**Supplemental Digital Content 1. ICD-9-CM Procedure and CPT-4 Codes Used to Identify Surgical Procedures**

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| **Surgical Procedure** | **ICD-9-CM Diagnosis Codes** | **CPT-4 Procedure Codes** |
| Anterior cruciate ligament reconstruction | 81.43, 81.45 | 27407, 27409, 27427–27429, 29888 |
| Cholecystectomy |  |  |
| Laparoscopic | 51.23, 51.24 | 47562–47564 |
| Open | 51.21, 51.22 | 47600, 47605, 47610 |
| Hernia repair |  |  |
| Incisional/ ventral, laparoscopic | 53.62, 53.63, 54.21\* + (53.51, 53.61, 53.59, 53.69) | 49654–49657 |
| Incisional/ ventral, open | 53.51, 53.61, 53.59, 53.69 | 49560, 49561, 49565, 49566 |
| Inguinal/femoral, laparoscopic | 17.11–17.13, 17.21–17.24, 54.21\* + (53.00–53.05, 53.10–53.17, 53.21, 53.29, 53.31, 53.39) | 49650, 49651 |
| Inguinal/femoral, open | 53.00–53.05, 53.10–53.17, 53.21, 53.29, 53.31, 53.39 | 49500, 49501, 49505, 49507, 49520, 49521, 49525, 49550, 49553, 49555, 49557 |
| Umbilical, laparoscopic | 53.42, 53.43, 54.21\* + (53.41, 53.49) | 49652, 49653 |
| Umbilical, open | 53.41, 53.49 | 49580, 49582, 49585, 49587 |
|  |  |  |
| Breast-conserving surgery | 85.20–85.23  | 19120, 19125, 19160, 19162, 19301, 19302 |
| \*Required that 54.21 be on the same claim as the open hernia ICD-9-CM procedure code |

CPT-4 indicates Current Procedural Terminology, 4th edition; ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification.

**Supplemental Digital Content 2. Codes Used to Identify Surgical Site Infection (SSI) Following Anterior Cruciate Ligament Reconstruction**

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| --- | --- | --- |
|  | **ICD-9-CM Diagnosis Codes** | **ICD-9-CM or CPT-4 Procedure Codes** |
| Knee-specific infection |
| Septic arthritis | 711.06, 711.96 |  |
| Other infection to lower leg or joint prosthesis | 711.66, 730.06, 730.16, 730.26, 730.96, 996.66, 996.67 |  |
| Incision and drainage\* |  | 27301, 27303, 27360 |
| Arthrotomy\* |  | 27310, 27330, 27331, 27334, 27335, 80.06, 80.16 |
| Arthroscopy\* |  | 29870, 29871, 29873, 29875, 29876, 29884, 80.26 |
| General infection |
| Postoperative infection | 998.5–998.59 |  |
| Infective myositis | 728.0 |  |
| Incision and drainage\* |  | 10060, 10061, 10180, 20000, 20005 |
| Removal of implant in musculoskeletal system\* |  | 20680 |
| \* Codes used in combination with a ICD-9-CM diagnosis code for cellulitis (682.6, 682.9) or *Staphylococcus aureus* infection (041.1–041.19) to indicate SSI. Diagnosis code 682.9 refers to cellulitis and abscess at an unspecified site; it was only used if it was on the same claim as a knee-specific surgical treatment procedure code or on the same claim as a general surgical treatment procedure code that was submitted by the surgeon who performed the ACL reconstruction. |

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**Supplemental Digital Content 3. Codes Used to Identify Surgical Site Infection (SSI) Following Hernia Repair and Cholecystectomy**

|  |  |  |
| --- | --- | --- |
|  | **ICD-9-CM Diagnosis Codes** | **CPT-4 Procedure Codes** |
| Abdomen-specific infection |
| Peritonitis | 567.2–567.29, 567.9 |  |
| Retroperitoneal infection | 567.3–567.39 |  |
| Infection due to internal prosthetic decide, implant, graft | 996.69\* |  |
| Incision and drainage† |  | 11005, 11008,\* 49020, 49021, 49040, 49041, 49060, 49061  |
| General infection |
| Postoperative infection | 998.5–998.59 |  |
| Incision and drainage† |  | 10060, 10061, 10180 |
| \* Code used for hernia repair only†Codes used if on the same claim as an ICD-9-CM diagnosis code for cellulitis (682.2, 682.9) to indicate SSI. Diagnosis code 682.9 refers to cellulitis and abscess at an unspecified site; it was only used if it was on the same claim as an abdomen-specific surgical treatment procedure code or on the same claim as a general surgical treatment procedure code that was submitted by the surgeon who performed the hernia repair or cholecystectomy. |

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**Supplemental Digital Content 4. Codes Used to Identify Surgical Site Infection Following Breast-Conserving Surgery**

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| --- | --- | --- | --- |
|  | **ICD-9-CM Diagnosis Codes** | **CPT-4 or HCPCS Procedure Codes** | **ICD-9-CM Procedure Codes** |
| Breast-specific infection |
| Infection | 611.0 |  |  |
| Incision/drainage\*† |  | 19020 | 85.0, 85.91 |
| General infection |
| Postoperative infection | 998.5–998.59 |  |  |
| Cellulitis† | 682.2, 682.9‡ |  |  |
| S*taphylococcus aureus*\* | 041.1–041.19§ |  |  |
| Incision/drainage\*† |  | 10060, 10061, 10140–10180, 11000, 11001, 11040–11044, 20000, 20005, A6550, A6551, E2402, K0538 | 83.44–83.49, 86.01, 86.04, 86.09, 86.22, 86.28 |
| \* Codes used in combination with an ICD-9-CM diagnosis code for cellulitis to indicate SSI † Codes used in combination with an ICD-9-CM diagnosis code for S*taphylococcus aureus* to indicate SSI‡ Diagnosis code 682.9 refers to cellulitis and abscess at an unspecified site; it was only used if on the same claim as a breast-specific incision/drainage code or coded by the patient's breast surgeon§ *S aureus* code was only used if it was coded by the patient's breast surgeon or was associated with a cellulitis code or incision/drainage code that was breast-specific |

CPT-4 indicates Current Procedural Terminology, 4th edition; HCPCS, Healthcare Common Procedure Coding System; ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification.