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Data obtained through Sentinel are intended to complement other types of evidence such as preclinical studies, clinical trials, postmarket studies, and adverse event reports, all of which are used by FDA to inform regulatory decisions regarding medical product safety. The information contained in this report is provided as part of FDA's commitment to place knowledge acquired from Sentinel in the public domain as soon as possible. Any public health actions taken by FDA regarding products involved in Sentinel queries will continue to be communicated through existing channels.

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The following report contains a description of the request, request specifications, and results from the modular program run(s).

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Overview

Date Run: October 25, 2017

Request Description: The purpose of this report was to compare the frequency of diagnoses and procedures for joint replacement using International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) versus International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) and International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10-PCS) diagnosis and procedure codes. ICD-10-CM and ICD-10-PCS code definitions were determined by mapping from ICD-9-CM code definitions using the Centers for Medicare and Medicaid Services (CMS) General Equivalence Mappings (GEMs). Forward-backward mapping (FBM) was used to map ICD-9-CM to ICD-10-CM/PCS codes.¹

Sentinel Modular Program Tool Used: Cohort Identification and Descriptive Analysis (CIDA) tool, version 5.0.5

Data Source: This request was run against data from 12 Data Partners contributing to the Sentinel Distributed Database (SDD). Data from October 1, 2010 to September 30, 2016 were included in this report. The report includes three separate time periods: 1) October 1, 2010 to September 30, 2016; 2) April 1, 2015 to September 30, 2015; and 3) April 1, 2016 to September 30, 2016. This request was distributed to Data Partners on October 25, 2017. See Appendix A for a list of dates of available data for each Data Partner.

Study Design: We examined the incidence and prevalence across the ICD-9-CM era (October 2010 - September 2015) and ICD-10-CM/PCS era (October 2015 - September 2016) in the United States. Incidence was additionally evaluated from April 2015 to September 2015 and April 2016 to September 2016. See Appendix B for specific codes used to define joint replacement in this request.

Cohort Eligibility Criteria: Members included in the cohort were required to be continuously enrolled in health plans with medical and drug coverage for at least six months (183 days) before their diagnosis or procedure date, during which gaps in coverage of up to 45 days were allowed. The following age groups were included in the cohort: 21-64, 65-74, 75-84, and 85-99 years.

Incident Cohorts: Members included in the incident cohorts were required to be continuously enrolled in health plans with medical and drug coverage for at least 183 days prior to joint replacement diagnosis or procedure, during which gaps in coverage of up to 45 days were allowed. Incident joint replacement was defined as no previous joint replacement diagnosis or procedure in the 183 days preceding the index date with respect to ICD-9-CM and ICD-10-CM/PCS codes.

Prevalent Cohorts: There was no enrollment time requirement for members in the prevalent cohorts. All qualifying diagnosis or procedure codes that occurred between October 1, 2010 and September 30, 2016 were included.

Please see Appendix C for detailed specifications of parameters used in the analyses for this request.

Limitations: Algorithms used to define outcomes are imperfect; thus, it is possible that there may be misclassification. Therefore, data should be interpreted with this limitation in mind.

Notes: Please contact the Sentinel Operations Center (info@sentinelssystem.org) for questions and to provide comments/suggestions for future enhancements to this document.

¹Fung, K. W., et al. (2016). "Preparing for the ICD-10-CM Transition: Automated Methods for Translating ICD Codes in Clinical Phenotype Definitions." EGEMS (Wash DC) 4(1): 1211.

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<u>Appendix C</u>	Specifications for Parameters for this Request

**Glossary of Terms for Analyses Using
Cohort Identification and Descriptive Analysis (CIDA) Tool***

Amount Supplied - number of units (pills, tablets, vials) dispensed. Net amount per NDC per dispensing.

Blackout Period - number of days at the beginning of a treatment episode that events are to be ignored. If an event occurs during the blackout period, the episode is excluded.

Care Setting - type of medical encounter or facility where the exposure, event, or condition code was recorded. Possible care settings include: Inpatient Hospital Stay (IP), Non-Acute Institutional Stay (IS), Emergency Department (ED), Ambulatory Visit (AV), and Other Ambulatory Visit (OA). For laboratory results, possible care settings include: Emergency Department (E), Home (H), Inpatient (I), Outpatient (O), or Unknown or Missing (U). The Care Setting, along with the Principal Diagnosis Indicator, forms the Care Setting/PDX parameter.

Ambulatory Visit (AV) - includes visits at outpatient clinics, same-day surgeries, urgent care visits, and other same-day ambulatory hospital encounters, but excludes emergency department encounters.

Emergency Department (ED) - includes ED encounters that become inpatient stays (in which case inpatient stays would be a separate encounter). Excludes urgent care visits.

Inpatient Hospital Stay (IP) - includes all inpatient stays, same-day hospital discharges, hospital transfers, and acute hospital care where the discharge is after the admission date.

Non-Acute Institutional Stay (IS) - includes hospice, skilled nursing facility (SNF), rehab center, nursing home, residential, overnight non-hospital dialysis and other non-hospital stays.

Other Ambulatory Visit (OA) - includes other non overnight AV encounters such as hospice visits, home health visits, skilled nursing facility visits, other non-hospital visits, as well as telemedicine, telephone and email consultations.

Cohort Definition (drug/exposure) - indicates how the cohort will be defined: 01: Cohort includes only the first valid treatment episode during the query period; 02: Cohort includes all valid treatment episodes during the query period; 03: Cohort includes all valid treatment episodes during the query period until an event occurs.

Days Supplied - number of days supplied for all dispensings in qualifying treatment episodes.

Eligible Members - number of members eligible for an incident treatment episode (defined by the drug/exposure and event washout periods) with drug and medical coverage during the query period.

Enrollment Gap - number of days allowed between two consecutive enrollment periods without breaking a "continuously enrolled" sequence.

Episodes - treatment episodes; length of episode is determined by days supplied in one dispensing or consecutive dispensings bridged by the episode gap.

Episode Gap - number of days allowed between two (or more) consecutive exposures (dispensings/procedures) to be considered the same treatment episode.

Event Deduplication - specifies how events are counted by the MP algorithm: 0: Counts all occurrences of an HOI during an exposure episode; 1: de-duplicates occurrences of the same HOI code and code type on the same day; 2: de-duplicates occurrences of the same HOI group on the same day (e.g., de-duplicates at the group level).

Exposure Episode Length - number of days after exposure initiation that is considered "exposed time."

Exposure Extension Period - number of days post treatment period in which the outcomes/events are counted for a treatment episode. Extensions days are added after any episode gaps have been bridged

Lookback Period - number of days wherein a member is required to have evidence of pre-existing condition (diagnosis/procedure/drug dispensing).

Maximum Episode Duration - truncates exposure episodes after a requester-specified number of exposed days. Applied after any gaps are bridged and extension days added to the length of the exposure episode.

Member-Years - sum of all days of enrollment with medical and drug coverage in the query period preceded by an exposure washout period all divided by 365.25.

Minimum Days Supplied - specifies a minimum number of days in length of the days supplied for the episode to be considered.

Minimum Episode Duration - specifies a minimum number of days in length of the episode for it to be considered. Applied after any gaps are bridged and extension days added to the length of the exposure episode.

Monitoring Period - used to define time periods of interest for both sequential analysis and simple cohort characterization requests.

Principal Diagnosis (PDX) - diagnosis or condition established to be chiefly responsible for admission of the patient to the hospital. 'P' = principal diagnosis, 'S' = secondary diagnosis, 'X' = unspecified diagnosis, '.' = blank. Along with the Care Setting values, forms the Caresetting/PDX parameter.

Query Period - period in which the modular program looks for exposures and outcomes of interest.

Treatment Episode Truncation Indicator - indicates whether the exposure episode will be truncated at the occurrence of a requester-specified code.

Washout Period (drug/exposure) - number of days a user is required to have no evidence of prior exposure (drug dispensing/procedure) and continuous drug and medical coverage prior to an incident treatment episode.

Washout Period (event/outcome) - number of days a user is required to have no evidence of a prior event (procedure/diagnosis) and continuous drug and medical coverage prior to an incident treatment episode.

Years at Risk - number of days supplied plus any episode gaps and exposure extension periods all divided by 365.25.

*all terms may not be used in this report

Table 1. Comparison of Incident* Joint Replacement Diagnoses or Procedures in the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM)/International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10-PCS) Eras (April 1, 2015 - September 30, 2015 and April 1, 2016 - September 30, 2016)

	Members with Diagnosis/Procedure	Eligible Members	Members with Diagnosis/Procedure per 1,000 Eligible Members
Joint Replacement			
ICD-9-CM: April 1, 2015 - September 30, 2015	176,408	32,295,711	5.46
ICD-10-CM/PCS: April 1, 2016 - September 30, 2016	191,698	33,656,887	5.70

*Incidence defined by a 183 day washout

Figure 1. Incidence of Joint Replacement Diagnoses or Procedures per 1,000 Eligible Members from October 2010 - September 2016 by Code Type, 183-Day Washout

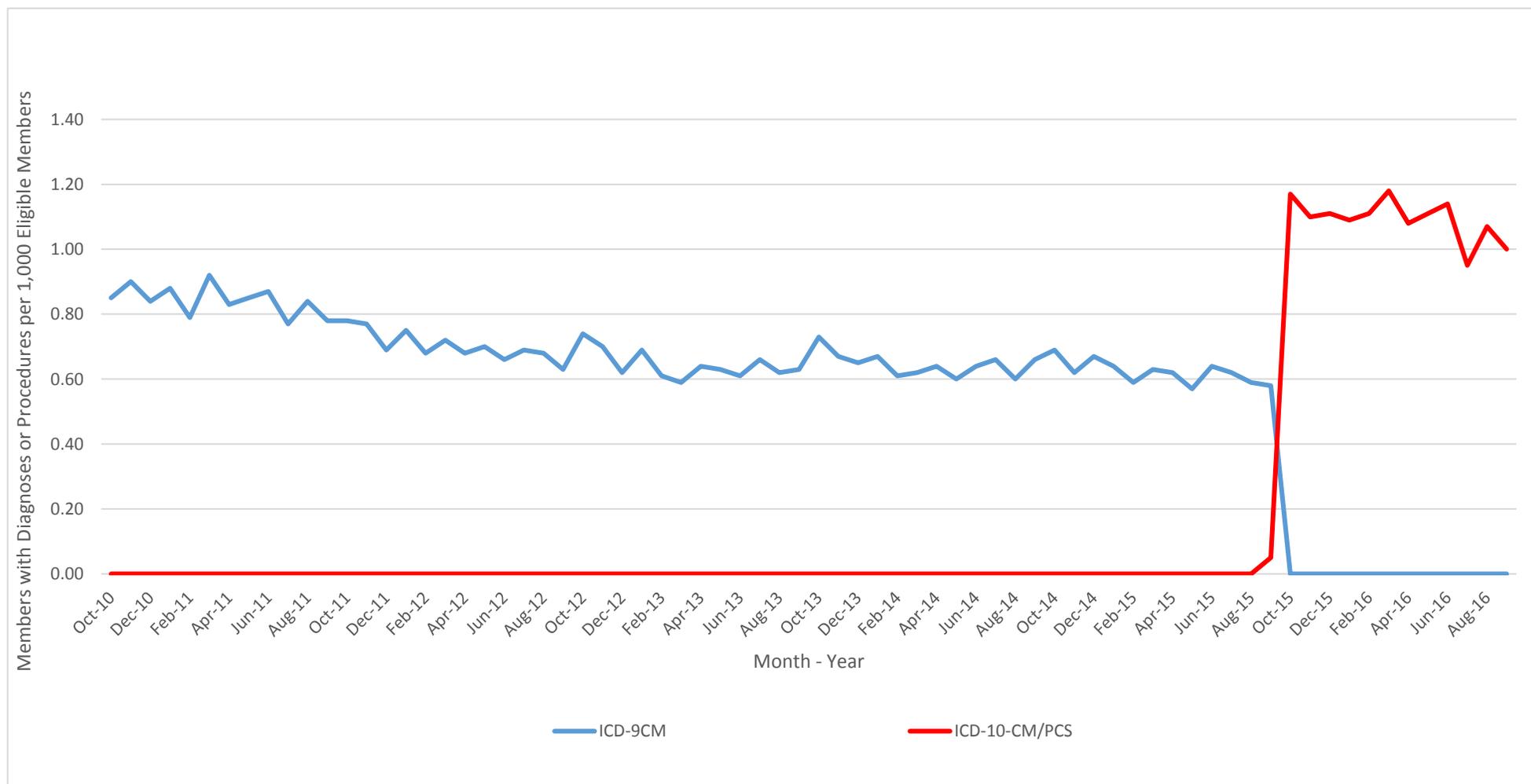
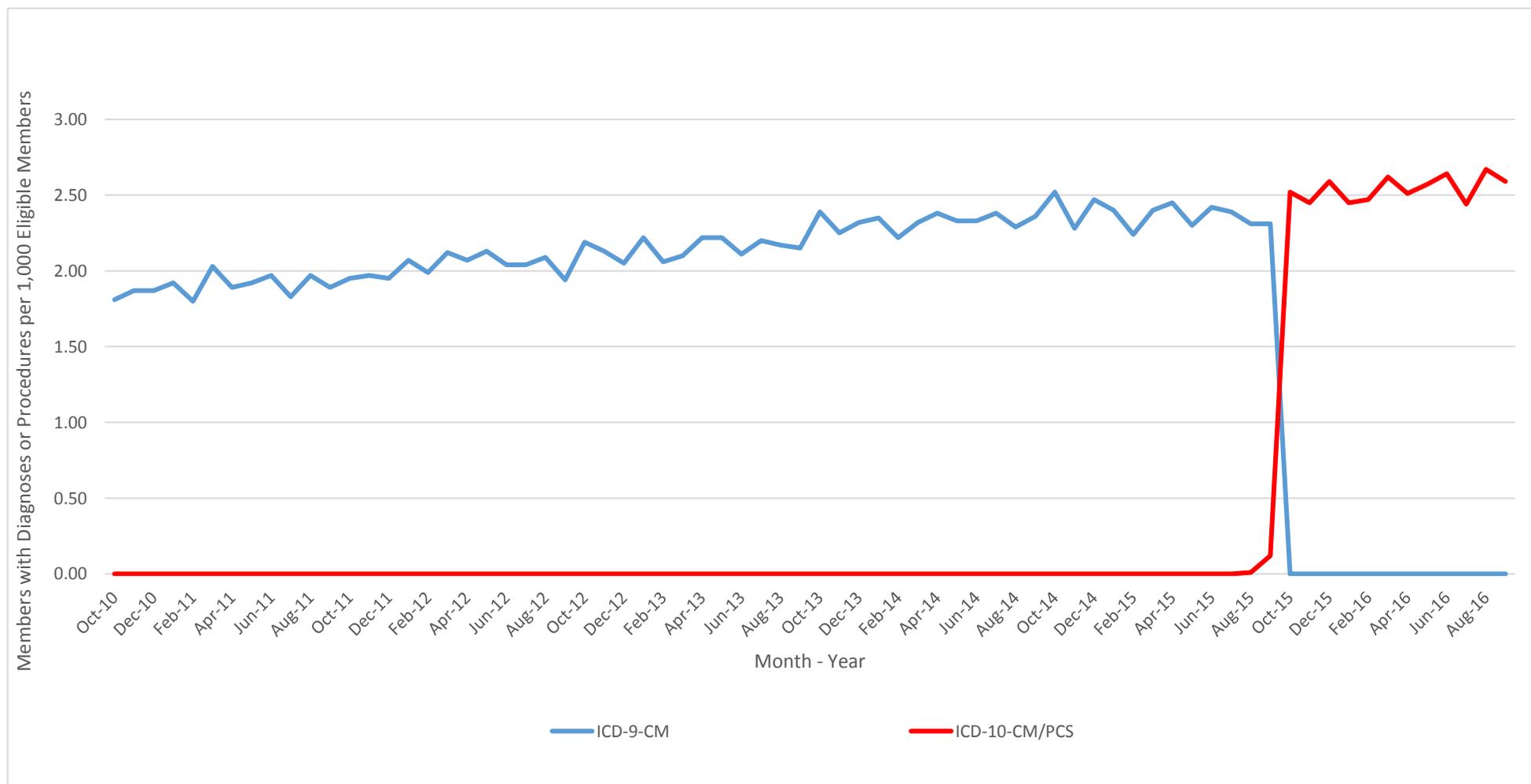


