialysis | 0.68842 | 1.991 (1.530, 2.590) | <0.0001 |
| Bone marrow transplant | 0.59824 | 1.819 (1.051, 3.147) | 0.0325 |
| Spleen procedures | 0.14086 | 1.151 (0.478, 2.774) | 0.7535 |
| Gastrostomy | 0.01060 | 1.011 (0.702, 1.456) | 0.9546 |
| Colostomy | 0.08114 | 1.085 (0.757, 1.553) | 0.6579 |
| Enterostomy | 0.28705 | 1.332 (0.714, 2.486) | 0.3669 |
| Gastrectomy | -0.02201 | 0.978 (0.138, 6.952) | 0.9824 |
| Small bowel resection | -0.40829 | 0.665 (0.345, 1.282) | 0.2227 |
| Colorectal resection | 0.04060 | 1.041 (0.558, 1.943) | 0.8985 |
| Cholecystectomy | 0.02338 | 1.024 (0.425, 2.466) | 0.9584 |
| Other hernia repair | -0.59410 | 0.552 (0.178, 1.715) | 0.3044 |
| Laparoscopy (GI) | -0.03160 | 0.969 (0.136, 6.884) | 0.9748 |
| Exploratory laparotomy | 0.96004 | 2.612 (0.977, 6.979) | 0.0556 |
| Adhesion lysis | -0.33801 | 0.713 (0.393, 1.293) | 0.2654 |
| Other adhesion | -0.35516 | 0.701 (0.333, 1.475) | 0.3492 |
| Other lower GI procedures | -0.32350 | 0.724 (0.434, 1.206) | 0.2144 |
| Other GI procedures | -0.29121 | 0.747 (0.448, 1.246) | 0.2638 |
| Nephrectomy | -0.57760 | 0.561 (0.079, 3.989) | 0.5638 |
| Oophorectomy | -0.68333 | 0.505 (0.071, 3.589) | 0.4947 |
| Organ transplantation | 0.40979 | 1.506 (0.564, 4.024) | 0.4137 |
| Medications Ordered Within the Prior 90 Days | | | |
| Amphotericin B lipid complex | 1.41566 | 4.119 (0.579, 29.304) | 0.1573 |
| liposomal amphotericin B | 2.33551 | 10.335 (1.454, 73.471) | 0.0196 |
| Anidulafungin | 0.23014 | 1.259 (0.755, 2.098) | 0.3773 |
| Caspofungin | 0.27123 | 1.312 (0.623, 2.760) | 0.4748 |
| Clotrimazole | 0.28733 | 1.333 (0.634, 2.804) | 0.4490 |
| Fluconazole | 0.22445 | 1.252 (0.979, 1.600) | 0.0731 |
| Itraconazole | 0.80345 | 2.233 (0.720, 6.930) | 0.1643 |
| Ketoconazole | 2.33551 | 10.335 (1.454, 73.471) | 0.0196 |
| Micafungin | 0.32855 | 1.389 (0.959, 2.012) | 0.0823 |
| Nystatin | 0.10817 | 1.114 (0.839, 1.480) | 0.4550 |
| Voriconazole | 0.56489 | 1.759 (0.877, 3.531) | 0.1120 |
| Aminoglycosides | 0.02184 | 1.022 (0.714, 1.464) | 0.9051 |
| Anthracycline | 0.17687 | 1.193 (0.824, 1.729) | 0.3499 |
| Anti-herpes antivirals | 0.51064 | 1.666 (1.399, 1.985) | <0.0001 |
| Anti-lymphocyte antibodies | 0.54985 | 1.733 (0.929, 3.234) | 0.0841 |
| Antimetabolite | 0.43792 | 1.549 (1.258, 1.908) | <0.0001 |
| Anti-myeloid antibodies | -0.25944 | 0.771 (0.109, 5.481) | 0.7954 |
| Anti-TNF antibodies | 1.15977 | 3.189 (1.428, 7.123) | 0.0047 |
| Calcineurin inhibitor | 0.57432 | 1.776 (1.356, 2.326) | <0.0001 |
| Carbapenems | 0.32461 | 1.383 (1.170, 1.636) | 0.0001 |
| Cephalosporins | 0.30938 | 1.363 (1.185, 1.567) | <0.0001 |
| Chemotaxis inhibitor | -0.17109 | 0.843 (0.119, 5.990) | 0.8642 |
| Corticosteroid | 0.50868 | 1.663 (1.438, 1.923) | <0.0001 |
| Cyclic lipopeptides | 0.21320 | 1.238 (0.904, 1.695) | 0.1838 |
| Cytotoxic agent | 0.47582 | 1.609 (1.088, 2.379) | 0.0171 |
| Dapsone | 0.92828 | 2.530 (1.711, 3.742) | <0.0001 |
| Glycopeptide antibiotic | 0.24460 | 1.277 (1.110, 1.469) | 0.0006 |
| Growth factor inhibitor | -0.42372 | 0.655 (0.092, 4.639) | 0.6715 |
| Antiparasitic | 0.42344 | 1.527 (0.572, 4.080) | 0.3983 |
| Interferons | -0.09573 | 0.909 (0.128, 6.429) | 0.9236 |
| Lincomycin derivatives | 0.03804 | 1.039 (0.703, 1.535) | 0.8487 |
| Macrolide | 0.34379 | 1.410 (1.131, 1.758) | 0.0023 |
| Mitotic inhibitors | 0.25233 | 1.287 (0.864, 1.917) | 0.2144 |
| Monobactam | 0.22503 | 1.252 (0.724, 2.166) | 0.4210 |
| mTOR inhibitor | 0.55664 | 1.745 (0.962, 3.164) | 0.0668 |
| Nitroimidazoles | 0.28859 | 1.335 (1.139, 1.563) | 0.0004 |
| Oxazolidinones | 0.35171 | 1.421 (1.169, 1.729) | 0.0004 |
| Penicillin β-lactamase inhibitor | -0.06759 | 0.935 (0.773, 1.129) | 0.4841 |
| Penicillins | 0.19198 | 1.212 (0.897, 1.637) | 0.2111 |
| Polymyxin | 0.20088 | 1.222 (0.674, 2.217) | 0.5082 |
| Protease inhibitors | 0.60156 | 1.825 (0.257, 12.970) | 0.5477 |
| Quinolones | 0.33039 | 1.392 (1.183, 1.637) | <0.0001 |
| Rifamycin | 0.27546 | 1.317 (0.930, 1.866) | 0.1213 |
| Streptogrammins | 1.46348 | 4.321 (1.390, 13.434) | 0.0114 |
| Sulfonamides | 0.23781 | 1.268 (0.997, 1.614) | 0.0529 |
| Tetracyclines | 0.02935 | 1.030 (0.686, 1.546) | 0.8874 |
| Thalidomide | -0.04375 | 0.957 (0.135, 6.797) | 0.9651 |
| Topical antiseptics | 0.13379 | 1.143 (0.948, 1.378) | 0.1608 |
| Tumor specific inhibitor | 0.54347 | 1.722 (0.818, 3.624) | 0.1523 |
| Urinary anti-infectives | 0.26982 | 1.310 (0.544, 3.155) | 0.5474 |
| Any prior fungin use | 0.30032 | 1.350 (1.017, 1.793) | 0.0380 |
| Any prior azole use | 0.29126 | 1.338 (1.065, 1.682) | 0.0125 |
| Any prior monoclonal Ab use | 0.59061 | 1.805 (1.100, 2.962) | 0.0194 |
| Any prior antibiotic use | 0.28176 | 1.325 (1.122, 1.566) | 0.0009 |
| Microbiologic |  |  |  |
| *Candida krusei* | 0.56309 | 1.756 (1.267, 2.433) | 0.0007 |

a Unless otherwise specified, characteristics are dichotomized and reported as absolute frequency (percent).

NOTE: CI, confidence interval; BMI, body mass index; HIV, human immunodeficiency virus; AIDS, acquired immune deficiency syndrome; TPN, total parenteral nutrition; GI, gastrointestinal; AST, aspartate aminotransferase; CNS, central nervous system; OR, operating room; CABG, coronary artery bypass graft; ECMO, extracorporeal membrane oxygenation; AVF, arteriovenous fistula; TNF, tumor necrosis factor; mTOR, mechanistic target of rapamycin.

**Supplementary Figure 1.** Frequency of CK BSI cases per year, both absolute (bars) and as a proportion of all *Candida* BSI (line).

**Supplementary Figure 2.** Relative frequency of *Candida* BSI cases per year, categorized separately by species.