

Converting MS-DRGs 26.0 to ICD-10-CM and ICD-10-PCS

Introduction

This paper describes the project CMS undertook to convert the ICD-9-CM based Medicare Severity – Diagnosis Related Groups (MS-DRGs), version 26.0, to ICD-10-CM and ICD-10-PCS (ICD-10-CM/PCS) codes. The project was an exercise to evaluate the effectiveness of the General Equivalence Mappings (GEMs) and to learn how best to use them in converting data. The GEMs are a tool that assist in converting ICD-9-CM codes to the relevant ICD-10-CM/PCS codes (forward mapping) and ICD-10-CM/PCS codes back to the relevant ICD-9-CM codes (backward mapping). The GEMs were developed to assist CMS as well as all other data users who would need to convert ICD-9-CM data or payment systems to ICD-10-CM/PCS codes. ICD-10-CM and ICD-10-PCS will be implemented as the national Health Insurance Portability and Accountability (HIPAA) standard and replace ICD-9-CM effective with services provided on or after October 1, 2013.

The project was also a preliminary exercise in data conversion using the GEMs. The public was informed about this undertaking through the ICD-9-CM Coordination and Maintenance Committee meetings. Lessons learned from this exercise were to be shared with the health care industry so that similar data conversion exercises would be less challenging. CMS undertook a two stage approach to this exercise. The first stage involved developing an approach to the MS-DRG conversion to ICD-10-CM/PCS, and using this approach to convert the digestive system section of the MS-DRGs. Information from this first effort was shared with the public at the September 24-25, 2008 ICD-9-CM Coordination & Maintenance Committee. A Summary Report of this meeting along with slides presented can be found at http://www.cms.hhs.gov/ICD9ProviderDiagnosticCodes/03_meetings.asp#TopOfPage . Refinements were made to this approach based on lessons learned in the first stage. Stage two used the modified approach and automation of specific steps to convert the remaining parts of the MS-DRGs.

This paper provides detailed information on both stages of this MS-DRG conversion project including the approach used, the type of staff involved, and challenges identified. Lessons learned in this project are also described. The lessons learned include generic issues and challenges encountered and how these were resolved. During the project CMS' contractor automated many of the conversion activities using the GEMS. These automated steps are clearly described in this paper. Recommendations on how others might conduct a similar conversion of data and payment systems are included.

This project was the first large scale use of the GEMS to convert a major payment system. The MS-DRGs were selected because the payment system is so complex. All ICD-9-CM codes are included in the MS-DRG payment logic. There are many code specific tables and code interactions within the MS-DRG logic. Therefore, CMS felt the MS-DRGs would provide an excellent opportunity to test the GEMS in data conversion;

learn how best to apply the GEMs to data conversion; and discover any errors within the GEMs that should be corrected for the 2010 version of the GEMs.

Why the Project was Undertaken

The project was undertaken to convert the ICD-9-based MS-DRGs to ICD-10-CM/PCS codes. The project was undertaken for two additional reasons:

- To test the accuracy and completeness of the ICD-10-CM/PCS General Equivalence Mappings (GEMs) and make updates to the GEMs as needed
- To provide the industry with an example of the conversion process to assist in learning how to convert other applications and data from ICD-9-CM to ICD-10-CM/PCS

There may be a misconception that CMS developed the GEMs exclusively to convert MS-DRGs, and as a result they are only useful for MS-DRGs or at best for reimbursement applications. This is not the case. The GEMs were developed as a tool to convert any ICD-9-CM application or database from ICD-9-CM to ICD-10-CM/PCS. The GEMs are not biased toward any particular application. Like a translation dictionary, the GEMs are based on the meanings of the code being looked up, where “meaning” refers to the correspondence between the official documents (tabular and index) which define each code set.

MS-DRGs, with its hierarchical logic for grouping a coded record into the appropriate reimbursement category, is one of the most sophisticated payment systems in the country and therefore represents a complex conversion project. The lesson here is obvious: if CMS can use the GEMs as the basis of replicating MS-DRGs and producing an ICD-10-CM/PCS based version, others can do likewise with their systems and applications.

The MS-DRGs consist of lists of ICD-9-CM codes grouped in a given order based on logical relationships defined between the lists. Since CMS plans that any ICD-10-CM/PCS-driven modifications will build on the strengths of the current MS-DRGs, they must first replicate the current MS-DRG structure using comparable lists of ICD-10-CM/PCS codes. After CMS has gathered sufficient coded ICD-10-CM/PCS data to make adjustments based on the increased specificity of the ICD-10-CM/PCS codes, CMS would propose updates to the ICD-10-CM/PCS version of the MS-DRGs.

ICD-10-CM/PCS versus 5010 conversions

For many stakeholders, compliance with ICD-10-CM/PCS implementation means ensuring that their applications can accept seven digit codes and the other technical specifications laid out in the 5010 standards. That is not the aspect of ICD-10-CM/PCS compliance under discussion in this paper.

Conversion versus Mapping

Payers, providers and vendors healthcare applications are intimately connected with the *content* of the ICD-9-CM codes themselves. These stakeholders have built and continue to maintain applications that contain ICD-9-CM codes or lists of codes and that make decisions and recommendations based on those codes. Here, “application” refers to any computer-based system (claims processing, data analysis, grouping, editing, pricing, decision support, risk analysis, etc.) which currently contains ICD-9-CM codes or lists of codes and makes decisions and recommendations based on the codes.

Payers have medical necessity systems, payment adjudication systems and pricers, as well as any data analysis tools they have built themselves. While providers may buy many of their applications ready-made from vendors and will buy ICD-10-CM/PCS compliant applications from them, providers of all sizes—not just the large teaching hospitals—have built various in-house applications that contain ICD-9-CM codes. Vendors are there to provide ICD-10-CM/PCS compliant solutions to both payers and providers. Any software application, from whatever source, that currently makes decisions or recommendations based on individual ICD-9-CM codes or lists of codes must be able to perform the same functions on ICD-10-CM/PCS codes beginning October 1, 2013.

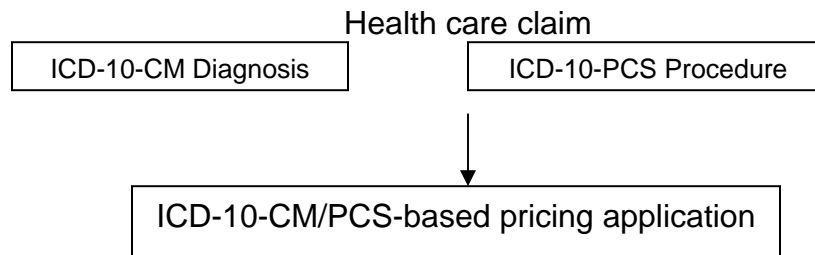
Organizations that produce and maintain their own ICD-9-CM based applications have two basic options for each application: 1) They can convert their application to process ICD-10-CM/PCS codes directly, or 2) They can take the incoming ICD-10-CM/PCS codes, map each ICD-10-CM/PCS code back to an ICD-9-CM code, and use that map to allow them to continue using their current ICD-9-CM based application. Both options will be described in the examples below. For demonstration purposes, a payer’s pricing application will be used as an example of an application.

Converting codes for a more limited project

Some users will be faced with updating codes in a more limited project, such as replacing ICD-9-CM codes with ICD-10-CM/PCS codes in a coverage policy. In this case there will be a specific narrative description of the conditions or procedures involved in the coverage policy. Users will find that it is quicker and more accurate to simply identify the correct ICD-10-CM/PCS codes by selecting the appropriate ICD-10-CM/PCS codes directly from code books or encoders. The GEMs can certainly assist with this process, but may not be needed.

Converting an Application

The first option is to convert an application to process ICD-10-CM/PCS codes directly. A pricer converted to use ICD-10-CM/PCS codes works like this:



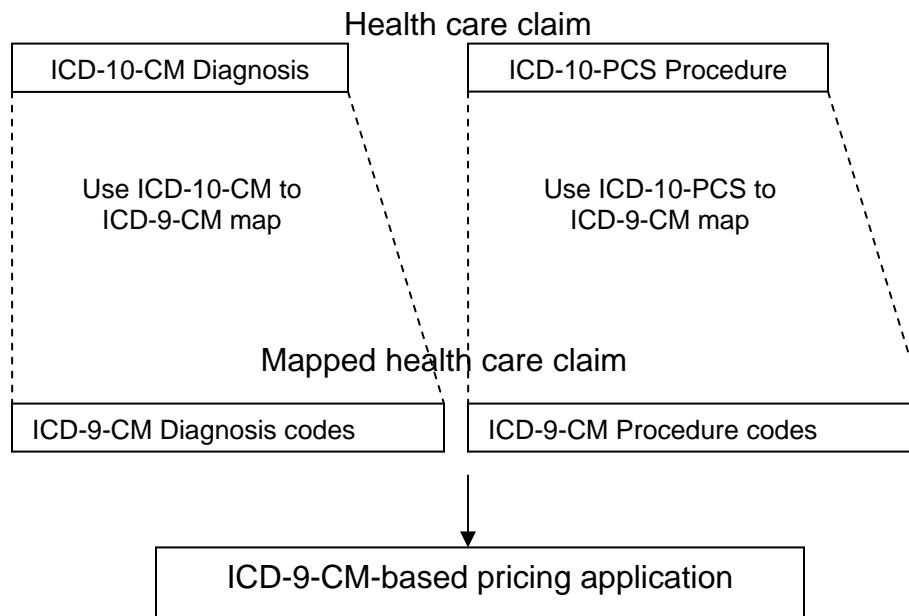
When the health care claim is received after ICD-10-CM/PCS implementation, the ICD-10-CM diagnosis codes and ICD-10-PCS procedure codes are sent to a pricing application that contains lists of ICD-10-CM/PCS codes. The software application looks up the ICD-10-CM/PCS codes on the claim in its internal lists or tables, according to rules and in the order prescribed by its programming logic, and assigns the claim to a payment category and resultant payment.

CMS is converting MS-DRGs so that they process ICD-10-CM/PCS codes directly. When a provider submits a claim to CMS coded in ICD-10-CM/PCS, the ICD-10-CM/PCS diagnosis and procedure codes are assigned to the correct MS-DRG by looking up the codes on the claim in its internal ICD-10-CM/PCS based MS-DRG definitions lists, according to rules and in the order prescribed by its programming logic, and assigns the claim to an MS-DRG.

Creating a Backward Map

The second option is to create a “backward” map that correlates each ICD-10-CM/PCS code to a single ICD-9-CM option. This map translates every new incoming ICD-10-CM/PCS code back to an ICD-9-CM code, effectively turning the ICD-10-CM/PCS based record into an ICD-9-CM based record, which then can be input into the ICD-9-CM based application.

A pricer that uses an ICD-10-CM/PCS to ICD-9-CM backward map instead of being converted to ICD-10-CM/PCS directly works like this:



Each ICD-10-CM diagnosis code submitted is mapped to an ICD-9-CM diagnosis code. Each ICD-10-PCS procedure code submitted is mapped to an ICD-9-CM procedure code. The claim is then submitted to the application and processed by its internal logic as if it had been submitted with ICD-9-CM codes.

The drawbacks of using a backward map are significant. If the original application analyzes a record in a step-wise process, then using a backward map instead of a converted application will give different results from a converted application. This means ICD-10-CM/PCS data collected from applications using an ICD-10-CM/PCS to ICD-9-CM backward map will not necessarily be comparable to previously collected ICD-9-CM data. The ongoing costs of maintaining payment logic using a legacy system will only increase over time as fewer and fewer people are available who are familiar with the old systems and the old code sets. Since ICD-9-CM will no longer be updated or maintained by CDC and CMS, it will be increasingly difficult to make informed decisions for the use of resources when the data is based on a system no longer being used or maintained.

On the other hand, the advantages of converting an application to ICD-10-CM/PCS are clear. Producing an ICD-10-CM/PCS based copy of an application that currently contains ICD-9-CM codes provides the most solid link to the ICD-9-CM historical data and the most solid foundation for an ICD-10-CM/PCS based future. If an organization is planning to use any part of its current application, and use ICD-10-CM/PCS-based data to direct future modifications to that application, they must first replicate the current structure of the application using comparable lists of ICD-10-CM/PCS codes. After they have gathered sufficient ICD-10-CM/PCS coded data they can make informed changes to their application based on the increased detail available in ICD-10-CM/PCS.

Cost Benefits of Conversion

CMS recognizes that there are cost benefits to converting payment systems to ICD-10-CM/PCS ahead of ICD-10-CM/PCS implementation. These cost benefits can be achieved by converting payment systems to ICD-10-CM/PCS logic as opposed to backward mapping (e.g., receiving ICD-10-CM/PCS claims; converting the ICD-10-CM/PCS codes to ICD-9-CM codes; and then processing claims using ICD-9-CM based logic).

The March 2004 RAND study, commissioned by HHS to study the costs and benefits of moving to the ICD-10-CM/PCS code sets, identified substantial benefits of converting to ICD-10-CM/PCS in the following areas:

- More accurate payments for new procedures
- Fewer miscoded, rejected, and improper reimbursement claims
- Better understanding of the value of new procedures
- Improved disease management
- Better understanding of health care outcomes

RAND estimated that the 10 year financial benefit of converting to ICD-10-CM/PCS could exceed \$7 billion, far greater than the cost of conversion. Backward mapping from ICD-10-CM/PCS to ICD-9-CM and maintaining ICD-9-CM based applications foregoes the opportunity for the increased effectiveness possible with ICD-10-CM/PCS and dramatically increases the risk of incurring negative consequences due to out of date applications. For payers, failure to be fully converted to ICD-10-CM/PCS could also become a competitive disadvantage. Given the substantial benefits of conversion, some employers and other purchasers of health insurance may require that payer systems be converted to ICD-10-CM/PCS as a contractual requirement.

With rapidly evolving technology and changing practice patterns, applications limited to the specificity of a static ICD-9-CM system will quickly become out of date. Core functions of payer applications such as claims adjudication, eligibility, medical necessity, underwriting, actuarial, provider contracting, provider pricing, quality monitoring, medical review, utilization management, disease management, appeals, internal audit, fraud detection, explanation of benefits and back-end reporting must be dynamic and be able to adapt to a changing environment. For example, the limitations of ICD-9-CM are so basic that for most procedures it is not even possible to differentiate whether the procedure was performed as an open procedure or an endoscopic procedure. In today's technology-driven environment, perpetuation of such limitations is not sustainable. Beyond not adequately recognizing new technology, continuing with ICD-9-CM based applications will result in missed opportunities for increasing the effectiveness of core applications.