Figure 2. Prevalence of Joint Replacement Diagnoses or Procedures per 1,000 Eligible Members from October 2010 - September 2016 by Code Type, 0-Day Washout



Appendix A. Dates of Available Data for Each Data Partner as of Request Distribution Date (October 25, 2017)

DP ID	Start Date¹	End Date¹
DP0001	10/1/2010	6/30/2016
DP0002	10/1/2010	6/30/2016
DP0003	10/1/2010	9/30/2016
DP0004	10/1/2010	9/30/2016
DP0005	10/1/2010	9/30/2016
DP0006	10/1/2010	9/30/2016
DP0007	10/1/2010	9/30/2016
DP0008	10/1/2010	9/30/2016
DP0009	10/1/2010	9/30/2016
DP0010	10/1/2010	9/30/2016
DP0011	10/1/2010	9/30/2016
DP0012	10/1/2010	9/30/2016

¹The start and end dates are based on the minimum and maximum dates within each DP. The month with the maximum date must have at least 80% of the number of records in the previous month.

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10-PCS) Codes Used to Define Joint Replacement

Code	Description	Code Type	Code Category
ICD-9-CM			
V43.6	Joint replaced by other means	ICD-9-CM	Diagnosis
V43.60	Unspecified joint replacement by other means	ICD-9-CM	Diagnosis
V43.61	Shoulder joint replacement by other means	ICD-9-CM	Diagnosis
V43.62	Elbow joint replacement by other means	ICD-9-CM	Diagnosis
V43.63	Wrist joint replacement by other means	ICD-9-CM	Diagnosis
V43.64	Hip joint replacement by other means	ICD-9-CM	Diagnosis
V43.65	Knee joint replacement by other means	ICD-9-CM	Diagnosis
V43.66	Ankle joint replacement by other means	ICD-9-CM	Diagnosis
V43.69	Other joint replacement by other means	ICD-9-CM	Diagnosis
81.5	Joint replacement of lower extremity	ICD-9-CM	Diagnosis
81.51	Total hip replacement	ICD-9-CM	Procedure
81.52	Partial hip replacement	ICD-9-CM	Procedure
81.53	Revision of hip replacement, not otherwise specified	ICD-9-CM	Procedure
81.54	Total knee replacement	ICD-9-CM	Procedure
81.55	Revision of knee replacement, not otherwise specified	ICD-9-CM	Procedure
81.56	Total ankle replacement	ICD-9-CM	Procedure
81.57	Replacement of joint of foot and toe	ICD-9-CM	Procedure
81.59	Revision of joint replacement of lower extremity, not elsewhere classified	ICD-9-CM	Procedure
81.8	Arthroplasty and repair of shoulder and elbow	ICD-9-CM	Procedure
81.80	Other total shoulder replacement	ICD-9-CM	Procedure
81.81	Partial shoulder replacement	ICD-9-CM	Procedure
81.82	Repair of recurrent dislocation of shoulder	ICD-9-CM	Procedure
81.83	Other repair of shoulder	ICD-9-CM	Procedure
81.84	Total elbow replacement	ICD-9-CM	Procedure
81.85	Other repair of elbow	ICD-9-CM	Procedure
ICD-10-CM/PCS			
Z96.60	Presence of unspecified orthopedic joint implant	ICD-10-CM	Diagnosis
Z96.611	Presence of right artificial shoulder joint	ICD-10-CM	Diagnosis
Z96.612	Presence of left artificial shoulder joint	ICD-10-CM	Diagnosis
Z96.619	Presence of unspecified artificial shoulder joint	ICD-10-CM	Diagnosis
Z96.621	Presence of right artificial elbow joint	ICD-10-CM	Diagnosis
Z96.622	Presence of left artificial elbow joint	ICD-10-CM	Diagnosis
Z96.629	Presence of unspecified artificial elbow joint	ICD-10-CM	Diagnosis
Z96.631	Presence of right artificial wrist joint	ICD-10-CM	Diagnosis
Z96.632	Presence of left artificial wrist joint	ICD-10-CM	Diagnosis
Z96.639	Presence of unspecified artificial wrist joint	ICD-10-CM	Diagnosis
Z96.641	Presence of right artificial hip joint	ICD-10-CM	Diagnosis
Z96.642	Presence of left artificial hip joint	ICD-10-CM	Diagnosis
Z96.643	Presence of artificial hip joint, bilateral	ICD-10-CM	Diagnosis
Z96.649	Presence of unspecified artificial hip joint	ICD-10-CM	Diagnosis
Z96.651	Presence of right artificial knee joint	ICD-10-CM	Diagnosis
Z96.652	Presence of left artificial knee joint	ICD-10-CM	Diagnosis
Z96.653	Presence of artificial knee joint, bilateral	ICD-10-CM	Diagnosis
Z96.659	Presence of unspecified artificial knee joint	ICD-10-CM	Diagnosis

