**Appendix Table 1: Codes Suggestive of Surgical Site Infection or Non-Infectious Wound Complication after Mastectomy**

|  |  |  |
| --- | --- | --- |
| **ICD-9-CM/ICD-10-CM diagnosis code** | **CPT-4 code** | **ICD-9-CM/ICD-10-PCS procedure code** |
| **ICD-9-CM:** 041.10, 041.11, 041.12, 041.19, 611.0, 611.3, 682.2, 682.3, 682.9, 683, 875.0, 875.1, 879.0, 879.1, 996.69, 998.32, 998.51, 998.59, 998.83  **ICD-10-CM:**  A49.01, A49.02, B95.61, B95.62, B95.7, B95.8, L02.211, L02.212, L02.213, L02.216, L02.219, L02.411, L02.412, L02.91, L03.111, L03.112, L03.121, L03.122, L03.311, L03.312, L03.313, L03.316, L03.319, L03.321, L03.322, L03.323, L03.326, L03.329, L03.90, L03.91, L04.1, L04.2, L04.9, N61, N64.1, S21.001A, S21.002A, S21.009A, S21.101A, S21.102A, S21.109A, S21.90XA, T81.31XA, T81.4XXA, T85.79XA, T86.822 | 10060, 10061, 10140, 10160, 10180, 11000, 11001, 11005, 11008, 11040–11047, 19020, 20000, 20005, 38300, 38305, 97597, 97598, 97602, 97605, 97606, A6550, A6551, E2402, K0538 | **ICD-9-CM:** 54.0, 54.3, 83.44, 83.45, 83.49, 85.91, 86.01, 86.04, 86.09, 86.22, 86.28  **ICD-10-PCS:**  0H8(5-8)XZZ, 0H9(5-8)XZZ,  0H9(T,U,V,W,X)00Z, 0H9(T,U,V,W,X)(0,3,7,8)ZZ,  0H(B,D)(5-8)XZZ, 0HJ(T,U)0ZZ, 0J9(6-9)00Z, 0J9(6-9)(0,3)ZZ, 0JB(6-9)(0,3)ZZ, 0JD(6-9)0ZZ, 0JJT0ZZ, 0JWT(0,3)(7,J,K)Z, 0KB(F,G,H,J,K,L)(0,3,4)ZZ, 0KT(F,G,H,J,L)(0,4)ZZ, 0W9(F,H,K)00Z, 0W9(F,H,K)0ZZ, 0W9(H,K)(3,4)0Z, 0W9(H,K)(3,4)ZZ, 0WBF(0,3,4,X)ZZ, 0WJ(F,H)0ZZ, 0X9(4,5)(0,3,4)0Z,  0X9(4,5)(0,3,4)ZZ, 0Y9(0,1)(0,3,4)0Z, 0Y9(0,1)(0,3,4)ZZ, 3E10(3,X)8Z, 0KB(5,6)(0,3,4)ZZ, 0KT(5,6)(0,4)ZZ, 0W9L(0,3,4)0Z, 0W9L(0,3,4)ZZ, 0X92(0,3,4)0Z, 0X92(0,3,4)ZZ, 0X93(0,3,4)0Z, 0X93(0,3,4)ZZ |

Abbreviations: CPT-4= Current Procedural Terminology, 4th edition; ICD-9-CM= International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-CM= International Classification of Diseases, Tenth Revision, Clinical Modification; ICD-10-PCS= The International Classification of Diseases, Tenth Revision, Procedure Coding System.