In-house automation of conversion processes vs. vendor products and services

Organizations should evaluate whether they will use in-house programming resources to automate steps of the conversion process, or enlist the aid of one of several vendors offering ICD-10-CM/PCS conversion products and services. The GEMs contain a

complete and comprehensive bi-directional mapping between ICD-9-CM and ICD-10. However, the use of the GEMs requires application specific knowledge to be employed in order to accurately convert an application. Throughout this paper describing the ICD-10-CM/PCS MS-DRGs conversion process, the precise areas where MS-DRG specific knowledge was necessary have been highlighted. The great majority of ICD-9-CM codes (greater than 80 percent) had a direct one-to-one translation from ICD-10-CM/PCS and could be auto-replaced without the need for the application specific knowledge. Further, the areas that required application specific knowledge to be employed during the conversion of MS-DRGs are fairly generic and representative of the issues that will be encountered in the conversion of any large ICD-9-CM based application. This paper discusses examples of the generic issues that were addressed in the ICD-10-CM/PCS MS-DRG conversion, and describes the approaches used to resolve these issues.

The development of software to manage the conversion process through in-house programming resources is feasible. However, several vendors have already announced the availability of ICD-10-CM/PCS conversion systems, should organizations choose to use this approach.

When to begin converting an application

It is recommended that those engaged in converting applications begin the process in 2010. Given the long lead times necessary for acceptance testing of major new applications in large systems, the conversion of ICD-9-CM based systems should ideally be completed by the end of 2011. This would leave approximately two years to test the converted application and integrate it with other applications and businesses processes before the implementation date in 2013. For a description of the conversion process, please see the section entitled, “Summary: Converting an ICD-9-CM based application to ICD-10-CM/PCS.”

Beginning the application conversion process is separate from the process for detailed education of coders. It is recommended that detailed coder training begin approximately six months before implementation. Therefore detailed coder training could begin in April 2013. This recommendation for coder education is consistent with the recommendations of the American Hospital Association and the American Health Information Management Association.

GEMs Background

CMS and the Centers for Disease Control and Prevention (CDC) created the national version of the General Equivalence Mappings (GEM) to ensure that consistency in national data is maintained. They have made a commitment to update the GEMs annually along with the updates to International Classification of Diseases, 10th Edition, Clinical Modification (ICD-10-CM) and Procedure Coding System (PCS) during the transition period prior to ICD-10-CM/PCS implementation. CMS and CDC will maintain the GEMs for at least three years beyond October 1, 2013, which is the compliance date for implementation of ICD-10-CM/PCS for all covered entities.

The GEMs are a tool that can be used to convert applications and data from ICD-9-CM to ICD-10-CM/PCS and vice versa. Mapping from ICD-10-CM and PCS codes back to ICD-9-CM codes is referred to as backward mapping. Mapping from ICD-9-CM codes to ICD-10-CM and PCS codes is referred to as forward mapping. The GEMs are a comprehensive translation dictionary that can be used to accurately and effectively convert any ICD-9-CM-based application to ICD-10-CM/PCS, or translate any ICD-9-CM-based data, including data for tracking quality, recording morbidity/mortality, and calculating reimbursement.

The GEMs are complete in their description of all the mapping possibilities as well as when there are new concepts in ICD-10-CM/PCS that are not found in ICD-9-CM. All ICD-9-CM codes and all ICD-10-CM/PCS codes are included in the collective GEMs, as follows:

- All ICD-10-CM codes are in the ICD-10-CM to ICD-9-CM GEM
- All ICD-9-CM diagnosis codes are in the ICD-9-CM to ICD-10-CM GEM
- All ICD-10-PCS codes are in the ICD-10-PCS to ICD-9-CM GEM
- All ICD-9-CM procedure codes are in the ICD-9-CM to ICD-10-PCS GEM

CMS believes that the industry will have a better understanding of the GEMs after learning about the MS-DRG conversion project. The full translation capability of the GEMs was a key factor in the project's successful completion. The GEMs were essential in producing consistent, repeatable results in translating the various code lists that comprise MS-DRGs. The GEMs allowed the conversion team to partially automate the translation process so the team could focus on clinical review of the results and reduce time spent on duplicative and inconsistent manual translation. A key goal of this project is to demonstrate that the GEMs can be used to convert large applications with a high degree of complexity and still preserve the essential logic of the application.

MS-DRG Conversion Project

Converting MS-DRGs has taken approximately 18 months to complete, beginning with the initial conversion process design and planning. The first nine months was spent on a test conversion of MDC 6 during which the basic process was developed and tested.

The core conversion team consisted of researchers, physicians, clinical coding and MS-DRG analysts, and programmers. The programmers on the project extracted lists from the MS-DRGs, organized them, translated the lists using the GEMs, and produced reports of the results for review and testing. The other team members participated in process design and refinement, resolution of translation issues, and review of the translated lists. All of the team members have expertise in MS-DRGs, ICD-10-CM/PCS, the GEMs, or some combination of the three. Several team members were key participants in the original DRG development project in the 1970's at Yale University, the initial design and development of ICD-10-PCS, and in the initial design and development of the ICD-10-CM/PCS GEMs. In addition, under contract to CMS and CDC, members of the conversion team are currently responsible for producing:

- The annual update of MS-DRGs
- The annual update of ICD-10-PCS

- The annual update of the ICD-10-CM/PCS GEMs

For the first stage of the project, the plan was to find and replace all of the code lists in MDC 6, *Diseases and Disorders of the Digestive System*, in order to test the GEMs, to refine the conversion process and methods, and to experiment with various methods for presenting the resulting ICD-10-CM/PCS code lists for review. MDC 6 was chosen because it was felt this category represented the average complexity of MS-DRGs and would allow adequate development and testing of the general process. If a less complex MDC were chosen, some issues that crop up repeatedly in many of the MDCs would not have been encountered. If a more complex MDC were chosen, incorrect assumptions regarding characteristics specific to only that MDC could have been made.

The Conversion Process

MS-DRGs, as with many other applications that process clinical codes, is composed of two basic things:

- Defined lists of codes
- Programs acting on the specified logical relationships between those lists

CMS' objective in the conversion is to code a record using ICD-10-CM/PCS codes and arrive at the same MS-DRG had the same case been coded using ICD-9-CM codes. At first it was thought this would necessitate rewriting all the programs in the MS-DRGs, with the requirement that the rewritten MS-DRGs behave the same way the ICD-9-CM MS-DRGs do. But soon it was realized that because the ICD-9-CM version of MS-DRGs consists of defined lists of codes, and logic that acts on the lists of codes, what actually needed to be done was a much more straightforward and less time-consuming task that would produce the replicated ICD-10-CM/PCS version of MS-DRGs required. This understanding was articulated as a basic principle that would guide the conversion of MS-DRGs:

- Find the lists of ICD-9-CM codes in an application and
- Replace them with lists of their ICD-10-CM/PCS code counterparts leaving the logic of the application unchanged

If this principle is followed as closely as possible taking into account the differences in meaning between the two code sets, then a record coded in ICD-9-CM and processed using the ICD-9-CM based version of MS-DRGs should result in the same MS-DRG assignment when that same record is coded in ICD-10-CM/PCS and processed using the ICD-10-CM/PCS based version of MS-DRGs. This principle was tested in practice using the code lists in MDC 6.

Finding MDC 6 Lists

In the case of MS-DRGs in MDC 6, eleven diagnosis lists and ten procedure code lists were extracted from the MS-DRGs and organized into the mutually exclusive categories shown in the following table.

MDC 6 Mutually Exclusive Diagnosis Lists Extracted and Organized

MDC 6 Mutually Exclusive Diagnosis Lists	MDC 6 Mutually Exclusive Procedure Lists
PDX in Major Esophageal Disorders (368-370) PDX in Major Gastrointestinal Disorders and Peritoneal Infections (371-373) PDX in Digestive Malignancy (374-376) PDX in G.I. Hemorrhage (377-379) PDX in Complicated Peptic Ulcer (380-384) PDX in Uncomplicated Peptic Ulcer (380-384) PDX in Inflammatory Bowel Disease (385-387) PDX in G.I. Obstruction (388-390) PDX in Esophagitis, Gastroenteritis and Miscellaneous Digestive Disorders (391-392) PDX in Other Digestive System Diagnoses (393-395)	Stomach, Esophageal and Duodenal Procedures (326-328) Major Small and Large Bowel Procedures (329-331) Rectal Resection (332-334) Peritoneal Adhesiolysis (335-337) Appendectomy (338-343) Minor Small and Large Bowel Procedures (344-346) Anal and Stomal Procedures (347-349) Inguinal and Femoral Hernia Procedures (350-355) Hernia Procedures except Inguinal and Femoral (350-355) Other Digestive System O.R. Procedures (356-358)

MDC 6 Stand-alone Diagnosis Lists Extracted and Organized

MDC 6 Stand-alone Diagnosis Lists	MDC 6 Stand-alone Procedure Lists
Complicating PDX for Appendectomy (338-343)	None

In any application, identifying a list as mutually exclusive or stand-alone is fundamental to the correct working of the application's logic, and therefore, to the complete and accurate replication of its lists in ICD-10-CM/PCS. A mutually exclusive category is a collection of lists where every ICD-9-CM code can be a member of one and only one of the lists in the category. For example, the 25 MDCs in MS-DRGs are a mutually exclusive category. Being mutually exclusive is fundamental to the correct working of the MS-DRGs. The first thing the MS-DRGs asks in processing a medical record is, "What is the principal diagnosis?" and based on the ICD-9-CM code in the principal diagnosis field on the claim, it assigns that record to an MDC. Clearly the MDC category must be mutually exclusive. If an ICD-9-CM code were on more than one list, the MS-DRGs would get two MDC assignments where it needs one, and be unable to assign the code to an MDC. The program would fail at that point and be unable to move to the next level in the MS-DRG logic.

By the same token, the principal diagnosis lists within MDC 6 (and other MDCs) are also mutually exclusive. Once the MS-DRG grouper logic assigns a record to an MDC based on the principal diagnosis, it will then assign the record provisionally to a medical MS-DRG group within a single MDC based on the principal diagnosis.

There are also mutually exclusive procedure lists within an MDC. In the MDC 6 lists shown above (and other MDCs), every ICD-9-CM procedure code used by the logic in a mutually exclusive procedure category can be a member of only one of the procedure lists in that category.

Stand-alone lists are code lists that operate in tandem with mutually exclusive lists and further clarify MS-DRG assignment. For MDC 6, the stand-alone list "Complicating PDX for Appendectomy" is a list of ICD-9-CM diagnosis codes that, if found on the record in tandem with one of the ICD-9-CM procedure codes in the procedure list for the

Appendectomy MS-DRGs, results in assignment to MS-DRGs 338-340 Appendectomy with Complicated Principal Diagnosis rather than MS-DRGs 341-343 Appendectomy without Complicated Principal Diagnosis.

Extracting the lists and accurately defining their attributes was a necessary first step in the successful replication of MS-DRGs in ICD-10-CM/PCS. This part of the project was performed by the subject matter experts who maintain and update the current MS-DRGs, and who know the programs intimately. Ideally, the people who maintain an application will be the members of the conversion team to extract and define the lists of ICD-9-CM codes, though this is not always possible. In any case, it is critically important that the team who extracts the lists and defines their attributes understands the application well enough to find the lists, to accurately organize the lists in categories that share program logic, and to define each category's lists as mutually exclusive or stand-alone.

Replacing MDC 6 Lists

The primary method arrived at for replacing the lists of ICD-9-CM codes is as follows:

- Wherever possible, assign an ICD-10-CM/PCS code to the same DRG(s) as the ICD-9-CM code it translates to in the ICD-10-CM/PCS to ICD-9-CM GEM

It was discovered early in the design and testing of various conversion processes that using the ICD-10-CM/PCS to ICD-9-CM GEM for the initial translation was key to the success of the conversion, for two important reasons:

- 1) The ICD-10-CM/PCS GEMs contain all of the ICD-10-CM/PCS codes; the ICD-9-CM GEMs do not.
- 2) The ICD-10-CM/PCS to ICD-9-CM GEMs translations are based on the (often more specific) meaning of the ICD-10-CM/PCS codes; the ICD-9-CM to ICD-10-CM/PCS GEMs translations are based on the meaning of the ICD-9-CM codes.

All possible ICD-10-CM/PCS codes must be included in the translation, because a record submitted in ICD-10-CM/PCS conceivably could use any of the valid ICD-10-CM/PCS codes, and the MS-DRG logic must be able to recognize and process the code correctly (even if “processing it correctly” means ignoring it in the case of procedure codes not used in the MS-DRG). Using the ICD-9-CM to ICD-10-CM/PCS GEM would risk not including ICD-10-CM/PCS codes on the replicated MS-DRG lists that need to be there. Such ICD-10-CM/PCS codes are not in the ICD-9-CM to ICD-10-CM/PCS GEM because the ICD-9-CM code does not include the specific concept(s) included in the ICD-10-CM/PCS code. A prominent example is found in the thousands of specific injury and poisoning codes in ICD-10-CM that specify the right or left body part. An ICD-9-CM code for a similar injury at a similar site cannot specify right or left and therefore translates in the ICD-9-CM to ICD-10-CM GEM to the unspecified choice.

It seems counterintuitive to say the GEMs translation must be based on the meaning of the ICD-10-CM/PCS code, when the objective is to try to replicate an application that currently consists of ICD-9-CM codes. It would seem that users want to look up the

meaning of the ICD-9-CM codes and simply replace them with their ICD-10-CM/PCS counterparts. While this approach sounds reasonable, it would not give the correct result. In a post-implementation world, the documentation in the medical record is being coded directly in ICD-10-CM/PCS. Therefore, users need to know what a correctly coded record in ICD-10-CM/PCS is likely to translate to in ICD-9-CM. Limiting all the ICD-10-CM/PCS possibilities that could have been coded from the documentation in the record to only those that can be expressed in the “language” of ICD-9-CM diminishes the range and power of the translation and any conversion projects based on the GEMs.

In addition, it seems not only counterintuitive but impossible to use the ICD-10-CM/PCS to ICD-9-CM GEMs when there are not any ICD-10-CM/PCS codes on the current lists, only ICD-9-CM codes. For converting MS-DRGs, the ICD-10-CM/PCS to ICD-9-CM GEMs were used in “reverse lookup.” Reverse lookup simply means the ICD-10-CM/PCS to ICD-9-CM GEM (where the ICD-10-CM/PCS code is in the first column in code order and the ICD-9-CM code translation is in the second column) was in effect “sorted” on the ICD-9-CM code, as if viewing it in a spreadsheet. Each ICD-9-CM code was looked up to find the corresponding ICD-10-CM/PCS code(s) that translate back to that ICD-9-CM code and therefore should replace the ICD-9-CM code wherever it is listed in the MS-DRGs. For converting applications, reverse lookup is a practical necessity because the application has only ICD-9-CM codes in its lists.

Having completed the initial translation of the eleven diagnosis lists and ten procedure lists in MDC 6, the team reviewed the results and set about to look for issues. Given the increased specificity of the ICD-10-CM/PCS codes, it was expected that each ICD-10-CM/PCS based list would contain more codes than the ICD-9-CM list it replaced, but still define the same basic clinical concepts that circumscribed the original ICD-9-CM based list. The lists in MDC 6 bore out this prediction. In the following example, four ICD-9-CM diagnosis codes for Crohn’s disease are replaced by 28 more specific ICD-10-CM diagnosis codes for Crohn’s disease in MS-DRGs 385-387 *Inflammatory Bowel Disease*.

ICD-9-CM Crohn’s Disease codes replaced by ICD-10-CM Crohn’s Disease codes

4 ICD-9-CM codes are replaced by	28 ICD-10-CM codes
555.0 Regional enteritis of small intestine	K50.00 Crohn's disease of small intestine without complications
555.1 Regional enteritis of large intestine	K50.011 Crohn's disease of small intestine with rectal bleeding
555.2 Regional enteritis of small intestine with large intestine	K50.012 Crohn's disease of small intestine with intestinal obstruction
555.9 Regional enteritis of unspecified site	K50.013 Crohn's disease of small intestine with fistula
	K50.014 Crohn's disease of small intestine with abscess
	K50.018 Crohn's disease of small intestine with other complication
	K50.019 Crohn's disease of small intestine with unspecified complications
	K50.10 Crohn's disease of large intestine without complications
	K50.111 Crohn's disease of large intestine with rectal bleeding

4 ICD-9-CM codes are replaced by	28 ICD-10-CM codes
	K50.112 Crohn's disease of large intestine with intestinal obstruction K50.113 Crohn's disease of large intestine with fistula K50.114 Crohn's disease of large intestine with abscess K50.118 Crohn's disease of large intestine with other complication K50.119 Crohn's disease of large intestine with unspecified complications K50.80 Crohn's disease of both small and large intestine without complications K50.811 Crohn's disease of both small and large intestine with rectal bleeding K50.812 Crohn's disease of both small and large intestine with intestinal obstruction K50.813 Crohn's disease of both small and large intestine with fistula K50.814 Crohn's disease of both small and large intestine with abscess K50.818 Crohn's disease of both small and large intestine with other complication

Issues Discovered in MDC 6 Test Conversion

Having team members who participated in the design and development of both the MS-DRGs and the GEMs, the team had the necessary background to predict the kinds of translation issues that would arise. For example, the team could predict that there would be issues because some ICD-10-CM/PCS codes were actually less specific than ICD-9-CM along certain dimensions and therefore these codes translated to more than one ICD-9-CM code. In such cases, it was necessary to find the GEM translations of ICD-10-CM/PCS codes translated to the ICD-9-CM lists in MDC 6 that would violate the requirement for mutual exclusivity if left in their raw translated form. These types of translation results were called “conflicts.” Programs were written to find them and the conversion team reviewed them.

Conflicts Found and Resolved in MDC 6

Where one ICD-10-CM/PCS code could equally plausibly replace two different ICD-9-CM codes on two mutually exclusive lists, this is called a *conflict*. This is one of the types of issues expected in the process of converting MDC 6. Conflicts occur when one ICD-10-CM/PCS code translates to two or more ICD-9-CM codes, and each ICD-9-CM code is a member of a different list in a mutually exclusive category. The ICD-10-CM/PCS code description clearly includes the meaning of all of the ICD-9-CM codes, with no clear preference between them based on the meaning of the ICD-9-CM code, as in the following example.

ICD-10-CM List Conflict in MDC 6

ICD-10-CM Code	ICD-9-CM Codes	Mutually Exclusive List
K22.8 Other specified diseases of esophagus Includes: Hemorrhage of esophagus NOS	530.82 Esophageal hemorrhage	Major Esophageal Disorders (368-370)
K22.8 Other specified diseases of esophagus Includes: Hemorrhage of esophagus NOS	530.89 Other diseases of esophagus	Esophagitis, Gastroenteritis and Miscellaneous Digestive Disorders (391-392)

In this case, the ICD-10-CM code description clearly includes two clinical concepts that are unique codes in ICD-9-CM. If both ICD-9-CM codes were in the same MS-DRG, then there would be no conflict. The conflict arises because the ICD-9-CM codes, when each is coded as the principal diagnosis, are assigned to two different MS-DRGs in MDC 6. If these two translations were used unaltered in the ICD-10-CM/PCS based version of MS-DRGs, the ICD-10-CM code K22.8 would be on more than one list in a mutually exclusive category, the MS-DRGs would get two MDC assignments where it needs one, and be unable to assign the code to an MDC. The program would fail at that point and be unable to move to the next level in the MS-DRG logic. The conflict is resolved only by choosing which list the ICD-10-CM code will remain on—effectively deciding which ICD-9-CM code it will replace—and removing the ICD-10-CM code from the other MS-DRG list.

The core team reviewed and resolved all diagnosis conflicts in MDC 6 by deciding which list the ICD-10-CM code would remain on and effectively which ICD-9-CM code it would replace. Where the MedPAR frequency data showed an overwhelmingly dominant ICD-9-CM code, frequency was the deciding factor over the closest match in terms of the meaning of the code. In the example, the team decided that K22.8 would remain on the MS-DRG list *Esophagitis, Gastroenteritis and Miscellaneous Digestive Disorders (391-392)* effectively replacing ICD-9-CM code 530.89 *Other diseases of esophagus*, rather than 530.82 *Esophageal hemorrhage*. Although the MedPAR frequency data were 20% higher for ICD-9-CM code 530.82, still they were not overwhelmingly dominant. It could not confidently be predicted that the great majority of all ICD-10-CM coded records submitted containing K22.8 would be representing the clinical concept “esophageal hemorrhage.” Therefore in this case the ICD-10-CM code K22.8 *Other specified diseases of esophagus* was assigned to the MS-DRG list *Esophagitis, Gastroenteritis and Miscellaneous Digestive Disorders (391-392)*, effectively replacing the closest matching ICD-9-CM code 530.89 *Other diseases of esophagus*.

ICD-10-CM list conflict in MDC 6 with associated FY 2007 MedPAR frequency

ICD-10-CM Code	ICD-9-CM Codes	Mutually Exclusive List	FY 2007 MedPAR records
K22.8 Other specified diseases of esophagus Includes: Hemorrhage of esophagus NOS	530.82 Esophageal hemorrhage	Major Esophageal Disorders (368-370)	10,167
K22.8 Other specified diseases of esophagus Includes: Hemorrhage of esophagus NOS	530.89 Other diseases of esophagus	Esophagitis, Gastroenteritis and Miscellaneous Digestive Disorders (391-392)	8,685

General ICD-9-CM Procedure Codes

Another issue anticipated, based on the conversion team's experience with the GEMs and development of ICD-10-PCS, was that ICD-10-PCS to ICD-9-CM translations of many general ICD-9-CM codes would lead to some inappropriate list assignment when their ICD-10-PCS counterparts were distributed in various lists. All ICD-10-PCS procedure codes specify the anatomic site of the procedure. Many of these codes translate to ICD-9-CM procedure codes that do not specify an anatomic site. Because the ICD-9-CM codes do not specify anatomic site, they may be listed in the surgical MS-DRGs for several MDCs. This presented a special conversion challenge. Hundreds of specific ICD-10-PCS procedure codes may replace one general ICD-9-CM procedure code, and if the initial translation is unaltered, those hundreds of specific ICD-10-PCS procedure codes will appear on every list where the general ICD-9-CM code is used in MS-DRGs, and many of the specific ICD-10-PCS codes are inappropriate anatomic sites for the list they are on.

ICD-9-CM code 92.27 *Implantation or insertion of radioactive elements* is a clear example of this issue. This code does not specify the body part where the radioactive element is inserted. Such vagueness is not possible in ICD-10-PCS—the body system and body part must be specified to be a valid code. If the unaltered translation of code 92.27 were to be used in MDC 6, the 261 codes in the following table specifying the insertion of a radioactive element would have been added to the MS-DRGs *Other Digestive System O.R. Procedures* (356-358). The codes are listed in a condensed format to save space. One line may include multiple unique ICD-10-PCS procedure codes specifying various approaches and anatomic sites.

Translation of general ICD-9-CM procedure code 92.27 in MDC 6

ICD-9-CM Code	PCS Codes	Anatomic Sites Specified	MDC/DRG Assignment
92.27 Implantation or insertion of radioactive elements	261	08H[01]X1Z Insertion of Radioactive Element into Eye, External Approach (2 codes) 0BH0[03478]1Z Insertion, Tracheobronchial Tree (5 codes) 0BH[KL][03478]1Z Insertion, Lung (10 codes) 0CH7*1Z Insertion, Tongue (3 codes) 0DH5[03478]1Z Insertion, Esophagus (5 codes) 0DHP*1Z Insertion, Rectum (5 codes) 0FHB[03478]1Z Insertion, Hepatobiliary Duct (5 codes) 0FHD[03478]1Z Insertion, Pancreatic Duct (5 codes) 0HH[TUV][0378X]1Z Insertion, Breast (15 codes) 0HH[WX][0378X]1Z Insertion, Nipple (10 codes) 0JHS[03]1Z Insertion, Subcutaneous Tissue and Fascia, Head and Neck (2 codes) 0JHT[03]1Z Insertion, Subcutaneous Tissue and Fascia, Trunk (2 codes) 0JHV[03]1Z Insertion, Subcutaneous Tissue and Fascia, Upper Extremity (2 codes) 0JHW[03]1Z Insertion, Subcutaneous Tissue and Fascia, Lower Extremity (2 codes) 0UHG[03478X]1Z Insertion, Vagina (6 codes) 0VH0*1Z Insertion, Prostate (5 codes) 0WH0[034]1Z Insertion, Head (3 codes) 0WH1[034]1Z Insertion, Cranial Cavity (3 codes) 0WH2[034]1Z Insertion, Face (3 codes) 0WH3[034]1Z Insertion, Oral Cavity and Throat (3 codes) 0WH[45][034]1Z Insertion, Jaw (6 codes) 0WH6[034]1Z Insertion, Neck (3 codes) 0WH8[034]1Z Insertion, Chest Wall (3 codes) 0WH[9B][034]1Z Insertion, Pleural Cavity (6 codes) 0WHC[034]1Z Insertion, Mediastinum (3 codes) 0WHD[034]1Z Insertion, Pericardial Cavity (3 codes) 0WHF[034]1Z Insertion, Abdominal Wall (3 codes) 0WHG[034]1Z Insertion, Peritoneal Cavity (3 codes) 0WHH[034]1Z Insertion, Retroperitoneum (3 codes) 0WHJ[034]1Z Insertion, Pelvic Cavity (3 codes) 0WH[KL][034]1Z Insertion, Back (6 codes) 0WHM[034]1Z Insertion, Perineum, Male (3 codes) 0WHN[034]1Z Insertion, Perineum, Female (3 codes) 0WHP[03478]1Z Insertion, Gastrointestinal Tract (5 codes) 0WHQ[03478]1Z Insertion, Respiratory Tract (5 codes) 0WHR[03478]1Z Insertion, Genitourinary Tract (5 codes) 0XH[23][034]1Z Insertion, Shoulder Region (6 codes) 0XH[45][034]1Z Insertion, Axilla (6 codes) 0XH[67][034]1Z Insertion, Upper Extremity (6 codes) 0XH[89][034]1Z Insertion, Upper Arm (6 codes) 0XH[BC][034]1Z Insertion, Elbow Region (6 codes)	MDC 06 Other Digestive System O.R. Procedures (356-358)

ICD-9-CM Code	PCS Codes	Anatomic Sites Specified	MDC/DRG Assignment
		0XH[DF][034]1Z Insertion, Lower Arm (6 codes) 0XH[GH][034]1Z Insertion, Wrist Region (6 codes) 0XH[JK][034]1Z Insertion, Hand (6 codes) 0YH[01][034]1Z Insertion, Buttock (6 codes) 0YH[56][034]1Z Insertion, Inguinal Region (6 codes) 0YH[78][034]1Z Insertion, Femoral Region (6 codes) 0YH[9B][034]1Z Insertion, Lower Extremity (6 codes) 0YH[CD][034]1Z Insertion, Upper Leg (6 codes) 0YH[FG][034]1Z Insertion, Knee Region (6 codes) 0YH[HJ][034]1Z Insertion, Lower Leg (6 codes) 0YH[KL][034]1Z Insertion, Ankle Region (6 codes) 0YH[MN][034]1Z Insertion, Foot (6 codes)	

Replacing a single general ICD-9-CM procedure code with ICD-10-PCS procedure codes in all their anatomic site detail resulted in assignment of ICD-10-PCS codes to lists in the MS-DRG that are unrelated to the body system of the MS-DRG, and therefore extremely unlikely to occur in tandem. In the case of MDC 6, only the ICD-10-PCS procedure codes specifying anatomic sites in the region of the digestive system were assigned to the MS-DRG *Other Digestive System O.R. Procedures (356-358)*.

Body System-specific translation of general ICD-9-CM procedure code 92.27 in MDC 6

ICD-9-CM Code	PCS Codes	Anatomic Sites Specified	MDC/DRG Assignment
92.27 Implantation or insertion of radioactive elements	21	0DH501Z Insertion of Radioactive Element into Esophagus, Open Approach 0DH531Z Insertion of Radioactive Element into Esophagus, Percutaneous Approach 0DH541Z Insertion of Radioactive Element into Esophagus, Percutaneous Endoscopic Approach 0DH571Z Insertion of Radioactive Element into Esophagus, Via Natural or Artificial Opening 0DH581Z Insertion of Radioactive Element into Esophagus, Via Natural or Artificial Opening Endoscopic 0DHP01Z Insertion of Radioactive Element into Rectum, Open Approach 0DHP31Z Insertion of Radioactive Element into Rectum, Percutaneous Approach 0DHP41Z Insertion of Radioactive Element into Rectum, Percutaneous Endoscopic Approach 0DHP71Z Insertion of Radioactive Element into Rectum, Via Natural or Artificial Opening 0DHP81Z Insertion of Radioactive Element into Rectum, Via Natural or Artificial Opening Endoscopic 0WHF01Z Insertion of Radioactive Element into Abdominal Wall, Open Approach 0WHF31Z Insertion of Radioactive Element into Abdominal Wall, Percutaneous Approach 0WHF41Z Insertion of Radioactive Element into	MDC 06 356-358 Other Digestive System O.R. Procedures

ICD-9-CM Code	PCS Codes	Anatomic Sites Specified	MDC/DRG Assignment
		Abdominal Wall, Percutaneous Endoscopic Approach 0WHG01Z Insertion of Radioactive Element into Peritoneal Cavity, Open Approach 0WHG31Z Insertion of Radioactive Element into Peritoneal Cavity, Percutaneous Approach 0WHG41Z Insertion of Radioactive Element into Peritoneal Cavity, Percutaneous Endoscopic Approach 0WHP01Z Insertion of Radioactive Element into Gastrointestinal Tract, Open Approach 0WHP31Z Insertion of Radioactive Element into Gastrointestinal Tract, Percutaneous Approach 0WHP41Z Insertion of Radioactive Element into Gastrointestinal Tract, Percutaneous Endoscopic Approach 0WHP71Z Insertion of Radioactive Element into Gastrointestinal Tract, Via Natural or Artificial Opening 0WHP81Z Insertion of Radioactive Element into Gastrointestinal Tract, Via Natural or Artificial Opening Endoscopic	

Rules were then developed in the second stage of the conversion process to distribute the ICD-10-PCS procedure codes to their appropriate MDCs and MS-DRGs. The resulting rule-based ICD-10-PCS code assignment for replacing ICD-9-CM code 92.27

Implantation or insertion of radioactive elements where it occurs in MS-DRGs is shown Appendix B.

ICD-10-CM/PCS Clusters of Significance

ICD-10-CM/PCS clusters are so called because multiple ICD-10-CM/PCS codes (most often in pairs) must be used together to fully replicate a single ICD-9-CM code. This is an issue whose significance was not fully grasped until the clusters were seen in context. In certain cases having the MS-DRG logic look for an ICD-10-CM/PCS cluster is the only way to replicate the concept in ICD-10-CM/PCS based MS-DRGs. An ICD-10-CM/PCS cluster is of significance for full and accurate replication of MS-DRGs when *each* of the codes in a cluster is also used to replace a *different* ICD-9-CM code on a separate, mutually exclusive list. This was learned early in the test conversion of MDC 6 by the following scenario.

ICD-10-PCS Cluster Necessary to Replicate ICD-9-CM code 46.51 in MS-DRGs 344-346

ICD-10-PCS Code(s)	ICD-9-CM Code	Mutually Exclusive DRG in MDC 06
0DQ80ZZ Repair Small Intestine, Open Approach	46.79 Other Repair Of Intestine	329-331 Major Small and Large Bowel Procedures
0WQFXZ2 Repair Abdominal Wall, Stoma, External Approach And	46.51 Closure Of Stoma Of Small Intestine	344-346 Minor Small and Large Bowel Procedures

ICD-10-PCS Code(s)	ICD-9-CM Code	Mutually Exclusive DRG in MDC 06
0DQ80ZZ Repair Small Intestine, Open Approach		
0WQFXZ2 Repair Abdominal Wall, Stoma, External Approach	46.41 Revision Of Stoma Of Small Intestine	347-349 Anal and Stomal Procedures

Here there are three MS-DRG categories that must in essence “share” two ICD-10-PCS procedure codes. In the first row of the table, one ICD-10-PCS procedure code by itself is assigned to one MS-DRG list; in the second row both ICD-10-PCS procedures code on a record are assigned to a second MS-DRG list; in the third row the other ICD-10-PCS procedure code by itself is assigned to a third MS-DRG list. If all three ICD-9-CM codes were in the same MS-DRG list, no change to the MS-DRG assignment logic would be necessary.

Programs were written to discover which ICD-10-CM/PCS clusters were necessary to fully replicate a DRG list. In this case the DRG assignment logic for MS-DRGs 344-346 must be modified to look for two ICD-10-CM/PCS codes where it once looked for only one ICD-9-CM code.

Completion of MDC 6 Test Conversion

Final review of the MDC 6 test conversion was completed in August of 2008. At the September 24, 2008 meeting of the ICD-9-CM Coordination and Maintenance Committee, a slide presentation was given summarizing the MDC 6 test conversion results which included information in the following table.

MDC 6 Test Conversion Summary

Summary Description	Diagnosis codes	Procedure codes	Total
Unique lists in MS-DRGs	~200	~300	~500
Unique lists in MDC 6	10	11	21
Codes in MDC 6 lists auto-replaced by GEMs	99%	91%	95%
Codes in MDC 6 lists auto-replaced by GEMs and modified by clinical review	1%	9%	5%

The report predicted that the percentage of codes requiring clinical review and modification would steadily decrease as rules were established and techniques for automation added to the process.

MDC 6 Test Conversion Definitions Manual

The resulting ICD-10-CM/PCS based MS-DRGs for MDC 6 were posted in definitions manual format in October of 2008 for public review and comment at:

http://www.cms.hhs.gov/ICD10/01m_2009_ICD10PCS.asp#TopOfPage

The definitions manual was posted in two format styles: one style listed every ICD-10-CM/PCS code singly with its accompanying full description, and one style listed the codes in condensed notation, with a condensed partial code and general description, followed in parentheses by the number of codes circumscribed by the condensed entry. The condensed version of MDC 6 is a 47-page pdf file; the full code version of MDC 6 is a 204-page pdf file.

Condensed diagnosis codes include only those parts of the code and description that are common to all codes in the condensed entry and uses asterisks to denote the characters of the code not displayed in full. For example, the 28 ICD-10-CM codes for Crohn's disease look like this in condensed format:

K50*** Crohn's disease [regional enteritis] (28 codes)

Condensed procedure codes list out all valid values included in the condensed entry only if some valid values are not included in the entry (e.g., if the approach value *X External* is not included in the entry); otherwise, asterisks are used to denote the characters of the code not displayed in full.

Excerpts from the two posted formats of procedure codes in the test conversion of MS-DRGs 350-352 in MDC 6, in condensed format followed by full code format are shown below.

ICD-10-CM/PCS based version MS-DRGs 350-352 in Condensed format

<p>MS-DRG 350-352 DRG 350 INGUINAL & FEMORAL HERNIA PROCEDURES W MCC DRG 351 INGUINAL & FEMORAL HERNIA PROCEDURES W CC DRG 352 INGUINAL & FEMORAL HERNIA PROCEDURES W/O CC/MCC</p> <p>INGUINAL AND FEMORAL HERNIA PROCEDURES OPERATING ROOM PROCEDURES</p> <p>0YQ[56A][034]ZZ Repair Inguinal Region (8 codes)</p> <p>0YQ[78E][034]ZZ Repair Femoral Region (9 codes)</p>

ICD-10-CM/PCS based version MS-DRGs 350-352 in Full Code format

MS-DRG 350-352**DRG 350 INGUINAL & FEMORAL HERNIA PROCEDURES W MCC****DRG 351 INGUINAL & FEMORAL HERNIA PROCEDURES W CC****DRG 352 INGUINAL & FEMORAL HERNIA PROCEDURES W/O CC/MCC****INGUINAL AND FEMORAL HERNIA PROCEDURES
OPERATING ROOM PROCEDURES**

0YQ50ZZ Repair Right Inguinal Region, Open Approach
0YQ53ZZ Repair Right Inguinal Region, Percutaneous Approach
0YQ54ZZ Repair Right Inguinal Region, Percutaneous Endoscopic Approach
0YQ60ZZ Repair Left Inguinal Region, Open Approach
0YQ63ZZ Repair Left Inguinal Region, Percutaneous Approach
0YQ64ZZ Repair Left Inguinal Region, Percutaneous Endoscopic Approach
0YQ70ZZ Repair Right Femoral Region, Open Approach
0YQ73ZZ Repair Right Femoral Region, Percutaneous Approach
0YQ74ZZ Repair Right Femoral Region, Percutaneous Endoscopic Approach
0YQ80ZZ Repair Left Femoral Region, Open Approach
0YQ83ZZ Repair Left Femoral Region, Percutaneous Approach
0YQ84ZZ Repair Left Femoral Region, Percutaneous Endoscopic Approach
0YQA0ZZ Repair Bilateral Inguinal Region, Open Approach
0YQA3ZZ Repair Bilateral Inguinal Region, Percutaneous Approach
0YQE0ZZ Repair Bilateral Femoral Region, Open Approach
0YQE3ZZ Repair Bilateral Femoral Region, Percutaneous Approach
0YQE4ZZ Repair Bilateral Femoral Region, Percutaneous Endoscopic Approach

CMS received no public comment on the posted ICD-10-CM/PCS based test conversion of MDC 6.

MS-DRG Conversion Stage Two—Conversion of the Remaining MS-DRGs

ICD-10-CM/PCS MS-DRG conversion of the remaining MDCs in the ICD-9-CM MS-DRGs began in late summer of 2008 as the conversion team was performing final review and making formatting decisions for the MDC 6 test conversion. Two clinical coding experts were added to the core team to assist with review of the translated lists. The process developed and refined during the test conversion of MDC 6 was applied to the remaining MDCs. The methods used to resolve conflicts, assign the specific translations of general ICD-9-CM procedure codes based on the body system of the MDC, and discover where ICD-10-CM/PCS clusters were necessary, were applied to the other 24 MDCs. In addition, other translation issues were discovered that affect MS-DRGs where the assignment logic is especially complex, such as the cardiovascular and orthopedic MS-DRGs.

Refinement and Automation of Stage One Methods

The approach used to resolve conflicts in MDC 6 proved to be a workable rule of thumb for resolving all conflicts. In addition to the mutually exclusive lists at the MDC and MS-DRG level, additional categories of mutually exclusive lists were analyzed for conflicts. Two prominent examples are the Complication/Comorbidity (CC) category and the Operating Room (OR) Procedure category. In stage two of the conversion project, clinical review and discussion of conflicts by the entire team were necessary only for those conflicts that were not easily resolved. The conflict resolution process was not automated. Since this area of the conversion meant that one of the ICD-9-CM codes in

conflict on an MS-DRG list would not be automatically replaced on that list, each case needed to be reviewed individually to resolve the conflict. For additional examples and discussion of the process of resolving conflicts, see Appendix C.

During the test conversion of MDC 6, clinical review of the translated lists was the method used to find general ICD-9-CM procedure codes that translated to specific ICD-10-PCS anatomic sites inappropriate for a given MDC. In stage two, queries in a translation database were used to find all ICD-9-CM procedure codes that translated to more than 100 ICD-10-PCS procedure codes. These were then screened to find all ICD-9-CM procedure codes that did not specify anatomic site *and* that were assigned to multiple MDCs. The selective assignment of anatomic site-specific ICD-10-PCS procedure codes was then accomplished with the aid of a reference table correlating MDC to ICD-10-PCS body system, shown in Appendix B.

In stage one of the conversion, discovering where ICD-10-CM/PCS clusters were necessary was done manually. In other words, where multiple ICD-10-CM/PCS codes were required to replicate the complete meaning of an ICD-9-CM code containing more than one procedure or diagnosis, the DRG list was reviewed to see if either one of the ICD-10-CM/PCS codes was already on the translated list, replacing a different ICD-9-CM code containing a single procedure or diagnosis. If such was the case, then an ICD-10-CM/PCS cluster was not necessary. In stage two of the conversion, programs were written to automate the discovery of necessary ICD-10-CM/PCS clusters.

Further Automation and Efficiencies

Additional programmed techniques were developed during the project that further automated the search for translation issues and made review of the translated results more efficient and effective. Programs were written to find and enable review of the ICD-9-CM codes not used in the ICD-10-CM/PCS to ICD-9-CM GEM to see if they were already adequately represented on the converted code list based on the previously performed GEM translation.

Programmed analysis and presentation of the MedPAR data produced a convenient way to review the frequency with which a given code was present on a submitted record, subdivided by MDC and DRG, and further distinguished by whether a code played any role in determining the MS-DRG assignment. With this additional information, it was possible to make more informed decisions in assigning an ICD-10-CM/PCS code to one and only one list to resolve a translation conflict.

Reverse index lookup functionality was used for both the ICD-9-CM and ICD-10-CM/PCS indexes. Reverse index lookup means an ICD-10-CM diagnosis code or an ICD-9-CM diagnosis or procedure code could be input in a search box and the program would display all the index entries that refer to a code. Many codes in the ICD-9-CM and ICD-10-CM/PCS classifications have more specific index entries that refer to a code than are indicated anywhere in the code description or associated tabular instruction. Analysts have long been handicapped because this portion of the classification is not widely accessible. Tools are not widely available that show at a glance all the index entries that

refer to a code, and therefore, all the conditions in the documentation that could have occasioned a code being put on the medical record.

The index reverse lookup enabled a comprehensive look at the complete meaning of the code. This functionality was indispensable in analyzing the translated lists. It allowed the conversion team to more accurately identify all the possible clinical concepts that could have been documented in the original medical record. It was also noted when it was found that entries in the GEMs could be expanded based on this new access to the complete meaning of a code.

In the following example, the index reverse lookup functionality was used to analyze ICD-10-CM diagnosis code *N32.89 Other specified disorders of bladder*. The code description is identical to the code description in ICD-9-CM code 59.68.

ICD-10-CM and ICD-9-CM tabular compared

ICD-10-CM tabular content for N32.89	ICD-9-CM tabular content for 59.68
N32.89 Other specified disorders of bladder	59.68 Other specified disorders of bladder

However, as is commonly the case with codes containing the words “other specified” in the code title, the index refers the user to ICD-10-CM code N32.89 for many other conditions not specified in the code title or the tabular instruction. In this case there are 50 index entries that refer to N32.89. Among them are two entries that have their own unique codes in ICD-9-CM. They are underlined in the following table.

Index entries that refer to ICD-10-CM Code N32.89

ICD-10-CM index entries referring to N32.89
Adhesions, adhesive (postinfective) > bladder (sphincter) Adhesions, adhesive (postinfective) > perivesical Atrophy, atrophic (of) > bladder Calcification > bladder Cicatrix (adherent) (contracted) (painful) (vicious) > bladder Clot (blood) > bladder Congestion, congestive > bladder Contraction(s), contracture, contracted > bladder Contraction(s), contracture, contracted > hourglass > bladder Contraction(s), contracture, contracted > vesical Cyst (colloid) (mucous) (simple) (retention) > bladder (multiple) (trigone) Cyst (colloid) (mucous) (simple) (retention) > vesical (orifice) Cystocele(-urethrocele) > male Cystoptosis Cystorrhagia Cystourethrocele > male Deformity > bladder (neck) (trigone) (sphincter) (acquired) Deformity > vesicourethral orifice (acquired) Dilatation > bladder (sphincter) Dilatation > vesical orifice Disease, diseased > bladder > specified NEC Disease, diseased > urinary (tract) > bladder > specified NEC Disorder (of) > bladder > specified NEC Displacement, displaced > bladder (acquired) Distension, distention > bladder

ICD-10-CM index entries referring to N32.89

Eversion > bladder
 Fibrosis, fibrotic > bladder
Hemorrhage, hemorrhagic (concealed) > bladder
 Hemorrhage, hemorrhagic (concealed) > intravesical
 Hemorrhage, hemorrhagic (concealed) > vesical
 Hernia, hernial (acquired) (recurrent) > bladder (mucosa) (sphincter) > male
 Hernia, hernial (acquired) (recurrent) > prevesical
 Hernia, hernial (acquired) (recurrent) > vesical > male
 Hyperemia (acute) (passive) > bladder
 Hypertrophy, hypertrophic > bladder (sphincter) (trigone)
 Inversion > bladder
 Irritable, irritability > bladder
 Irritation > bladder
 Leukoplakia > bladder (postinfectious)
 Malacoplakia > bladder
 Metaplasia > squamous cell, bladder
 Necrosis, necrotic (ischemic) > bladder (aseptic) (sphincter)
 Prolapse, prolapsed > bladder (mucosa) (sphincter) (acquired) > male
 Puncture > bladder (traumatic) > nontraumatic
Rupture, ruptured > bladder (sphincter) (nontraumatic) (spontaneous)
 Rupture, ruptured > vesical (urinary)
 Spasm(s), spastic, spasticity > bladder (sphincter, external or internal)
 Stricture > bladder
 Trabeculation, bladder
 Ulcer, ulcerated, ulcerating, ulceration, ulcerative > bladder (solitary) (sphincter) NEC

The underlined entries have unique ICD-9-CM codes not included in the current version of the ICD-10-CM to ICD-9-CM GEM, because it was not possible from the tabular instruction to know that the clinical concepts *hemorrhage of bladder* and *rupture of bladder* were included in ICD-10-CM code N32.89. Because the reverse index gave access to all the clinical concepts that refer to the ICD-10-CM code, two more specific ICD-9-CM codes are included in the complete meaning of the ICD-10-CM code, and as a result will be added as translation alternatives to the 2010 update of the ICD-10-CM to ICD-9-CM GEM.

Current and revised GEM entries for ICD-10-CM code N32.89

ICD-10-CM Code	Current ICD-10-CM to ICD-9-CM GEM entry	Revised ICD-10-CM to ICD-9-CM GEM entry
N32.89 Other specified disorders of bladder	N32.89 Other specified disorders of bladder Translates to 59.68 Other specified disorders of bladder	N32.89 Other specified disorders of bladder Translates To 59.66 Rupture of bladder, nontraumatic 59.67 Hemorrhage into bladder wall 59.68 Other specified disorders of bladder

Conversion of the Complication/Comorbidity (CC) List

MS-DRGs assign a patient record to an MS-DRG specifying a Major CC (MCC), CC, or without CC, depending on the presence of secondary diagnosis codes deemed MCCs or CCs in the context of the principal diagnosis. Using the ICD-10-CM to ICD-9-CM GEM

in reverse lookup mode, the 5,019 codes in the MCC/CC category were translated to ICD-10-CM as summarized in the following table. Since the process followed was the same as that used to convert MDC 6, conversion of the MCC and CC list was straightforward. 99.4% of the ICD-10-CM codes were auto-translated, with a concomitant decrease in the number of issues requiring group discussion to resolve.

MCC/CC Category Conversion Summary

Conversion Summary	MCC	CC	Total	% of MCC/CC
ICD-9-CM Codes on List	1,592	3,427	5,019	100
ICD-10-CM codes Auto-translated	3,152	13,594	16,845	99.4
ICD-10-CM List Conflicts	N/A	N/A	99	0.6
ICD-9-CM Codes with Concepts Discontinued in ICD-10-CM	43	55	98	2.0

The 1,592 codes in the ICD-9-CM based version of the MCC list were replaced by 3,152 codes in the ICD-10-CM based version. The 3,427 codes in the ICD-9-CM based version of the CC list were replaced by 13,594 codes in the ICD-10-CM based version. Programs were written to provide convenient, efficient translation review, displaying the ICD-10-CM code followed by the associated ICD-9-CM code it was replacing on the list, as shown in the following MCC examples in the areas of heart failure, bacterial pneumonia and respiratory failure.

ICD-10-CM based MCC examples with associated ICD-9-CM Code(s)

Heart Failure

ICD-10-CM Code	ICD-9-CM code translation	Comment
I50.21 Acute systolic (congestive) heart failure	428.21 Acute systolic heart failure	None
I50.23 Acute on chronic systolic (congestive) heart failure	428.23 Acute on chronic systolic heart failure	None
I50.31 Acute diastolic (congestive) heart failure	428.31 Acute diastolic heart failure	None
I50.33 Acute on chronic diastolic (congestive) heart failure	428.33 Acute on chronic diastolic heart failure	None
I50.41 Acute combined systolic (congestive) and diastolic (congestive) heart failure	428.41 Acute combined systolic and diastolic heart failure	None
I50.43 Acute on chronic combined systolic (congestive) and diastolic (congestive) heart failure	428.43 Acute on chronic combined systolic and diastolic heart failure	None

ICD-10-CM based MCC Examples with associated ICD-9-CM code(s)

Bacterial Pneumonia

ICD-10-CM Code	ICD-9-CM Code Translation	Comment
J13 Pneumonia due to Streptococcus pneumoniae	481 Pneumococcal pneumonia [streptococcus pneumoniae pneumonia]	None
J14 Pneumonia due to Hemophilus influenzae	482.2 Pneumonia due to hemophilus influenzae (h. influenzae)	None
J15.0 Pneumonia due to Klebsiella pneumoniae	482.0 Pneumonia due to klebsiella pneumoniae	None
J15.1 Pneumonia due to Pseudomonas	482.1 Pneumonia due to pseudomonas	None
J15.20 Pneumonia	482.40 Pneumonia due to	None

ICD-10-CM Code	ICD-9-CM Code Translation	Comment
due to staphylococcus, unspecified	staphylococcus, unspecified	
J15.21 Pneumonia due to staphylococcus aureus	482.41 Methicillin susceptible pneumonia due to Staphylococcus aureus 482.42 Methicillin resistant pneumonia due to Staphylococcus aureus	See J15.21 tabular instruction. Infection with drugs resistant to microorganisms is coded separately in ICD-10-CM to code Z16. Since both methicillin susceptible and methicillin resistant pneumonias are on the MCC list, there is no issue.
J15.29 Pneumonia due to other staphylococcus	482.49 Other staphylococcus pneumonia	None
J15.3 Pneumonia due to streptococcus, group B	482.32 Pneumonia due to streptococcus, group b	None
J15.4 Pneumonia due to other streptococci	482.30 Pneumonia due to streptococcus, unspecified 482.31 Pneumonia due to streptococcus, group a 482.39 Pneumonia due to other streptococcus	See J15.4 tabular instruction. ICD-10-CM code J15.4 includes all three clinical concepts— <i>group A</i> , <i>other specified</i> , and <i>unspecified streptococcal pneumonia</i> and therefore translates to three ICD-9-CM codes. Since all three ICD-9-CM codes are on the MCC list, there is no issue.
J15.5 Pneumonia due to Escherichia coli	482.82 Pneumonia due to escherichia coli [e.coli]	None
J15.6 Pneumonia due to other aerobic Gram-negative bacteria	482.83 Pneumonia due to other gram-negative bacteria	
J15.7 Pneumonia due to Mycoplasma pneumoniae	483.0 Pneumonia due to mycoplasma pneumoniae	None
J15.8 Pneumonia due to other specified bacteria	482.81 Pneumonia due to anaerobes 482.89 Pneumonia due to other specified bacteria	See J15.8 tabular instruction and index. ICD-10-CM code J15.8 includes both clinical concepts— <i>anaerobic</i> and <i>other specified bacterial pneumonia</i> and therefore translates to two ICD-9-CM codes. Since both ICD-9-CM codes are on the MCC list, there is no issue.
J15.9 Unspecified bacterial pneumonia	482.9 Bacterial pneumonia, unspecified	None

Fourteen ICD-10-CM bacterial pneumonia codes replaced eighteen ICD-9-CM bacterial pneumonia codes on the MCC list. Two ICD-10-CM codes, *J15.4 Pneumonia due to other streptococci* and *J15.8 Pneumonia due to other specified bacteria*, include clinical concepts specified in unique ICD-9-CM codes. If the ICD-9-CM codes were on different lists in the CC category, there would be a list conflict. Since all the ICD-9-CM codes are on the same list in the CC category, there is no issue. ICD-10-CM code *J15.21 Pneumonia due to staphylococcus aureus* replaces both ICD-9-CM codes *482.41 Methicillin susceptible pneumonia due to Staphylococcus aureus* and *482.42 Methicillin resistant pneumonia due to Staphylococcus aureus*. In ICD-10-CM the drug resistance of the microorganism is specified as a separate code. If the ICD-9-CM code specifying methicillin resistance were on a different list in the CC category from the ICD-9-CM code specifying methicillin susceptibility, there would be a list conflict. Since both ICD-9-CM codes are on the same list in the CC category, there is no issue.

ICD-10-CM Based MCC Examples with Associated ICD-9-CM Code(s)
Respiratory Failure

ICD-10-CM Code	ICD-9-CM Code Translation	Comment
J95.1 Acute pulmonary insufficiency following thoracic surgery	518.5 Pulmonary insufficiency following trauma and surgery	The ICD-10-CM code is more specific than the ICD-9-CM code, so more than one ICD-10-CM code replaced the ICD-9-CM code on the MCC list
J95.2 Acute pulmonary insufficiency following nonthoracic surgery	518.5 Pulmonary insufficiency following trauma and surgery	The ICD-10-CM code is more specific than the ICD-9-CM code, so more than one ICD-10-CM code replaced the ICD-9-CM code on the MCC list
J95.3 Chronic pulmonary insufficiency following surgery	518.5 Pulmonary insufficiency following trauma and surgery	The ICD-10-CM code is more specific than the ICD-9-CM code, so more than one ICD-10-CM code replaced the ICD-9-CM code on the MCC list
J95.82 Postprocedural respiratory failure	518.5 Pulmonary insufficiency following trauma and surgery	The ICD-10-CM code is more specific than the ICD-9-CM code, so more than one ICD-10-CM code replaced the ICD-9-CM code on the MCC list
J96.0 Acute respiratory failure	518.81 Acute respiratory failure	None
J96.2 Acute and chronic respiratory failure	518.84 Acute and chronic respiratory failure	None
J96.9 Respiratory failure, unspecified	518.81 Acute respiratory failure	See 518.81 tabular instruction. 518.81 includes Respiratory failure NOS

Seven ICD-10-CM respiratory failure codes replaced three ICD-9-CM respiratory failure codes on the MCC list. Four ICD-10-CM codes specify the acuity of the pulmonary insufficiency (acute vs. chronic vs. respiratory failure) following surgery, and whether or not the surgery was performed in the thoracic region or other body region. An additional code *J96.9 Respiratory failure, unspecified* has been added to the ICD-10-CM classification, which the GEM translates to *518.81 Acute respiratory failure* in ICD-9-CM, based on the includes note in the ICD-9-CM tabular instruction.

Clinical coding experts performed summary review of the auto-translated ICD-10-CM codes in both the MCC and CC lists to look for translation mismatches or concerns. Any questions about the accuracy and completeness of the GEMs translation were reported to the project lead for maintaining the GEMs, and if there were found to be an occasion for improving the GEMs, the suggestion was noted and the change made. See the section “Enhancements to the 2010 GEMs” for details.

Of the 5,019 codes in the ICD-9-CM based version of the MCC/CC category, 98 were not explicitly replaced by an ICD-10-CM code(s) in the translated version of the category. Certain outmoded terms used in the ICD-9-CM classification were discontinued in ICD-10-CM with the result that these concepts are not represented on the converted lists. In addition, some “unspecified” ICD-9-CM codes are so general as to make it difficult to translate to a meaningful ICD-10-CM counterpart. Examples of discontinued

concepts not explicitly replaced in the ICD-10-CM based lists are shown in the following table.

ICD-9-CM diagnosis codes on MCC list containing concepts discontinued in ICD-10-CM

ICD-9-CM Codes	Discontinued concept
250.12 Diabetes with ketoacidosis, type II or unspecified type, uncontrolled	"Uncontrolled"
533.71 Chronic peptic ulcer of unspecified site without mention of hemorrhage or perforation, with obstruction	"Obstruction"
828.1 Multiple fractures involving both lower limbs, lower with upper limb, and lower limb(s) with rib(s) and sternum, open	"Multiple unspecified fractures"

All ICD-9-CM codes not explicitly replaced in the MCC/CC list were reviewed by the clinical coding experts on the team. This review step was not an integral part of the conversion process itself. It was an extra step undertaken to test the GEMs, to ensure that the ICD-9-CM concept was in fact discontinued in ICD-10-CM.

Resolution of ICD-10-CM List Conflicts in the CC Category

The CC category consists of two mutually exclusive lists: a *Major CC Diagnosis* list and a *CC Diagnosis* list. An ICD-9-CM code cannot be on both lists, and so a replicated ICD-10-CM based version of the lists must behave the same way for the MS-DRG logic to work. The translation programs identified 99 ICD-10-CM codes that could have an equally plausibly replacement with two different ICD-9-CM codes, one on the MCC list, and the other either on the CC list or not designated as a CC at all. This situation is referred to as a *list conflict*. In a list conflict, the ICD-10-CM code description clearly includes the meaning of all of the ICD-9-CM translation alternatives, with no clear preference between them based on the meaning of the ICD-9-CM code, as in the following example.

ICD-10-CM list conflict example in CC category

ICD-10-CM Code	ICD-9-CM Codes	Mutually Exclusive List
R78.81 Bacteremia Includes: Septicemia NOS	038.9 Unspecified septicemia	Major Complication/Comorbidity
R78.81 Bacteremia Includes: Septicemia NOS	790.7 Bacteremia	Non-Major Complication/Comorbidity

The entire conversion team reviewed the list conflicts together initially to establish conventions by which a conflict would be resolved, whether by choosing the closest matching code translation or choosing the list containing the ICD-9-CM code with the overwhelmingly dominant frequency.

CC Category Conversion: List Conflicts Summary

List Conflicts Summary	ICD-10-CM Conflicts	% of ICD-10-CM CC/MCC
List Conflicts Resolved by Clinical Review	17	0.1
List Conflicts Resolution Automated Based on Frequency Data	82	0.5
Total List Conflicts Resolved	99	0.6

In the *R78.81 Bacteremia* list conflict example above, the ICD-10-CM code description clearly includes two clinical concepts that are unique codes in ICD-9-CM. If both ICD-9-CM codes were on the same CC list in MS-DRGs then there would be no conflict. In most cases, frequency data was the deciding factor in resolving the conflict. The majority of conflicts were resolved by assigning the ICD-10-CM code to the list containing the dominant ICD-9-CM code according to the fiscal year 2007 Medicare inpatient data set (MedPAR). In nearly all cases the frequency data were overwhelmingly in favor of one of the ICD-9-CM code alternatives, especially with diagnosis conflicts. In this example from the cardiovascular DRGs, the conflict R78.81 was resolved by assigning R78.81 to the *Major Complication/Comorbidity* list, replacing *038.9 Unspecified septicemia*, because the frequency with which this code is recorded is five times higher than *790.7 Bacteremia*.

ICD-10-CM list conflict example in CC category with FY 2007 MedPAR frequency

ICD-10-CM Code	ICD-9-CM Codes	Mutually Exclusive List	FY 2007 MedPAR records
R78.81 Bacteremia Includes: Septicemia NOS	038.9 Unspecified septicemia	Major Complication/Comorbidity	567,036
R78.81 Bacteremia Includes: Septicemia NOS	790.7 Bacteremia	Non-Major Complication/Comorbidity	104,815

Because the ICD-10-CM and ICD-9-CM diagnosis code sets share a common lineage, a conflict—where an ICD-10-CM code is less specific along some dimension than an ICD-9-CM code—often reflects the decision to consolidate two or more specific ICD-9-CM concepts each having their own unique code into one less detailed ICD-10-CM code. In the following example, it is likely that the team developing ICD-10-CM consolidated the clinical concepts contained in three specific ICD-9-CM codes into one general ICD-10-CM code because the conditions are so rare as not to justify maintaining that level of detail.

ICD-10-CM list conflict example in CC category with FY 2007 MedPAR frequency

ICD-10-CM Code	ICD-9-CM Codes	Mutually Exclusive List	FY 2007 MedPAR Records
A54.83 Gonococcal heart infection Includes: Gonococcal endocarditis Gonococcal myocarditis Gonococcal pericarditis	098.83 Gonococcal pericarditis	Major Complication/Comorbidity	0
A54.83 Gonococcal heart infection Includes: Gonococcal endocarditis Gonococcal myocarditis Gonococcal pericarditis	098.84 Gonococcal endocarditis	Major Complication/Comorbidity	0
A54.83 Gonococcal heart infection Includes: Gonococcal endocarditis Gonococcal myocarditis Gonococcal pericarditis	098.85 Other gonococcal heart disease	Non-Major Complication/Comorbidity	0

In this case the conflict was resolved by assigning A54.83 to the *Non-major Complication/Comorbidity* list, replacing 098.85 *Other gonococcal heart disease*, because its more general code title is the closest match to the code title of the ICD-10-CM code. Frequency data did not need to play any role in making this decision, since all of the ICD-9-CM coded conditions virtually never occur according to the data set relevant for MS-DRGs.

ICD-10-CM Codes that Include a CC/MCC

Certain ICD-10-CM diagnosis codes specify both an underlying condition and an acute manifestation or complication in one code. When translated to ICD-9-CM, two codes are needed, one for the underlying condition and one for the acute manifestation or complication. When an ICD-10-CM combination diagnosis code would be its own CC/MCC in the MS-DRGs if it had been coded in ICD-9-CM, this result was replicated in the ICD-10-CM based version of MS-DRGs. The DRG assignment logic will be modified to assign all ICD-10-CM codes that meet these criteria to the appropriate “with CC” or “with MCC” MS-DRG in a category.

The following table presents a handful of prominent, frequently coded ICD-9-CM code pairs that are replaced by one ICD-10-CM combination code. The ICD-9-CM secondary diagnosis codes are designated a CC or MCC when the ICD-9-CM code in the first column is the principal diagnosis. The corresponding ICD-10-CM code, when recorded as the principal diagnosis, will be assigned to the appropriate “with CC” or “with MCC” MS-DRG in its category.

Examples of ICD-10-CM diagnosis codes that include a CC/MCC

ICD-9-CM Principal Diagnosis	ICD-9-CM Secondary Diagnosis	CC level	ICD-10-CM Code With CC/MCC
251.8 Other specified disorders of pancreatic internal	276.0 Hyperosmolality and/or hypernatremia	CC and MCC	E08.01 Diabetes mellitus due to underlying condition with

ICD-9-CM Principal Diagnosis	ICD-9-CM Secondary Diagnosis	CC level	ICD-10-CM Code With CC/MCC
secretion	780.01 Coma		hyperosmolarity with coma
414.0* (5 codes) Coronary atherosclerosis...	411.1 Intermediate coronary syndrome	CC	I25.7*0 (8 codes) Atherosclerosis of coronary artery with unstable angina
415.19 Other pulmonary embolism and infarction	415.0 Acute cor pulmonale	MCC	I26.09 Other pulmonary embolism with acute cor pulmonale
707* (10 codes) Pressure ulcer	707.23 Pressure ulcer, stage III 707.24 Pressure ulcer, stage IV	MCC	L89**[3,4] (46 codes) L89*[3,4] (4 codes)
995.92 Severe sepsis	785.52 Septic shock	MCC	R65.21 Severe sepsis with septic shock

Enhancements to the GEMs for 2010

One of the key reasons for undertaking the conversion of MS-DRGs was to test the accuracy and completeness of the GEMs, revise the GEMs accordingly, and publish the changes in the 2010 update to the GEMs so the rest of the industry could benefit from the testing.

Producing an accurate, comprehensive bi-directional translation reference between ICD-9-CM and ICD-10-CM/PCS is an extensive, complex undertaking. The GEMs were under development for several years, during which time they were tested for accuracy and completeness in a development environment. Once they were released for practical use, the GEMs could be more rigorously tested for usefulness and responsiveness to industry requirements. The GEMs were expected to evolve as they were tested in a real world context and ways were discovered to improve them.

Detailed scrutiny of the GEMs provided by the MS-DRG conversion project uncovered two general areas where it was felt the GEMs translations could be improved:

- Translation of ICD-10-CM diagnosis codes for injury and poisoning codes specifying subsequent encounter
- Translation of obstetrics codes between ICD-9-CM and ICD-10-CM

Both topics were referred to the Cooperating Parties on ICD-9-CM for advice on how to translate these areas of the GEMs. The first issue was clarified when the 2009 version of the ICD-10-CM guidelines were published. They provided the necessary instruction to accurately translate subsequent encounter injury and poisoning codes. The second issue was discussed with the Cooperating Parties, and resulted in a substantial change to the

internal rules for GEMs translation of diagnosis codes in the obstetrics chapters of ICD-9-CM and ICD-10-CM.

In addition, changes were made to individual GEM entries as opportunities for enhancement were discovered, such as the example shown earlier that expanded the ICD-10-CM to ICD-9-CM translation alternatives for ICD-10-CM code *N32.89 Other specified disorders of bladder* (see the section entitled “Further Automation and Efficiencies” for details). Individual GEM entries were corrected when they were found to be inaccurate or incomplete. These corrections and updates will be incorporated in the 2010 GEMs.

Translating Subsequent Encounter Injury and Poisoning Codes

The three general types of encounter information found in the 7th character of an ICD-10-CM injury and poisoning code are: initial encounter, subsequent encounter, and sequela. The initial encounter and sequela ICD-10-CM codes are not problematic to translate to ICD-9-CM: an initial encounter code translates to its closest ICD-9-CM counterpart in the ICD-10-CM to ICD-9-CM GEM, and a sequela encounter code translates to its corresponding ICD-9-CM late effect code in the ICD-10-CM to ICD-9-CM GEM. A translation of each encounter type is given in the following table.

ICD-10-CM to ICD-9-CM GEM translation of initial encounter and sequela of injury codes

Encounter specified	ICD-10-CM code	ICD-9-CM translation
Initial encounter	S52.121A Displaced fracture of head of right radius, initial encounter for closed fracture	813.05 Fracture of head of radius, closed
Sequela	S52.121S Displaced fracture of head of right radius, sequela	905.2 Late effect of fracture of upper extremities

Subsequent encounter ICD-10-CM codes for malunion and nonunion of fracture, like the initial and sequela codes, can be translated in a straightforward fashion using the ICD-10-CM to ICD-9-CM GEM, as shown in the following table.

ICD-10-CM to ICD-9-CM GEM translation of subsequent encounter codes *Malunion and Nonunion of Fracture*

Encounter specified	ICD-10-CM code	ICD-9-CM translation
Subsequent encounter, nonunion	S52.121K Displaced fracture of head of right radius, subsequent encounter for closed fracture with nonunion	733.82 Nonunion of fracture
Subsequent encounter, malunion	S52.121P Displaced fracture of head of right radius, subsequent encounter for closed fracture with malunion	733.81 Malunion of fracture

Subsequent encounter codes that apply specifically to fractures, “subsequent encounter for routine healing,” could have been difficult to translate. However, there are clear

indications in the ICD-10-CM tabular instruction that indicate how these should be translated to ICD-9-CM. The instructional notes for ICD-10-CM category *Z47 Orthopedic Aftercare*, state, “Excludes 1: Aftercare for healing fracture—code to fracture with 7th character D.” This articulated a clear standard for equating a subsequent encounter for healing fracture with aftercare, and translating such codes to the appropriate ICD-9-CM orthopedic aftercare code in the GEM, as shown in the following table.

ICD-10-CM to ICD-9-CM GEM translation of subsequent encounter
Fracture with Routine Healing

Encounter specified	ICD-10-CM code	ICD-9-CM translation
Subsequent encounter, routine healing	S52.121D Displaced fracture of head of right radius, subsequent encounter for closed fracture with routine healing	V54.12 Aftercare for healing traumatic fracture of lower arm
Subsequent encounter, routine healing	S72.345D Nondisplaced spiral fracture of shaft of left femur, subsequent encounter for closed fracture with routine healing	V54.15 Aftercare for healing traumatic fracture of upper leg
Subsequent encounter, routine healing	M84.459D Pathological fracture, hip, unspecified, subsequent encounter for fracture with routine healing	V54.23 Aftercare for healing pathologic fracture of hip
Subsequent encounter, routine healing	M84.58xD Pathological fracture in neoplastic disease, vertebrae, subsequent encounter for fracture with routine healing	V54.27 Aftercare for healing pathologic fracture of vertebrae

Indications for translating two major types of subsequent encounter codes besides fractures with routine healing were unclear:

- *subsequent encounter* as applied to all other injury and poisoning codes besides fracture codes
- *subsequent encounter for delayed healing*, applied to both traumatic and non-traumatic fracture codes

The ICD-10-CM guidelines were updated in January of 2009, and included the following instruction on coding subsequent encounter:

19a. Extension “D” subsequent encounter is used for encounters after the patient has received active treatment of the injury and is receiving routine care for the injury during the healing or recovery phase. Examples of subsequent care are: cast change or removal, removal of external or internal fixation device, medication adjustment, other aftercare and follow up visits following injury treatment.

The aftercare Z codes should not be used for aftercare of injuries. For aftercare of an injury, assign the acute injury code with the 7th character “D” (subsequent encounter).

This new guideline made it very clear that what would be coded in ICD-9-CM as an aftercare code in the V code chapter is reclassified in ICD-10-CM to the injury and poisoning chapter with the seventh character extension of D. After clarification from the Cooperating Parties, it was also established that coding “aftercare for fracture with delayed healing” (seventh character extensions of G, H, J) would be similarly translated to the appropriate ICD-9-CM V code for aftercare.

In the absence of explicit ICD-10-CM coding guidelines for the subsequent encounter 7th character extension, the 2009 version of the diagnosis ICD-10-CM GEMs for subsequent encounter injury and poisoning codes was translated to ICD-9-CM acute injury and poisoning codes. After the updated guidelines were published, these entries were revised accordingly for the 2010 version, as shown in the following table.

ICD-10-CM GEM entries to be updated in 2010 version

Encounter specified	ICD-10-CM code	2009 GEM ICD-9-CM translation	2010 GEM ICD-9-CM translation
Subsequent encounter	S51.011D Laceration without foreign body of right elbow, subsequent encounter	881.01 Open wound of elbow, without mention of complication	V58.89 Other specified aftercare
Subsequent encounter	T20.35xD Burn of third degree of scalp [any part], subsequent encounter	941.36 Full-thickness skin loss due to burn (third degree NOS) of scalp (any part)	V58.89 Other specified aftercare
Subsequent encounter	T40.1x1D Poisoning by heroin, accidental (unintentional), subsequent encounter	965.01 Poisoning by heroin	V58.89 Other specified aftercare
Subsequent encounter, delayed healing	S52.121G Displaced fracture of head of right radius, subsequent encounter for closed fracture with delayed healing	813.05 Fracture of head of radius, closed	V54.12 Aftercare for healing traumatic fracture of lower arm

This change affects the assignment of thousands of ICD-10-CM diagnosis codes in the converted MS-DRGs. In the 2009 version of the GEMs, the subsequent encounter codes would have been assigned to various injury and poisoning MS-DRGs, depending on the body system and the nature of the injury. After the new guidelines were published and the GEMs entries were updated, the new entries were used and tested in the MS-DRGs conversion project. As shown in the following table, subsequent encounter codes that were previously assigned using the 2009 GEMs translations to various injury and poisoning MS-DRGs are now assigned using the updated 2010 GEMs translations to the appropriate aftercare MS-DRGs.