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Code	Description	Code Type	Code Category
Z96.661	Presence of right artificial ankle joint	ICD-10-CM	Diagnosis
Z96.662	Presence of left artificial ankle joint	ICD-10-CM	Diagnosis
Z96.669	Presence of unspecified artificial ankle joint	ICD-10-CM	Diagnosis
Z96.691	Finger-joint replacement of right hand	ICD-10-CM	Diagnosis
Z96.692	Finger-joint replacement of left hand	ICD-10-CM	Diagnosis
Z96.693	Finger-joint replacement, bilateral	ICD-10-CM	Diagnosis
Z96.698	Presence of other orthopedic joint implants	ICD-10-CM	Diagnosis
Z96.7	Presence of other bone and tendon implants	ICD-10-CM	Diagnosis
ORQE0ZZ	Repair Right Sternoclavicular Joint, Open Approach	ICD-10-PCS	Procedure
ORQE3ZZ	Repair Right Sternoclavicular Joint, Percutaneous Approach	ICD-10-PCS	Procedure
ORQE4ZZ	Repair Right Sternoclavicular Joint, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORQEXZZ	Repair Right Sternoclavicular Joint, External Approach	ICD-10-PCS	Procedure
ORQF0ZZ	Repair Left Sternoclavicular Joint, Open Approach	ICD-10-PCS	Procedure
ORQF3ZZ	Repair Left Sternoclavicular Joint, Percutaneous Approach	ICD-10-PCS	Procedure
ORQF4ZZ	Repair Left Sternoclavicular Joint, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORQFXZZ	Repair Left Sternoclavicular Joint, External Approach	ICD-10-PCS	Procedure
ORQG0ZZ	Repair Right Acromioclavicular Joint, Open Approach	ICD-10-PCS	Procedure
ORQG3ZZ	Repair Right Acromioclavicular Joint, Percutaneous Approach	ICD-10-PCS	Procedure
ORQG4ZZ	Repair Right Acromioclavicular Joint, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORQGXZZ	Repair Right Acromioclavicular Joint, External Approach	ICD-10-PCS	Procedure
ORQH0ZZ	Repair Left Acromioclavicular Joint, Open Approach	ICD-10-PCS	Procedure
ORQH3ZZ	Repair Left Acromioclavicular Joint, Percutaneous Approach	ICD-10-PCS	Procedure
ORQH4ZZ	Repair Left Acromioclavicular Joint, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORQHZZ	Repair Left Acromioclavicular Joint, External Approach	ICD-10-PCS	Procedure
ORQJ0ZZ	Repair Right Shoulder Joint, Open Approach	ICD-10-PCS	Procedure
ORQJ3ZZ	Repair Right Shoulder Joint, Percutaneous Approach	ICD-10-PCS	Procedure
ORQJ4ZZ	Repair Right Shoulder Joint, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORQJXZZ	Repair Right Shoulder Joint, External Approach	ICD-10-PCS	Procedure
ORQK0ZZ	Repair Left Shoulder Joint, Open Approach	ICD-10-PCS	Procedure
ORQK3ZZ	Repair Left Shoulder Joint, Percutaneous Approach	ICD-10-PCS	Procedure
ORQK4ZZ	Repair Left Shoulder Joint, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORQKXZZ	Repair Left Shoulder Joint, External Approach	ICD-10-PCS	Procedure
ORQL0ZZ	Repair Right Elbow Joint, Open Approach	ICD-10-PCS	Procedure
ORQL3ZZ	Repair Right Elbow Joint, Percutaneous Approach	ICD-10-PCS	Procedure
ORQL4ZZ	Repair Right Elbow Joint, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORQLXZZ	Repair Right Elbow Joint, External Approach	ICD-10-PCS	Procedure
ORQM0ZZ	Repair Left Elbow Joint, Open Approach	ICD-10-PCS	Procedure
ORQM3ZZ	Repair Left Elbow Joint, Percutaneous Approach	ICD-10-PCS	Procedure
ORQM4ZZ	Repair Left Elbow Joint, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORQMXZZ	Repair Left Elbow Joint, External Approach	ICD-10-PCS	Procedure
ORRE07Z	Replacement of Right Sternoclavicular Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORRE0JZ	Replacement of Right Sternoclavicular Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10-PCS) Codes Used to Define Joint Replacement

Code	Description	Code Type	Code Category
ORRE0KZ	Replacement of Right Sternoclavicular Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORRF07Z	Replacement of Left Sternoclavicular Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORRF0JZ	Replacement of Left Sternoclavicular Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
ORRF0KZ	Replacement of Left Sternoclavicular Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORRG07Z	Replacement of Right Acromioclavicular Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORRG0JZ	Replacement of Right Acromioclavicular Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
ORRG0KZ	Replacement of Right Acromioclavicular Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORRH07Z	Replacement of Left Acromioclavicular Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORRH0JZ	Replacement of Left Acromioclavicular Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
ORRH0KZ	Replacement of Left Acromioclavicular Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORRJ07Z	Replacement of Right Shoulder Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORRJ0J6	Replacement of Right Shoulder Joint with Synthetic Substitute, Humeral Surface, Open Approach	ICD-10-PCS	Procedure
ORRJ0J7	Replacement of Right Shoulder Joint with Synthetic Substitute, Glenoid Surface, Open Approach	ICD-10-PCS	Procedure
ORRJ0JZ	Replacement of Right Shoulder Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
ORRJ0KZ	Replacement of Right Shoulder Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORRK07Z	Replacement of Left Shoulder Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORRK0J6	Replacement of Left Shoulder Joint with Synthetic Substitute, Humeral Surface, Open Approach	ICD-10-PCS	Procedure
ORRK0J7	Replacement of Left Shoulder Joint with Synthetic Substitute, Glenoid Surface, Open Approach	ICD-10-PCS	Procedure
ORRK0JZ	Replacement of Left Shoulder Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
ORRK0KZ	Replacement of Left Shoulder Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORRL07Z	Replacement of Right Elbow Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORRL0JZ	Replacement of Right Elbow Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
ORRL0KZ	Replacement of Right Elbow Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORRM07Z	Replacement of Left Elbow Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure

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Code	Description	Code Type	Code Category
ORRMOJZ	Replacement of Left Elbow Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
ORRMOKZ	Replacement of Left Elbow Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORSE04Z	Reposition Right Sternoclavicular Joint with Internal Fixation Device, Open Approach	ICD-10-PCS	Procedure
ORSE0ZZ	Reposition Right Sternoclavicular Joint, Open Approach	ICD-10-PCS	Procedure
ORSF04Z	Reposition Left Sternoclavicular Joint with Internal Fixation Device, Open Approach	ICD-10-PCS	Procedure
ORSF0ZZ	Reposition Left Sternoclavicular Joint, Open Approach	ICD-10-PCS	Procedure
ORSG04Z	Reposition Right Acromioclavicular Joint with Internal Fixation Device, Open Approach	ICD-10-PCS	Procedure
ORSG0ZZ	Reposition Right Acromioclavicular Joint, Open Approach	ICD-10-PCS	Procedure
ORSH04Z	Reposition Left Acromioclavicular Joint with Internal Fixation Device, Open Approach	ICD-10-PCS	Procedure
ORSH0ZZ	Reposition Left Acromioclavicular Joint, Open Approach	ICD-10-PCS	Procedure
ORSJ04Z	Reposition Right Shoulder Joint with Internal Fixation Device, Open Approach	ICD-10-PCS	Procedure
ORSJ0ZZ	Reposition Right Shoulder Joint, Open Approach	ICD-10-PCS	Procedure
ORSK04Z	Reposition Left Shoulder Joint with Internal Fixation Device, Open Approach	ICD-10-PCS	Procedure
ORSK0ZZ	Reposition Left Shoulder Joint, Open Approach	ICD-10-PCS	Procedure
ORUE07Z	Supplement Right Sternoclavicular Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORUE0JZ	Supplement Right Sternoclavicular Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
ORUE0KZ	Supplement Right Sternoclavicular Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORUE37Z	Supplement Right Sternoclavicular Joint with Autologous Tissue Substitute, Percutaneous Approach	ICD-10-PCS	Procedure
ORUE3JZ	Supplement Right Sternoclavicular Joint with Synthetic Substitute, Percutaneous Approach	ICD-10-PCS	Procedure
ORUE3KZ	Supplement Right Sternoclavicular Joint with Nonautologous Tissue Substitute, Percutaneous Approach	ICD-10-PCS	Procedure
ORUE47Z	Supplement Right Sternoclavicular Joint with Autologous Tissue Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORUE4JZ	Supplement Right Sternoclavicular Joint with Synthetic Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORUE4KZ	Supplement Right Sternoclavicular Joint with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORUF07Z	Supplement Left Sternoclavicular Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORUF0JZ	Supplement Left Sternoclavicular Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
ORUF0KZ	Supplement Left Sternoclavicular Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORUF37Z	Supplement Left Sternoclavicular Joint with Autologous Tissue Substitute, Percutaneous Approach	ICD-10-PCS	Procedure