**Appendix Table 2: Identification of Patient Factors as Potential Risk Factors for Wound Complications After Mastectomy**

|  |  |  |  |
| --- | --- | --- | --- |
| **Condition** | **ICD-9-CM diagnosis code** | **ICD-10-CM diagnosis code** | **Generic medication name** |
| Anticoagulant medication |  |  | apixaban, dabigatran, edoxaban, enoxaparin, fondaparinux, heparin, rivaroxaban, warfarin |
| Asthma/Chronic lung disease | Elixhauser | Elixhauser | aclidinium, albuterol, arformoterol, beclomethasone, budesonide, ciclesonide, dyphylline, flunisolide, fluticasone, formoterol, indacaterol, ipratropium, levalbuterol, metaproterenol, methyprednisolone, olodaterol, pirbuterol, prednisolone, prednisone, roflumilast, salmeterol, theophylline, tiotropium, umeclidinium, vilanterol |
| Coagulopathy | Elixhauser | Elixhauser |  |
| Congestive heart failure | Elixhauser | Elixhauser | bumetanide, ethacrynic acid, furosemide, metolazone, torsemide |
| Depression | Elixhauser | Elixhauser | amitriptyline, amoxapine, bupropion, citalopram, clomipramine, desipramine, desvenlafaxine, doxepin, duloxetine, escitalopram, fluoxetine, fluvoxamine, imipramine, isocarboxazid, levomilnacipran, maprotiline, mirtazapine, nefazodone, nortriptyline, paroxetine, phenelzine, protriptyline, selegiline, sertraline, tranylcypromine, trazodone, trimipramine, venlafaxine, vilazodone, vortioxetine |
| Diabetes | Elixhauser | Elixhauser | acarbose, acetohexamide, albiglutide, alogliptin, canagliflozin, chlorpropamide, dapagliflozin, dulaglutide, empagliflozin, exenatide, gliclazide, glimepiride, glipizide, glucagon, glyburide, insulin, linagliptin, liraglutide, metformin, miglitol, nateglinide, pioglitazone, pramlintide, repaglinide, rosiglitazone, saxagliptin, sitagliptin, tolazamide, tolbutamide, troglitazone |
| Hypertension | Elixhauser | Elixhauser | acebutolol, aliskiren, alprenolol, amlodipine, atenolol, azilsartan, benazepril, bendroflumethiazide, benzthiazide, bepridil, betaxolol, bisoprolol, bucindolol, candesartan, captopril, carteolol, carvedilol, celiprolol, chlorothiazide, chlorthalidone, clevidipine, cryptenamine, cyclothiazide, dicyclomine, diltiazem, enalapril, eplerenone, eprosartan, esmolol, felodipine, fosinopril, hydralazine, hydrochlorothiazide, hydroflumethiazide, imidapril, indapamide, irbesartan, isosorbide, isradipine, labetalol, lisinopril, losartan, methyclothiazide, metolazone, metoprolol, mibefradil, moexipril, nadolol, nebivolol, nicardipine, nifedipine, nimodipine, nisoldipine, olmesartan, oxprenolol, penbutolol, perinodopril, pindolol, polythiazide, propranolol, quinapril, quinethazone, ramipril, sotalol, spironolactone, telmisartan, timolol, trandolapril, trichlormethiazide, valsartan, verapamil, zofenopril |
| Psychoses | Elixhauser | Elixhauser | actophenazine, aripiprazole, asenapine, brexpiprazole, cariprazine, chlorpromazine, chlorprothixene, clozapine, fluphenazine, haloperidol, iloperidone, loxapine, lurasidone, mesoridazine, molindone, olanzapine, paliperidone, pentaerythritol, perphenazine, phenobarbital, pimavanserin, pimozide, piperacetazine, prochlorperazine, promazine, quetiapine, risperidone, thioridazine, thiothixene, trifluoperazine, ziprasidone |
| Previous radiotherapy | V15.3, V58.0, V66.1, V67.1 | Z51.0, Z92.3 |  |
| Rheumatologic disease | 360.12, 362.12, 362.18, 363.00–363.08, 363.10–363.14, 363.20–363.22, 446.0, 446.1, 446.4, 446.5, 696.0, 696.1, 701.0, 705.83, 710.0–710.9, 714.0–714.9, 720.0–720.9, 725 | H20.82\*, H30.0\*, H30.10\*, H30.11\*, H30.12\*, H30.13\*, H30.2\*, H30.8\*, H30.9\*, H35.02\*, H35.06\*, H44.11\*, L40.\*, L73.2, L90.0, L94.0, L94.1, L94.3, M05.\*, M06.\*, M08.\*, M12.0\*, M30.\*, M31.3\*, M31.5, M31.6, M32.\*, M33.\*, M34.\*, M35.0\*, M35.1, M35.3, M35.5, M35.8, M35.9, M36.0, M36.8, M45.\*, M46.0\*, M46.1, M46.5\*, M46.8\*, M46.9\*, M488\*, M49.\* | abatacept, adalimumab, anakinra, auranofin, azathioprine, certolizumab, cyclophosphamide, etanercept, oral/injectable gold, golimumab, hydroxychloroquine, infliximab, leflunomide, methotrexate, penicillamine, rituximab, sulfasalazine, tocilizumab |

Abbreviations: ICD-9-CM= International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-CM= International Classification of Diseases, Tenth Revision, Clinical Modification.

Elixhauser refers to the classification of comorbidities using the Elixhauser comorbidity classification for ICD-9-CM (https://www.hcup-us.ahrq.gov/toolssoftware/comorbidity/comformat2012-2015.txt) and for ICD-10 (<https://www.hcup-us.ahrq.gov/toolssoftware/comorbidityicd10/comformat_icd10cm_2018.txt>).

**Appendix Table 3: Identification of Concurrent Operative Factors as Potential Risk Factors for Wound Complications After Mastectomy**

|  |  |  |
| --- | --- | --- |
|  | **ICD-9-CM procedure code** | **ICD-10-PCS procedure code** |
| Mastectomy | 85.33–85.36, 85.41–85.48 | 0HTT0ZZ, 0HTU0ZZ, 0HTV0ZZ |
| Bilateral mastectomy | 85.35, 85.36, 85.42, 85.44, 85.46, 85.48a | 0HTV0ZZa |
| Sentinel lymph node biopsy | 40.11, 40.19, 40.23 | 07B50ZZ, 07B60ZZ |
| Axillary dissection | 40.50, 40.51, 85.43, 85.45–85.48 | 07T50ZZ, 07T60ZZ |
| Flap reconstruction | 85.70–85.79 | 0HRT075, 0HRT076, 0HRT077, 0HRT078, 0HRT079, 0HRU075, 0HRU076, 0HRU077, 0HRU078, 0HRU079, 0HRV075, 0HRV076, 0HRV077, 0HRV078, 0HRV079 |
| Implant reconstruction | 85.33, 85.35, 85.53, 85.54, 85.95 | 0H0T0JZ, 0H0T0KZ, 0H0U0JZ, 0H0U0KZ, 0H0V07Z, 0H0V0JZ, 0H0V0KZ, 0HHT0NZ, 0HHU0NZ, 0HHV0NZ, 0HHW0NZ, 0HHX0NZ, 0HUT0JZ, 0HUT0KZ, 0HUU0JZ, 0HUU0KZ, 0HUV0JZ |

Abbreviations: ICD-9-CM= International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-PCS= The International Classification of Diseases, Tenth Revision, Procedure Coding System.

a Also defined as use of two unilateral mastectomy procedure codes.

**Appendix Table 4. Univariate Risk Factors for Serious Wound Complications After Mastecomy**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Risk factor** | **Category** | **Mastectomy Only** | | | **Mastectomy Plus Immediate Reconstruction** | | |
|  |  | **Serious wound complication, n (%)** | **No serious wound complication, n (%)** | ***P*** | **Serious wound complication, n (%)** | **No serious wound complication, n (%)** | ***P*** |
| **Total** |  | 30 | 719 |  | 237 | 1,173 |  |
| **Operative factors** |  |  |  |  |  |  |  |
| Bilateral mastectomy |  | 11 (36.7) | 194 (27.0) | 0.244 | 161 (67.9) | 728 (62.1) | 0.088 |
| Sentinel lymph node biopsy |  | 11 (36.7) | 364 (50.6) | 0.134 | 144 (60.8) | 742 (63.3) | 0.468 |
| Axillary dissection |  | 14 (46.7) | 233 (32.4) | 0.104 | 40 (16.9) | 210 (17.9) | 0.706 |
| **Patient factors** |  |  |  |  |  |  |  |
| Age in years | 21–35 | 2 (6.7) | 15 (2.1) | 0.352 | 23 (9.7) | 110 (9.4) | 0.779 |
|  | 36–40 | 1 (3.3) | 20 (2.8) |  | 27 (11.4) | 122 (10.4) |  |
|  | 41–45 | 2 (6.7) | 32 (4.5) |  | 29 (12.2) | 170 (14.5) |  |
|  | 46–50 | 2 (6.7) | 65 (9.0) |  | 39 (16.5) | 219 (18.7) |  |
|  | 51–55 | 2 (6.7) | 81 (11.3) |  | 38 (16.0) | 198 (16.9) |  |
|  | 56–60 | 8 (26.7) | 100 (13.9) |  | 33 (13.9) | 150 (12.8) |  |
|  | 61–65 | 2 (6.7) | 110 (15.3) |  | 28 (11.8) | 99 (8.4) |  |
|  | 66–70 | 6 (20.0) | 107 (14.9) |  | 12 (5.1) | 73 (6.2) |  |
|  | 71–75 | 2 (6.7) | 84 (11.7) |  | 7 (3.0) | 24 (2.0) |  |
|  | ≥ 76 | 3 (10.0) | 105 (14.6) |  | 1 (0.4) | 8 (0.7) |  |
| Body mass index | < 25.0 | 2 (6.7) | 200 (27.8) | <0.001 | 63 (26.6) | 480 (40.9) | <0.001 |
|  | 25.0 to <30.0 | 5 (16.7) | 196 (27.3) |  | 59 (24.9) | 355 (30.3) |  |
|  | 30.0 to <35.0 | 8 (26.7) | 152 (21.1) |  | 48 (20.3) | 187 (15.9) |  |
|  | 35.0 to <40.0 | 4 (13.3) | 99 (13.8) |  | 44 (18.6) | 101 (8.6) |  |
|  | ≥ 40.0 | 11 (36.7) | 72 (10.0) |  | 23 (9.7) | 50 (4.3) |  |
| Anticoagulant medication |  | 2 (6.7) | 42 (5.8) | 0.694a | 7 (3.0) | 19 (1.6) | 0.182a |
| Chronic lung disease (dx/rx) |  | 8 (26.7) | 122 (17.0) | 0.169 | 35 (14.8) | 157 (13.4) | 0.571 |
| Coagulopathy diagnosis |  | 1 (3.3) | 17 (2.4) | 0.525a | 3 (1.3) | 8 (0.7) | 0.408a |
| Congestive heart failure (dx/rx) |  | 7 (23.3) | 99 (13.8) | 0.175a | 10 (4.2) | 22 (1.9) | 0.027 |
| Depression (dx/rx) |  | 7 (23.3) | 194 (27.0) | 0.659 | 98 (41.4) | 291 (24.8) | <0.001 |
| Diabetes medication |  | 9 (30.0) | 124 (17.2) | 0.073 | 21 (8.9) | 54 (4.6) | 0.008 |
| Hypertension (dx/rx) |  | 24 (80.0) | 458 (63.7) | 0.068 | 98 (41.4) | 357 (30.4) | 0.001 |
| Psychoses diagnosis |  | 2 (6.7) | 16 (2.2) | 0.160a | 6 (2.5) | 10 (0.9) | 0.038a |
| Previous radiotherapy |  | 7 (23.3) | 72 (10.0) | 0.030a | 15 (6.3) | 63 (5.4) | 0.556 |
| Rheumatologic disease (dx/rx) |  | 5 (16.7) | 41 (5.7) | 0.031a | 3 (1.3) | 24 (2.0) | 0.604a |
| Smoker |  | 6 (20.0) | 102 (14.2) | 0.422a | 47 (19.8) | 120 (10.2) | <.0001 |

a *P* values based on the Fisher’s exact test.