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Code	Description	Code Type	Code Category
ORUF3JZ	Supplement Left Sternoclavicular Joint with Synthetic Substitute, Percutaneous Approach	ICD-10-PCS	Procedure
ORUF3KZ	Supplement Left Sternoclavicular Joint with Nonautologous Tissue Substitute, Percutaneous Approach	ICD-10-PCS	Procedure
ORUF47Z	Supplement Left Sternoclavicular Joint with Autologous Tissue Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORUF4JZ	Supplement Left Sternoclavicular Joint with Synthetic Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORUF4KZ	Supplement Left Sternoclavicular Joint with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORUG07Z	Supplement Right Acromioclavicular Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORUG0JZ	Supplement Right Acromioclavicular Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
ORUG0KZ	Supplement Right Acromioclavicular Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORUG37Z	Supplement Right Acromioclavicular Joint with Autologous Tissue Substitute, Percutaneous Approach	ICD-10-PCS	Procedure
ORUG3JZ	Supplement Right Acromioclavicular Joint with Synthetic Substitute, Percutaneous Approach	ICD-10-PCS	Procedure
ORUG3KZ	Supplement Right Acromioclavicular Joint with Nonautologous Tissue Substitute, Percutaneous Approach	ICD-10-PCS	Procedure
ORUG47Z	Supplement Right Acromioclavicular Joint with Autologous Tissue Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORUG4JZ	Supplement Right Acromioclavicular Joint with Synthetic Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORUG4KZ	Supplement Right Acromioclavicular Joint with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORUH07Z	Supplement Left Acromioclavicular Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORUH0JZ	Supplement Left Acromioclavicular Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
ORUH0KZ	Supplement Left Acromioclavicular Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORUH37Z	Supplement Left Acromioclavicular Joint with Autologous Tissue Substitute, Percutaneous Approach	ICD-10-PCS	Procedure
ORUH3JZ	Supplement Left Acromioclavicular Joint with Synthetic Substitute, Percutaneous Approach	ICD-10-PCS	Procedure
ORUH3KZ	Supplement Left Acromioclavicular Joint with Nonautologous Tissue Substitute, Percutaneous Approach	ICD-10-PCS	Procedure
ORUH47Z	Supplement Left Acromioclavicular Joint with Autologous Tissue Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORUH4JZ	Supplement Left Acromioclavicular Joint with Synthetic Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORUH4KZ	Supplement Left Acromioclavicular Joint with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10-PCS) Codes Used to Define Joint Replacement

Code	Description	Code Type	Code Category
ORUJ07Z	Supplement Right Shoulder Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORUJ0JZ	Supplement Right Shoulder Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
ORUJ0KZ	Supplement Right Shoulder Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORUJ37Z	Supplement Right Shoulder Joint with Autologous Tissue Substitute, Percutaneous Approach	ICD-10-PCS	Procedure
ORUJ3JZ	Supplement Right Shoulder Joint with Synthetic Substitute, Percutaneous Approach	ICD-10-PCS	Procedure
ORUJ3KZ	Supplement Right Shoulder Joint with Nonautologous Tissue Substitute, Percutaneous Approach	ICD-10-PCS	Procedure
ORUJ47Z	Supplement Right Shoulder Joint with Autologous Tissue Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORUJ4JZ	Supplement Right Shoulder Joint with Synthetic Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORUJ4KZ	Supplement Right Shoulder Joint with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORUK07Z	Supplement Left Shoulder Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORUK0JZ	Supplement Left Shoulder Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
ORUK0KZ	Supplement Left Shoulder Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORUK37Z	Supplement Left Shoulder Joint with Autologous Tissue Substitute, Percutaneous Approach	ICD-10-PCS	Procedure
ORUK3JZ	Supplement Left Shoulder Joint with Synthetic Substitute, Percutaneous Approach	ICD-10-PCS	Procedure
ORUK3KZ	Supplement Left Shoulder Joint with Nonautologous Tissue Substitute, Percutaneous Approach	ICD-10-PCS	Procedure
ORUK47Z	Supplement Left Shoulder Joint with Autologous Tissue Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORUK4JZ	Supplement Left Shoulder Joint with Synthetic Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORUK4KZ	Supplement Left Shoulder Joint with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORUL07Z	Supplement Right Elbow Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORUL0JZ	Supplement Right Elbow Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
ORUL0KZ	Supplement Right Elbow Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORUL37Z	Supplement Right Elbow Joint with Autologous Tissue Substitute, Percutaneous Approach	ICD-10-PCS	Procedure
ORUL3JZ	Supplement Right Elbow Joint with Synthetic Substitute, Percutaneous Approach	ICD-10-PCS	Procedure
ORUL3KZ	Supplement Right Elbow Joint with Nonautologous Tissue Substitute, Percutaneous Approach	ICD-10-PCS	Procedure

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10-PCS) Codes Used to Define Joint Replacement

Code	Description	Code Type	Code Category
ORUL47Z	Supplement Right Elbow Joint with Autologous Tissue Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORUL4JZ	Supplement Right Elbow Joint with Synthetic Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORUL4KZ	Supplement Right Elbow Joint with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORUM07Z	Supplement Left Elbow Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORUM0JZ	Supplement Left Elbow Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
ORUM0KZ	Supplement Left Elbow Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
ORUM37Z	Supplement Left Elbow Joint with Autologous Tissue Substitute, Percutaneous Approach	ICD-10-PCS	Procedure
ORUM3JZ	Supplement Left Elbow Joint with Synthetic Substitute, Percutaneous Approach	ICD-10-PCS	Procedure
ORUM3KZ	Supplement Left Elbow Joint with Nonautologous Tissue Substitute, Percutaneous Approach	ICD-10-PCS	Procedure
ORUM47Z	Supplement Left Elbow Joint with Autologous Tissue Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORUM4JZ	Supplement Left Elbow Joint with Synthetic Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
ORUM4KZ	Supplement Left Elbow Joint with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSR9019	Replacement of Right Hip Joint with Metal Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSR901A	Replacement of Right Hip Joint with Metal Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSR901Z	Replacement of Right Hip Joint with Metal Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSR9029	Replacement of Right Hip Joint with Metal on Polyethylene Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSR902A	Replacement of Right Hip Joint with Metal on Polyethylene Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSR902Z	Replacement of Right Hip Joint with Metal on Polyethylene Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSR9039	Replacement of Right Hip Joint with Ceramic Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSR903A	Replacement of Right Hip Joint with Ceramic Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSR903Z	Replacement of Right Hip Joint with Ceramic Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSR9049	Replacement of Right Hip Joint with Ceramic on Polyethylene Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSR904A	Replacement of Right Hip Joint with Ceramic on Polyethylene Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSR904Z	Replacement of Right Hip Joint with Ceramic on Polyethylene Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSR907Z	Replacement of Right Hip Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10-PCS) Codes Used to Define Joint Replacement

Code	Description	Code Type	Code Category
OSR90J9	Replacement of Right Hip Joint with Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSR90JA	Replacement of Right Hip Joint with Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSR90JZ	Replacement of Right Hip Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSR90KZ	Replacement of Right Hip Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRA009	Replacement of Right Hip Joint, Acetabular Surface with Polyethylene Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRA00A	Replacement of Right Hip Joint, Acetabular Surface with Polyethylene Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRA00Z	Replacement of Right Hip Joint, Acetabular Surface with Polyethylene Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRA019	Replacement of Right Hip Joint, Acetabular Surface with Metal Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRA01A	Replacement of Right Hip Joint, Acetabular Surface with Metal Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRA01Z	Replacement of Right Hip Joint, Acetabular Surface with Metal Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRA039	Replacement of Right Hip Joint, Acetabular Surface with Ceramic Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRA03A	Replacement of Right Hip Joint, Acetabular Surface with Ceramic Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRA03Z	Replacement of Right Hip Joint, Acetabular Surface with Ceramic Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRA07Z	Replacement of Right Hip Joint, Acetabular Surface with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRA0J9	Replacement of Right Hip Joint, Acetabular Surface with Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRA0JA	Replacement of Right Hip Joint, Acetabular Surface with Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRA0JZ	Replacement of Right Hip Joint, Acetabular Surface with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRA0KZ	Replacement of Right Hip Joint, Acetabular Surface with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRB019	Replacement of Left Hip Joint with Metal Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRB01A	Replacement of Left Hip Joint with Metal Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRB01Z	Replacement of Left Hip Joint with Metal Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRB029	Replacement of Left Hip Joint with Metal on Polyethylene Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRB02A	Replacement of Left Hip Joint with Metal on Polyethylene Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRB02Z	Replacement of Left Hip Joint with Metal on Polyethylene Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10-PCS) Codes Used to Define Joint Replacement

Code	Description	Code Type	Code Category
OSRB039	Replacement of Left Hip Joint with Ceramic Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRB03A	Replacement of Left Hip Joint with Ceramic Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRB03Z	Replacement of Left Hip Joint with Ceramic Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRB049	Replacement of Left Hip Joint with Ceramic on Polyethylene Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRB04A	Replacement of Left Hip Joint with Ceramic on Polyethylene Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRB04Z	Replacement of Left Hip Joint with Ceramic on Polyethylene Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRB07Z	Replacement of Left Hip Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRB0J9	Replacement of Left Hip Joint with Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRB0JA	Replacement of Left Hip Joint with Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRB0JZ	Replacement of Left Hip Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRB0KZ	Replacement of Left Hip Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRC07Z	Replacement of Right Knee Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRC0J9	Replacement of Right Knee Joint with Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRC0JA	Replacement of Right Knee Joint with Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRC0JZ	Replacement of Right Knee Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRC0KZ	Replacement of Right Knee Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRC0L9	Replacement of Right Knee Joint with Unicondylar Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRC0LA	Replacement of Right Knee Joint with Unicondylar Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRC0LZ	Replacement of Right Knee Joint with Unicondylar Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRD07Z	Replacement of Left Knee Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRD0J9	Replacement of Left Knee Joint with Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRD0JA	Replacement of Left Knee Joint with Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRD0JZ	Replacement of Left Knee Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRD0KZ	Replacement of Left Knee Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10-PCS) Codes Used to Define Joint Replacement

Code	Description	Code Type	Code Category
OSRD0L9	Replacement of Left Knee Joint with Unicondylar Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRD0LA	Replacement of Left Knee Joint with Unicondylar Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRD0LZ	Replacement of Left Knee Joint with Unicondylar Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRE009	Replacement of Left Hip Joint, Acetabular Surface with Polyethylene Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRE00A	Replacement of Left Hip Joint, Acetabular Surface with Polyethylene Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRE00Z	Replacement of Left Hip Joint, Acetabular Surface with Polyethylene Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRE019	Replacement of Left Hip Joint, Acetabular Surface with Metal Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRE01A	Replacement of Left Hip Joint, Acetabular Surface with Metal Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRE01Z	Replacement of Left Hip Joint, Acetabular Surface with Metal Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRE039	Replacement of Left Hip Joint, Acetabular Surface with Ceramic Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRE03A	Replacement of Left Hip Joint, Acetabular Surface with Ceramic Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRE03Z	Replacement of Left Hip Joint, Acetabular Surface with Ceramic Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRE07Z	Replacement of Left Hip Joint, Acetabular Surface with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRE0J9	Replacement of Left Hip Joint, Acetabular Surface with Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRE0JA	Replacement of Left Hip Joint, Acetabular Surface with Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRE0JZ	Replacement of Left Hip Joint, Acetabular Surface with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRE0KZ	Replacement of Left Hip Joint, Acetabular Surface with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRF07Z	Replacement of Right Ankle Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRF0J9	Replacement of Right Ankle Joint with Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRF0JA	Replacement of Right Ankle Joint with Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRF0JZ	Replacement of Right Ankle Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRF0KZ	Replacement of Right Ankle Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRG07Z	Replacement of Left Ankle Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure

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Code	Description	Code Type	Code Category
OSRG0J9	Replacement of Left Ankle Joint with Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRG0JA	Replacement of Left Ankle Joint with Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRG0JZ	Replacement of Left Ankle Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRG0KZ	Replacement of Left Ankle Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRH07Z	Replacement of Right Tarsal Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRH0JZ	Replacement of Right Tarsal Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRH0KZ	Replacement of Right Tarsal Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRJ07Z	Replacement of Left Tarsal Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRJ0JZ	Replacement of Left Tarsal Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRJ0KZ	Replacement of Left Tarsal Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRK07Z	Replacement of Right Metatarsal-Tarsal Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRK0JZ	Replacement of Right Metatarsal-Tarsal Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRK0KZ	Replacement of Right Metatarsal-Tarsal Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRL07Z	Replacement of Left Metatarsal-Tarsal Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRL0JZ	Replacement of Left Metatarsal-Tarsal Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRL0KZ	Replacement of Left Metatarsal-Tarsal Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRM07Z	Replacement of Right Metatarsal-Phalangeal Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRM0JZ	Replacement of Right Metatarsal-Phalangeal Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRM0KZ	Replacement of Right Metatarsal-Phalangeal Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRN07Z	Replacement of Left Metatarsal-Phalangeal Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRN0JZ	Replacement of Left Metatarsal-Phalangeal Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRN0KZ	Replacement of Left Metatarsal-Phalangeal Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRP07Z	Replacement of Right Toe Phalangeal Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRP0JZ	Replacement of Right Toe Phalangeal Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure

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Code	Description	Code Type	Code Category
OSRP0KZ	Replacement of Right Toe Phalangeal Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRQ07Z	Replacement of Left Toe Phalangeal Joint with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRQ0JZ	Replacement of Left Toe Phalangeal Joint with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRQ0KZ	Replacement of Left Toe Phalangeal Joint with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRR019	Replacement of Right Hip Joint, Femoral Surface with Metal Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRR01A	Replacement of Right Hip Joint, Femoral Surface with Metal Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRR01Z	Replacement of Right Hip Joint, Femoral Surface with Metal Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRR039	Replacement of Right Hip Joint, Femoral Surface with Ceramic Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRR03A	Replacement of Right Hip Joint, Femoral Surface with Ceramic Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRR03Z	Replacement of Right Hip Joint, Femoral Surface with Ceramic Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRR07Z	Replacement of Right Hip Joint, Femoral Surface with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRR0J9	Replacement of Right Hip Joint, Femoral Surface with Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRR0JA	Replacement of Right Hip Joint, Femoral Surface with Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRR0JZ	Replacement of Right Hip Joint, Femoral Surface with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRR0KZ	Replacement of Right Hip Joint, Femoral Surface with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRS019	Replacement of Left Hip Joint, Femoral Surface with Metal Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRS01A	Replacement of Left Hip Joint, Femoral Surface with Metal Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRS01Z	Replacement of Left Hip Joint, Femoral Surface with Metal Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRS039	Replacement of Left Hip Joint, Femoral Surface with Ceramic Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRS03A	Replacement of Left Hip Joint, Femoral Surface with Ceramic Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRS03Z	Replacement of Left Hip Joint, Femoral Surface with Ceramic Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRS07Z	Replacement of Left Hip Joint, Femoral Surface with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRS0J9	Replacement of Left Hip Joint, Femoral Surface with Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure

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Code	Description	Code Type	Code Category
OSRS0JA	Replacement of Left Hip Joint, Femoral Surface with Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRS0JZ	Replacement of Left Hip Joint, Femoral Surface with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRS0KZ	Replacement of Left Hip Joint, Femoral Surface with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRT07Z	Replacement of Right Knee Joint, Femoral Surface with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRT0J9	Replacement of Right Knee Joint, Femoral Surface with Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRT0JA	Replacement of Right Knee Joint, Femoral Surface with Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRT0JZ	Replacement of Right Knee Joint, Femoral Surface with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRT0KZ	Replacement of Right Knee Joint, Femoral Surface with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRU07Z	Replacement of Left Knee Joint, Femoral Surface with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRU0J9	Replacement of Left Knee Joint, Femoral Surface with Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRU0JA	Replacement of Left Knee Joint, Femoral Surface with Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRU0JZ	Replacement of Left Knee Joint, Femoral Surface with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRU0KZ	Replacement of Left Knee Joint, Femoral Surface with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRV07Z	Replacement of Right Knee Joint, Tibial Surface with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRV0J9	Replacement of Right Knee Joint, Tibial Surface with Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRV0JA	Replacement of Right Knee Joint, Tibial Surface with Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRV0JZ	Replacement of Right Knee Joint, Tibial Surface with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRV0KZ	Replacement of Right Knee Joint, Tibial Surface with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRW07Z	Replacement of Left Knee Joint, Tibial Surface with Autologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure
OSRW0J9	Replacement of Left Knee Joint, Tibial Surface with Synthetic Substitute, Cemented, Open Approach	ICD-10-PCS	Procedure
OSRW0JA	Replacement of Left Knee Joint, Tibial Surface with Synthetic Substitute, Uncemented, Open Approach	ICD-10-PCS	Procedure
OSRW0JZ	Replacement of Left Knee Joint, Tibial Surface with Synthetic Substitute, Open Approach	ICD-10-PCS	Procedure
OSRW0KZ	Replacement of Left Knee Joint, Tibial Surface with Nonautologous Tissue Substitute, Open Approach	ICD-10-PCS	Procedure

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10-PCS) Codes Used to Define Joint Replacement

Code	Description	Code Type	Code Category
OSW90JZ	Revision of Synthetic Substitute in Right Hip Joint, Open Approach	ICD-10-PCS	Procedure
OSW93JZ	Revision of Synthetic Substitute in Right Hip Joint, Percutaneous Approach	ICD-10-PCS	Procedure
OSW94JZ	Revision of Synthetic Substitute in Right Hip Joint, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSWA0JZ	Revision of Synthetic Substitute in Right Hip Joint, Acetabular Surface, Open Approach	ICD-10-PCS	Procedure
OSWA3JZ	Revision of Synthetic Substitute in Right Hip Joint, Acetabular Surface, Percutaneous Approach	ICD-10-PCS	Procedure
OSWA4JZ	Revision of Synthetic Substitute in Right Hip Joint, Acetabular Surface, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSWB0JZ	Revision of Synthetic Substitute in Left Hip Joint, Open Approach	ICD-10-PCS	Procedure
OSWB3JZ	Revision of Synthetic Substitute in Left Hip Joint, Percutaneous Approach	ICD-10-PCS	Procedure
OSWB4JZ	Revision of Synthetic Substitute in Left Hip Joint, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSWC0JC	Revision of Synthetic Substitute in Right Knee Joint, Patellar Surface, Open Approach	ICD-10-PCS	Procedure
OSWC0JZ	Revision of Synthetic Substitute in Right Knee Joint, Open Approach	ICD-10-PCS	Procedure
OSWC3JC	Revision of Synthetic Substitute in Right Knee Joint, Patellar Surface, Percutaneous Approach	ICD-10-PCS	Procedure
OSWC3JZ	Revision of Synthetic Substitute in Right Knee Joint, Percutaneous Approach	ICD-10-PCS	Procedure
OSWC4JC	Revision of Synthetic Substitute in Right Knee Joint, Patellar Surface, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSWC4JZ	Revision of Synthetic Substitute in Right Knee Joint, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSWD0JC	Revision of Synthetic Substitute in Left Knee Joint, Patellar Surface, Open Approach	ICD-10-PCS	Procedure
OSWD0JZ	Revision of Synthetic Substitute in Left Knee Joint, Open Approach	ICD-10-PCS	Procedure
OSWD3JC	Revision of Synthetic Substitute in Left Knee Joint, Patellar Surface, Percutaneous Approach	ICD-10-PCS	Procedure
OSWD3JZ	Revision of Synthetic Substitute in Left Knee Joint, Percutaneous Approach	ICD-10-PCS	Procedure
OSWD4JC	Revision of Synthetic Substitute in Left Knee Joint, Patellar Surface, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSWD4JZ	Revision of Synthetic Substitute in Left Knee Joint, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSWE0JZ	Revision of Synthetic Substitute in Left Hip Joint, Acetabular Surface, Open Approach	ICD-10-PCS	Procedure
OSWE3JZ	Revision of Synthetic Substitute in Left Hip Joint, Acetabular Surface, Percutaneous Approach	ICD-10-PCS	Procedure
OSWE4JZ	Revision of Synthetic Substitute in Left Hip Joint, Acetabular Surface, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSWF0JZ	Revision of Synthetic Substitute in Right Ankle Joint, Open Approach	ICD-10-PCS	Procedure
OSWF3JZ	Revision of Synthetic Substitute in Right Ankle Joint, Percutaneous Approach	ICD-10-PCS	Procedure
OSWF4JZ	Revision of Synthetic Substitute in Right Ankle Joint, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSWG0JZ	Revision of Synthetic Substitute in Left Ankle Joint, Open Approach	ICD-10-PCS	Procedure
OSWG3JZ	Revision of Synthetic Substitute in Left Ankle Joint, Percutaneous Approach	ICD-10-PCS	Procedure

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10-PCS) Codes Used to Define Joint Replacement

Code	Description	Code Type	Code Category
OSWG4JZ	Revision of Synthetic Substitute in Left Ankle Joint, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSWH0JZ	Revision of Synthetic Substitute in Right Tarsal Joint, Open Approach	ICD-10-PCS	Procedure
OSWH3JZ	Revision of Synthetic Substitute in Right Tarsal Joint, Percutaneous Approach	ICD-10-PCS	Procedure
OSWH4JZ	Revision of Synthetic Substitute in Right Tarsal Joint, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSWJ0JZ	Revision of Synthetic Substitute in Left Tarsal Joint, Open Approach	ICD-10-PCS	Procedure
OSWJ3JZ	Revision of Synthetic Substitute in Left Tarsal Joint, Percutaneous Approach	ICD-10-PCS	Procedure
OSWJ4JZ	Revision of Synthetic Substitute in Left Tarsal Joint, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSWK0JZ	Revision of Synthetic Substitute in Right Metatarsal-Tarsal Joint, Open Approach	ICD-10-PCS	Procedure
OSWK3JZ	Revision of Synthetic Substitute in Right Metatarsal-Tarsal Joint, Percutaneous Approach	ICD-10-PCS	Procedure
OSWK4JZ	Revision of Synthetic Substitute in Right Metatarsal-Tarsal Joint, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSWL0JZ	Revision of Synthetic Substitute in Left Metatarsal-Tarsal Joint, Open Approach	ICD-10-PCS	Procedure
OSWL3JZ	Revision of Synthetic Substitute in Left Metatarsal-Tarsal Joint, Percutaneous Approach	ICD-10-PCS	Procedure
OSWL4JZ	Revision of Synthetic Substitute in Left Metatarsal-Tarsal Joint, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSWM0JZ	Revision of Synthetic Substitute in Right Metatarsal-Phalangeal Joint, Open Approach	ICD-10-PCS	Procedure
OSWM3JZ	Revision of Synthetic Substitute in Right Metatarsal-Phalangeal Joint, Percutaneous Approach	ICD-10-PCS	Procedure
OSWM4JZ	Revision of Synthetic Substitute in Right Metatarsal-Phalangeal Joint, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSWN0JZ	Revision of Synthetic Substitute in Left Metatarsal-Phalangeal Joint, Open Approach	ICD-10-PCS	Procedure
OSWN3JZ	Revision of Synthetic Substitute in Left Metatarsal-Phalangeal Joint, Percutaneous Approach	ICD-10-PCS	Procedure
OSWN4JZ	Revision of Synthetic Substitute in Left Metatarsal-Phalangeal Joint, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSWP0JZ	Revision of Synthetic Substitute in Right Toe Phalangeal Joint, Open Approach	ICD-10-PCS	Procedure
OSWP3JZ	Revision of Synthetic Substitute in Right Toe Phalangeal Joint, Percutaneous Approach	ICD-10-PCS	Procedure
OSWP4JZ	Revision of Synthetic Substitute in Right Toe Phalangeal Joint, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSWQ0JZ	Revision of Synthetic Substitute in Left Toe Phalangeal Joint, Open Approach	ICD-10-PCS	Procedure
OSWQ3JZ	Revision of Synthetic Substitute in Left Toe Phalangeal Joint, Percutaneous Approach	ICD-10-PCS	Procedure
OSWQ4JZ	Revision of Synthetic Substitute in Left Toe Phalangeal Joint, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSWR0JZ	Revision of Synthetic Substitute in Right Hip Joint, Femoral Surface, Open Approach	ICD-10-PCS	Procedure
OSWR3JZ	Revision of Synthetic Substitute in Right Hip Joint, Femoral Surface, Percutaneous Approach	ICD-10-PCS	Procedure

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10-PCS) Codes Used to Define Joint Replacement

Code	Description	Code Type	Code Category
OSWR4JZ	Revision of Synthetic Substitute in Right Hip Joint, Femoral Surface, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSWS0JZ	Revision of Synthetic Substitute in Left Hip Joint, Femoral Surface, Open Approach	ICD-10-PCS	Procedure
OSWS3JZ	Revision of Synthetic Substitute in Left Hip Joint, Femoral Surface, Percutaneous Approach	ICD-10-PCS	Procedure
OSWS4JZ	Revision of Synthetic Substitute in Left Hip Joint, Femoral Surface, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSWT0JZ	Revision of Synthetic Substitute in Right Knee Joint, Femoral Surface, Open Approach	ICD-10-PCS	Procedure
OSWT3JZ	Revision of Synthetic Substitute in Right Knee Joint, Femoral Surface, Percutaneous Approach	ICD-10-PCS	Procedure
OSWT4JZ	Revision of Synthetic Substitute in Right Knee Joint, Femoral Surface, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSWU0JZ	Revision of Synthetic Substitute in Left Knee Joint, Femoral Surface, Open Approach	ICD-10-PCS	Procedure
OSWU3JZ	Revision of Synthetic Substitute in Left Knee Joint, Femoral Surface, Percutaneous Approach	ICD-10-PCS	Procedure
OSWU4JZ	Revision of Synthetic Substitute in Left Knee Joint, Femoral Surface, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSWV0JZ	Revision of Synthetic Substitute in Right Knee Joint, Tibial Surface, Open Approach	ICD-10-PCS	Procedure
OSWV3JZ	Revision of Synthetic Substitute in Right Knee Joint, Tibial Surface, Percutaneous Approach	ICD-10-PCS	Procedure
OSWV4JZ	Revision of Synthetic Substitute in Right Knee Joint, Tibial Surface, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure
OSWW0JZ	Revision of Synthetic Substitute in Left Knee Joint, Tibial Surface, Open Approach	ICD-10-PCS	Procedure
OSWW3JZ	Revision of Synthetic Substitute in Left Knee Joint, Tibial Surface, Percutaneous Approach	ICD-10-PCS	Procedure
OSWW4JZ	Revision of Synthetic Substitute in Left Knee Joint, Tibial Surface, Percutaneous Endoscopic Approach	ICD-10-PCS	Procedure

Appendix C. Specifications for Parameters for this Request

Sentinel's Cohort Identification and Descriptive Analysis (CIDA) tool, version 5.0.5 was used to compare the frequency of diagnoses and procedures for joint replacement using International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), and International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10-PCS) codes.

Enrollment Gap: 45 days

Age Groups: 21-64, 65-74, 75-84, 85-99 years

Enrollment Requirement: 183 days for incidence scenarios; 0 days for prevalence scenarios

Coverage Requirement: Medical and drug coverage

Scenario	Query Start Date	Query End Date	Event					Cohort Definition	Care Setting
			Event	Event Code Type	Incident with Respect To:	Washout (days)			
1	4/1/2015	9/30/2015	Joint Replacement	ICD-9-CM	ICD-9-CM	183	First valid event only	Any	
2	4/1/2016	9/30/2016	Joint Replacement	ICD-10-CM/PCS	ICD-10-CM/PCS	183	First valid event only	Any	
3	10/1/2010	9/30/2016	Joint Replacement	ICD-9-CM	ICD-9-CM or ICD-10-CM/PCS	183	First valid event only	Any	
4	10/1/2010	9/30/2016	Joint Replacement	ICD-10-CM/PCS	ICD-9-CM or ICD-10-CM/PCS	183	First valid event only	Any	
5	10/1/2010	9/30/2016	Joint Replacement	ICD-9-CM	N/A	0	Any valid events	Any	
6	10/1/2010	9/30/2016	Joint Replacement	ICD-10-CM/PCS	N/A	0	Any valid events	Any	

ICD-9-CM and ICD-10-CM are provided by Optum360. ICD-10-CM codes were mapped from ICD-9-CM codes using the Centers for Medicare and Medicaid Services General Equivalence Mappings.