Effect of updated ICD-10-CM GEM entries on MS-DRG assignment

Encounter specified	ICD-10-CM code	2009 GEM ICD-9-CM translation	MS-DRG assignment	2010 GEM ICD-9-CM translation	Updated MS-DRG assignment
Subsequent encounter	S51.011D Laceration without foreign body of right elbow, subsequent encounter	881.01 Open wound of elbow, without mention of complication	MDC 9 Trauma to the Skin, Subcutaneous Tissue and Breast (604-605)	V58.89 Other specified aftercare	MDC 23 Aftercare (949-950)
Subsequent encounter	T20.35xD Burn of third degree of scalp [any part], subsequent encounter	941.36 Full-thickness skin loss due to burn (third degree NOS) of scalp (any part)	MDC 22 Full Thickness Burns (927-933)	V58.89 Other specified aftercare	MDC 23 Aftercare (949-950)
Subsequent encounter	T40.1x1D Poisoning by heroin, accidental (unintentional), subsequent encounter	965.01 Poisoning by heroin	MDC 21 Poisoning and Toxic Effects of Drugs (917-918)	V58.89 Other specified aftercare	MDC 23 Aftercare (949-950)
Subsequent encounter, delayed healing	S52.121G Displaced fracture of head of right radius, subsequent encounter for closed fracture with delayed healing	813.05 Fracture of head of radius, closed	MDC 8 Fracture, Sprain, Strain and Dislocation Except Femur, Hip, Pelvis and Thigh (562-563)	V54.12 Aftercare for healing traumatic fracture of lower arm	MDC 8 Aftercare, Musculoskeletal System and Connective Tissue (559-561)

Translation of obstetrics codes between ICD-9-CM and ICD-10-CM

The obstetrics diagnosis chapters of ICD-9-CM and ICD-10-CM are similarly organized at the category level, and can be fairly easily correlated. However, the two code sets diverge dramatically at the code level. The ICD-9-CM obstetrics chapter (chapter 11) classifies conditions according to whether the patient delivered during the episode of care. For example, a code indicating the presence of placenta previa is further classified as follows:

641.00 Placenta previa without hemorrhage, unspecified as to episode of care
 641.01 Placenta previa without hemorrhage, with delivery
 641.03 Placenta previa without hemorrhage, antepartum

The ICD-10-CM obstetrics chapter (chapter 15) intentionally does not employ the episode of care axis of classification, but has been redesigned to further classify conditions based on the trimester of the pregnancy where clinically relevant, as shown in the following example.

O44.00 Placenta previa specified as without hemorrhage, unspecified trimester
O44.01 Placenta previa specified as without hemorrhage, first trimester
O44.02 Placenta previa specified as without hemorrhage, second trimester
O44.03 Placenta previa specified as without hemorrhage, third trimester

It is not possible to find clear correlations between codes in the two code sets. In an effort to curb the explosion of translation alternatives by allowing *all* episodes of care in ICD-9-CM to translate to *all* trimesters in ICD-10-CM, the initial release of the diagnosis GEMs to the present used a rule-based translation of obstetrics codes, as shown in the following table.

Diagnosis GEMs 2009 Version— Obstetrics Chapter Translation Rules

ICD-10-CM GEM (source) translates to	ICD-9-CM Target
Unspecified trimester	Unspecified episode of care
First trimester	Antepartum
Second trimester	Antepartum
Third Trimester	Antepartum
Childbirth	Delivered
Complication of Puerperium	Postpartum complication

Diagnosis GEMs 2009 Version— Obstetrics Chapter Translation Rules

ICD-9-CM GEM (source) translates to	ICD-10-CM Target
Unspecified episode of care	Unspecified trimester
Antepartum	First trimester Second trimester Third Trimester
Delivered	Childbirth
Delivered with Postpartum complication	Complication of Puerperium
Postpartum complication	Complication of Puerperium

The obstetrics translation rules are an attempt to bring some order to the translation alternatives between the code sets, so that the entries could be consistently translated in the GEMs and checked against a documented standard in clinical review. Although they are a logical way of limiting the explosion of translation alternatives, in practice the resulting GEM translations do not adequately take account of how episode of care is used in the real world, and what its reasonable correlates are in ICD-10-CM. The resulting translation alternatives available in the GEMs are accurate, but too restrictive and therefore not complete. When the current set of obstetrics translation rules are applied to the placenta previa coding example, the ICD-9-CM to ICD-10-CM GEM entries are as follows:

ICD-9-CM placenta previa codes translated with GEM Obstetrics rules

ICD-9-CM GEM (source) translates to	ICD-10-CM (target)
Unspecified episode of care 641.00 Placenta previa without hemorrhage, unspecified as to episode of care	Unspecified trimester O44.00 Placenta previa specified as without hemorrhage, unspecified trimester
Antepartum 641.03 Placenta previa without hemorrhage, antepartum	First trimester O44.01 Placenta previa specified as without hemorrhage, first trimester Second trimester O44.02 Placenta previa specified as without hemorrhage, second trimester Third Trimester O44.03 Placenta previa specified as without hemorrhage, third trimester
Delivered 641.01 Placenta previa without hemorrhage, with delivery	Childbirth O44.00 Placenta previa specified as without hemorrhage, unspecified trimester

The ICD-9-CM code 641.01 translates to the ICD-10-CM “unspecified trimester” code O44.00. Because there is no “with delivery” equivalent in ICD-10-CM, the translation defaults to the unspecified trimester code. In both code sets, the “unspecified episode/trimester” code is considered unacceptably vague and should rarely be coded on a patient record. In this case, the more useful real world translation of 641.01 would be identical to the translation of 641.03, giving all of the specific trimester alternatives in ICD-10-CM. This would allow the user to choose the appropriate specific trimester code that specifies the patient’s condition.

The existing rules for translating the ICD-10-CM obstetrics diagnosis code turned out to be inappropriately restrictive as well, and resulted in incomplete translations in the ICD-10-CM to ICD-9-CM GEM. The following example looks at the eclampsia ICD-10-CM codes. The 2009 version ICD-10-CM to ICD-9-CM GEM entries are shown in the following table.

ICD-10-CM eclampsia codes translated with 2009 version GEM Obstetrics rules

ICD-10-CM GEM (source)	translates to ICD-9-CM (target)
Unspecified trimester O15.00 Eclampsia in pregnancy, unspecified trimester	Unspecified episode of care 642.60 Eclampsia complicating pregnancy, childbirth or the puerperium, unspecified as to episode of care
First trimester N/A	Antepartum
Second trimester O15.02 Eclampsia in pregnancy, second trimester	Antepartum 642.63 Eclampsia, antepartum
Third Trimester O15.03 Eclampsia in pregnancy, third trimester	Antepartum 642.63 Eclampsia, antepartum
Childbirth O15.1 Eclampsia in labor	Delivered 642.61 Eclampsia, with delivery
Complication of Puerperium O15.2 Eclampsia in the puerperium	Postpartum complication 642.64 Eclampsia, postpartum

In this case, three of the ICD-10-CM translations do not contain all plausible real world alternatives. Codes O15.02 and O15.03 specifying the second and third trimester should also translate to ICD-9-CM code 642.61 specifying delivery to include the patient who had eclampsia in pregnancy and delivered during the encounter. Code O15.2 specifying in the puerperium translates only to the postpartum ICD-9-CM code 642.64. The ICD-9-CM code 642.62 *Eclampsia, with delivery, with mention of postpartum complication*, is not used in the ICD-10-CM to ICD-9-CM GEM. In this case the more complete translation should include both 642.61 and 642.62 to capture both of the clinical situations implied by the ICD-10-CM code and made explicit in the ICD-9-CM code.

These examples illustrate areas of the GEM translation rules for obstetrics codes that need to be modified to fully meet the needs of users. The obstetrics translation rules for the GEMs were modified as shown in the following table. Translation alternatives added to make the GEMs complete are underlined.

Diagnosis GEMs 2010 Version— Obstetrics Chapter Translation Rules

ICD-10-CM Source	ICD-9-CM Target
Unspecified trimester	Unspecified episode of care
First trimester	Antepartum <u>Delivered</u>
Second trimester	Antepartum <u>Delivered</u>
Third Trimester	Antepartum <u>Delivered</u>
Childbirth	Delivered <u>Delivered with Postpartum complication</u>
Complication of Puerperium	<u>Delivered with Postpartum complication</u> Postpartum complication

Diagnosis GEMs 2010 Version— Obstetrics Chapter Translation Rules

ICD-9-CM Source	ICD-10-CM Target
Unspecified episode of care	Unspecified trimester
Antepartum	First trimester Second trimester Third Trimester
Delivered	<u>First trimester</u> <u>Second trimester</u> <u>Third Trimester</u> Childbirth
Delivered with Postpartum complication	<u>First trimester</u> (where applicable) <u>Second trimester</u> (where applicable) <u>Third Trimester</u> (where applicable) <u>Childbirth</u> Complication of Puerperium
Postpartum complication	<u>Childbirth</u> Complication of Puerperium

After applying the revised rules to the placenta previa example from the ICD-9-CM GEM and the eclampsia example from the ICD-10-CM GEM, they give all plausible translation alternatives of the clinical situation described in the code. The complete, revised GEMs entries as they will appear in the 2010 GEMs are given in the following two tables. The “unspecified” codes in both sets remained as a one-to-one translation. Since the information in the more specified codes is readily available from the medical record, the guidelines for both code sets state they should be rarely used.

ICD-9-CM placenta previa codes translated with 2010 version GEM Obstetrics rules

ICD-9-CM GEM (source) translates to	ICD-10-CM (target)
Unspecified episode of care 641.00 Placenta previa without hemorrhage, unspecified as to episode of care	Unspecified trimester O44.00 Placenta previa specified as without hemorrhage, unspecified trimester
Antepartum 641.03 Placenta previa without hemorrhage, antepartum	First trimester O44.01 Placenta previa specified as without hemorrhage, first trimester Second trimester O44.02 Placenta previa specified as without hemorrhage, second trimester Third Trimester O44.03 Placenta previa specified as without hemorrhage, third trimester
Delivered 641.01 Placenta previa without hemorrhage, with delivery	Childbirth O44.01 Placenta previa specified as without hemorrhage, first trimester <u>O44.02 Placenta previa specified as without hemorrhage, second trimester</u> <u>O44.03 Placenta previa specified as without hemorrhage, third trimester</u>

ICD-10-CM eclampsia codes translated with revised GEM Obstetrics rules

ICD-10-CM GEM (source)	translates to ICD-9-CM (target)
Unspecified trimester O15.00 Eclampsia in pregnancy, unspecified trimester	Unspecified episode of care 642.60 Eclampsia complicating pregnancy, childbirth or the puerperium, unspecified as to episode of care
First trimester N/A	Antepartum
Second trimester O15.02 Eclampsia in pregnancy, second trimester	Antepartum <u>642.61 Eclampsia, with delivery</u> 642.63 Eclampsia, antepartum
Third Trimester O15.03 Eclampsia in pregnancy, third trimester	Antepartum <u>642.61 Eclampsia, with delivery</u> 642.63 Eclampsia, antepartum
Childbirth O15.1 Eclampsia in labor	Delivered 642.61 Eclampsia, with delivery
Complication of Puerperium O15.2 Eclampsia in the puerperium	Postpartum complication <u>642.61 Eclampsia, with delivery, with mention of postpartum complication</u> 642.64 Eclampsia, postpartum

The revised GEMs translation rules for translating obstetrics chapter codes had a pronounced effect on MS-DRGs in MDC 14 Pregnancy, Childbirth and the Puerperium.

Clearly, the expanded translation alternatives were necessary to fully replicate the lists in MS-DRGs 774-775 *Delivery* and 781-782 *Other Antepartum Diagnoses*. The revised and expanded ICD-10-CM GEMs inevitably created hundreds of list assignment conflicts between these two MS-DRG groups, since ICD-10-CM does not specify antepartum and delivery encounter information in the diagnosis, and it has been shown that the ICD-10-CM codes are plausible alternatives on both lists. As a result, the MS-DRG logic had to be modified to look for a vaginal delivery procedure code in order to convert MS-DRGs 774-775 to ICD-10-CM. For details, see the section entitled “Obstetrics Codes and Encounter Information.”

Individual GEM Entries Enhanced

As mentioned earlier in the section entitled “Further Automation and Efficiencies,” reverse index lookup functionality was developed for both the ICD-9-CM and ICD-10-CM indexes. Reverse index lookup means an ICD-10-CM diagnosis code or an ICD-9-CM diagnosis or procedure code could be input and the program would display all the index entries that refer to the input code. This is very valuable information, because many codes in the ICD-9-CM and ICD-10-CM classifications are referred to from specific, unique index entries. These entries are part of the complete meaning of the code, but the clinical concept in the entry is not indicated anywhere else—not in the code description or associated tabular instruction, only in the index.

In the course of reviewing the converted code lists in the ICD-10-CM version of MS-DRGs, reverse index entries were found in both ICD-9-CM and ICD-10-CM that contained more translation alternatives than were available in the current version of the appropriate GEM. These instances were noted and the appropriate translation alternatives added to the GEMs for the 2010 version. The following examples represent individual enhancements to the 2010 version GEMs made possible by the index reverse lookup functionality.

Examples of GEM entries enhanced for 2010

ICD-10-CM code	2009 ICD-10-CM GEM translation to ICD-9-CM	2010 ICD-10-CM GEM translation to ICD-9-CM	Reverse Index entry
G37.3 Acute transverse myelitis in demyelinating disease of central nervous system	341.20 Acute (transverse) myelitis NOS 341.21 Acute (transverse) myelitis in conditions classified elsewhere	341.20 Acute (transverse) myelitis NOS 341.21 Acute (transverse) myelitis in conditions classified elsewhere Translation Added <u>341.22 Idiopathic transverse myelitis</u>	ICD-10-CM Index entry referring to G37.3 --Myelitis (acute) (ascending) (childhood) (chronic) (descending) (diffuse) (disseminated) (idiopathic) (pressure) (progressive) (spinal cord) (subacute) > transverse (in demyelinating diseases of central nervous system)
I10-I15 Hypertensive diseases (11 codes) I11.0 Hypertensive heart disease with	402.91 Unspecified hypertensive heart disease with congestive heart failure	402.91 Unspecified hypertensive heart disease with congestive heart failure	ICD-10-CM Index entry referring to I11.0 --Hypertension, hypertensive (accelerated) (benign) (essential)

ICD-10-CM code	2009 ICD-10-CM GEM translation to ICD-9-CM	2010 ICD-10-CM GEM translation to ICD-9-CM	Reverse Index entry
heart failure (and 10 others)		Translations Added <u>402.01 Malignant hypertensive heart disease with congestive heart failure</u> <u>402.11 Benign hypertensive heart disease with congestive heart failure</u>	(idiopathic) (malignant) (systemic) > heart (disease) (conditions in I51.4-I51.9 due to hypertension) > with > heart failure (congestive)
Q55.4 Other congenital malformations of vas deferens, epididymis, seminal vesicles and prostate	752.89 Other specified anomalies of genital organs	752.89 Other specified anomalies of genital organs <u>758.6 Gonadal dysgenesis</u>	ICD-9-CM Index entry referring to 758.6 --Dysgenesis > seminiferous tubules
R78.81 Bacteremia	038.9 Unspecified septicemia 790.7 Bacteremia	038.9 Unspecified septicemia <u>771.83 Bacteremia of newborn</u> 790.7 Bacteremia	ICD-10-CM Index entries referring to R78.81 --Bacteremia -- Findings, abnormal, without diagnosis > culture > blood --Positive > culture (nonspecific) > blood --Septicemia ICD-10-CM main term <i>Bacteremia</i> in index does not provide a newborn sub-term excluding the use of R78.81 for newborns. See ICD-10-CM guidelines 16.a.3. Therefore, 771.83 was added as a translation of R78.81

Individual GEM Entries Corrected

As with any undertaking of this magnitude, while certain kinds of errors such as invalid codes and missing codes can be found by computerized test programs, translation errors themselves can only be found by clinical review. The clinical and coding staff who reviewed the converted MS-DRG lists reported all translation errors found in the 2009 version of the GEMs. These have been corrected for the 2010 version. Following are examples of GEM entries with their 2009 entry and their corrected 2010 entry.

Examples of ICD-10-CM GEM entries corrected for 2010

ICD-10-CM code	2009 ICD-10-CM GEM translation to ICD-9-CM	2010 ICD-10-CM GEM translation to ICD-9-CM	Reason
H33.121 Parasitic cyst of retina, right eye	361.19 Other retinoschisis and retinal cysts	360.13 Parasitic endophthalmitis NOS 361.19 Other retinoschisis and retinal cysts	Typographical error. <i>H33.122 Parasitic cyst of retina, left eye, H33.123 Parasitic cyst of retina, bilateral, and H33.129 Parasitic cyst of retina, unspecified eye</i> are correct in the 2009 GEM
I51.2 Rupture of papillary muscle, not elsewhere classified	429.6 Rupture of papillary muscle 429.81 Other disorders of papillary muscle	429.6 Rupture of papillary muscle 429.81 Other disorders of papillary muscle	ICD-10-CM index and tabular do not include any of the conditions specified in ICD-9-CM code 429.81 <i>Other disorders of papillary muscle</i> . This entry was removed from the ICD-10-CM to ICD-9-CM GEM
L12.30 Acquired epidermolysis bullosa, unspecified L12.31 Epidermolysis bullosa due to drug L12.35 Other acquired epidermolysis bullosa	757.39 Other specified congenital anomalies of skin <i>Includes:</i> <i>Accessory skin tags, congenital</i> <i>Congenital scar</i> <i>Epidermolysis bullosa</i> <i>Keratoderma (congenital)</i>	<u>695.15 Toxic epidermal necrolysis</u> 757.39 Other specified congenital anomalies of skin	Although the ICD-9-CM code 757.39 includes the clinical concept <i>epidermolysis bullosa</i> , this code is reserved for congenital conditions only, not acquired conditions. The ICD-10-CM to ICD-9-CM GEM translation was changed to 695.15
N14.1 Nephropathy induced by other drugs, medicaments and biological substances N14.2 Nephropathy induced by unspecified drug, medicament or biological substance N14.3 Nephropathy induced by heavy metals N14.4 Toxic nephropathy, not elsewhere classified	584.5 Acute renal failure with lesion of tubular necrosis	583.89 Other nephritis and nephropathy, not specified as acute or chronic, with specified pathological lesion in kidney	Upon review 583.89 was felt to be a more accurate translation of the ICD-10-CM codes

Changes to the GEMs and MS-DRG Conversion

Although many opportunities for changes and enhancements to the GEMs were discovered during the MS-DRG conversion project, it must be emphasized that these changes were *not* tailored specifically to MS-DRG conversion. These changes make the GEMs more accurate and complete for *all* applications and all users.

The expansion of the obstetrics GEM translation rules is a case in point. Although obstetrics codes are not an area of great importance to MS-DRGs, they are very important to many other organizations and applications that use coded obstetrics healthcare data. Nevertheless, CMS invested significant time and effort necessary to analyze the GEMs rules for translating the obstetrics chapters, and revise the rules so they better serve the needs of the public.

From their inception, the GEMs were designed and developed as a general translation reference. They are not tailored for a specific application. They can be used to convert any application or to create a map for any specific purpose. The effort to make the GEMs as complete and accurate as possible is ongoing. CMS welcomes comments on the GEMs, and any suggestions for changes or enhancements to GEM entries.

Converting the Cardiovascular System MS-DRGs

Converting the MS-DRGs that concern the cardiovascular system was, for the most part, straightforward. Several examples of converted MS-DRGs from the cardiovascular system are given. Issues discovered and resolved are discussed.

Heart Failure MS-DRGs Converted

The 27 principal diagnosis codes that comprise the ICD-9-CM based list for MS-DRGs 291-293 *Heart Failure and Shock* were converted without any issues to an ICD-10-CM based list containing 20 heart failure and shock codes. There are fewer ICD-10-CM codes on the converted list because the ICD-10-CM does not use the outmoded terms “benign” and “malignant” to further classify the hypertensive component of hypertensive heart failure. The ICD-9-CM based list and its converted ICD-10-CM based list are shown in the following table.

ICD-9-CM and ICD-10-CM based versions of MS-DRGs 291-293

ICD-9-CM based list for MS-DRGs 291-293 Heart Failure and Shock (27 codes)	ICD-10-CM based list for MS-DRGs 291-293 Heart Failure and Shock (20 codes)
398.91 Rheumatic heart failure (congestive)	I09.81 Rheumatic heart failure
402.01 Malignant hypertensive heart disease with congestive heart failure	I11.0 Hypertensive heart disease with heart failure
402.11 Benign hypertensive heart disease with congestive heart failure	I13.0 Hypertensive heart and chronic kidney disease with heart failure and stage I through stage IV chronic kidney disease, or unspecified chronic kidney disease
402.91 Unspecified hypertensive heart disease with congestive heart failure	I13.2 Hypertensive heart and chronic kidney disease with heart failure and with stage V chronic kidney disease, or end stage renal disease
404.01 Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	I50.1 Left ventricular failure
404.03 Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage V or end stage renal disease	I50.20 Unspecified systolic (congestive) heart failure
404.11 Hypertensive heart and chronic kidney disease, benign, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	I50.21 Acute systolic (congestive) heart failure
404.13 Hypertensive heart and chronic kidney disease, benign, with heart failure and chronic kidney disease stage V or end stage renal disease	I50.22 Chronic systolic (congestive) heart failure
	I50.23 Acute on chronic systolic (congestive) heart failure
	I50.30 Unspecified diastolic (congestive) heart failure
	I50.31 Acute diastolic (congestive) heart failure
	I50.32 Chronic diastolic (congestive) heart failure
	I50.33 Acute on chronic diastolic (congestive) heart failure
	I50.40 Unspecified combined systolic (congestive)

ICD-9-CM based list for MS-DRGs 291-293 Heart Failure and Shock (27 codes)	ICD-10-CM based list for MS-DRGs 291-293 Heart Failure and Shock (20 codes)
404.91 Hypertensive heart and chronic kidney disease, unspecified, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified 404.93 Hypertensive heart and chronic kidney disease, unspecified, with heart failure and chronic kidney disease stage V or end stage renal disease 428.0 Congestive heart failure 428.1 Left heart failure 428.20 Unspecified systolic heart failure 428.21 Acute systolic heart failure 428.22 Chronic systolic heart failure 428.23 Acute on chronic systolic heart failure 428.30 Unspecified diastolic heart failure 428.31 Acute diastolic heart failure 428.32 Chronic diastolic heart failure 428.33 Acute on chronic diastolic heart failure 428.40 Unspecified combined systolic and diastolic heart failure 428.41 Acute combined systolic and diastolic heart failure 428.42 Chronic combined systolic and diastolic heart failure 428.43 Acute on chronic combined systolic and diastolic heart failure 428.9 Heart failure, unspecified 785.50 Shock, unspecified 785.51 Cardiogenic shock	and diastolic (congestive) heart failure I50.41 Acute combined systolic (congestive) and diastolic (congestive) heart failure I50.42 Chronic combined systolic (congestive) and diastolic (congestive) heart failure I50.43 Acute on chronic combined systolic (congestive) and diastolic (congestive) heart failure I50.9 Heart failure, unspecified R57.0 Cardiogenic shock R57.9 Shock, unspecified

Angina Pectoris MS-DRGs Converted

The six principal diagnosis codes that comprise the ICD-9-CM based list for MS-DRG 311 *Angina Pectoris* were converted without any issues to an ICD-10-CM based list containing seven angina pectoris codes. 21 additional ICD-10-CM codes specify angina as part of a combination code. These additional codes are combination codes containing the underlying diagnosis of coronary artery atherosclerosis and the current exacerbation of angina. The combination codes were included on the converted list for MS-DRGs 302-303 *Atherosclerosis*. The ICD-9-CM based list for MS-DRG 311 and its converted ICD-10-CM based list are shown in the following table.

ICD-9-CM and ICD-10-CM based versions of MS-DRG 311

ICD-9-CM based list for MS-DRG 311 Angina Pectoris (6 codes)	ICD-10-CM based list for MS-DRG 311 Angina Pectoris (7 codes)
411.1 Intermediate coronary syndrome 411.81 Other acute and subacute forms of ischemic heart disease, acute ischemic heart disease without myocardial infarction 411.89 Other acute and subacute forms of ischemic heart disease, other 413.0 Angina decubitus 413.1 Prinzmetal angina 413.9 Other and unspecified angina pectoris unspecified	I20.0 Unstable angina I20.1 Angina pectoris with documented spasm I20.8 Other forms of angina pectoris I20.9 Angina pectoris, unspecified I24.0 Acute coronary thrombosis not resulting in myocardial infarction I24.8 Other forms of acute ischemic heart disease I24.9 Acute ischemic heart disease, unspecified

Coronary Artery Bypass Procedures Converted

The nine procedure codes that comprise the ICD-9-CM based list for MS-DRGs 231-236 *Coronary Bypass* were converted without any issues to an ICD-10-PCS based list containing 232 procedure codes. The ICD-10-PCS codes are far more detailed. They specify the number of coronary artery sites bypassed, the specific artery being bypassed to (the “destination” of the bypass), the specific bypass graft material used in the procedure, and the approach used to reach the procedure site. The ICD-9-CM based list and its converted ICD-10-PCS based list are shown in the following table.

ICD-9-CM and ICD-10-CM based versions of MS-DRGs 231-236

*(ICD-10-PCS in condensed format. See Appendix E for the complete list of ICD-10-PCS code titles)

ICD-9-CM based list for MS-DRGs 231-236 Coronary Bypass (9 codes)	ICD-10-CM based list for MS-DRGs 231-236 Coronary Bypass (232 codes)
36.10 Aortocoronary Bypass For Heart Revascularization, Not Otherwise Specified 36.11 (Aorto)coronary bypass of one coronary artery 36.12 (Aorto)coronary bypass of two coronary arteries 36.13 (Aorto)coronary bypass of three coronary arteries 36.14 (Aorto)coronary bypass of four or more coronary arteries 36.15 Single Internal Mammary-Coronary Artery Bypass 36.16 Double Internal Mammary-Coronary Artery Bypass 36.17 Abdominal - Coronary Artery Bypass 36.19 Other Bypass Anastomosis For Heart Revascularization	021[0-3][04][9AJKZ][389CFW] Bypass of Coronary Artery (232 codes)

Percutaneous Cardiovascular Procedures Converted

The eight procedure codes that comprise the ICD-9-CM based list for MS-DRGs 250-251 *Percutaneous Cardiovascular Procedures without Stent* were converted without any issues to an ICD-10-PCS based list containing 136 procedure codes. The ICD-10-PCS codes are far more detailed in specifying the technique used to achieve the objective of the procedure (referred to as the root operation), the anatomic site of the procedure, and the approach used to reach the site of the procedure. The ICD-9-CM based list and its converted ICD-10-PCS based list are shown in the following table.

ICD-9-CM and ICD-10-CM based versions of MS-DRGs 250-251

*(ICD-10-PCS in condensed format. See Appendix E for the complete list of ICD-10-PCS code titles)

ICD-9-CM based list for MS-DRG 250-251 Percutaneous Cardiovascular Procedures without Stent (8 codes)	ICD-10-CM based list for MS-DRG 250-251 Percutaneous Cardiovascular Procedures without Stent (136 codes)
00.66 Percutaneous transluminal coronary angioplasty [PTCA] or coronary atherectomy 35.52 Repair Of Atrial Septal Defect With Prosthesis, Closed Technique 35.96 Percutaneous Valvuloplasty 36.09 Other Specified Removal Of Coronary Artery Obstruction 37.34 Excision Or Destruction Of Other Lesion Or Tissue Of Heart, Other Approach	0255[34]ZZ Destruction of Atrial Septum (2 codes) 0256[34]ZZ Destruction of Atrium, Right (2 codes) 0257[34]ZZ Destruction of Atrium, Left (2 codes) 0258[34]ZZ Destruction of Conduction Mechanism (2 codes) 0259[34]ZZ Destruction of Chordae Tendineae (2 codes) 025F[34]ZZ Destruction of Aortic Valve (2 codes) 025G[34]ZZ Destruction of Mitral Valve (2 codes)

ICD-9-CM based list for MS-DRG 250-251 Percutaneous Cardiovascular Procedures without Stent (8 codes)	ICD-10-CM based list for MS-DRG 250-251 Percutaneous Cardiovascular Procedures without Stent (136 codes)
37.26 Catheter based invasive electrophysiologic testing 37.27 Cardiac Mapping 37.90 Insertion of left atrial appendage device	025H[34]ZZ Destruction of Pulmonary Valve (2 codes) 025J[34]ZZ Destruction of Tricuspid Valve (2 codes) 025K[34]ZZ Destruction of Ventricle, Right (2 codes) 025L[34]ZZ Destruction of Ventricle, Left (2 codes) 025M[34]ZZ Destruction of Ventricular Septum (2 codes) 027[0-3][34][4DZ][6Z] Dilation of Coronary Artery (48 codes) 027F[34][4DZ]Z Dilation of Aortic Valve (6 codes) 027G[34][4DZ]Z Dilation of Mitral Valve (6 codes) 027H[34][4DZ]Z Dilation of Pulmonary Valve (6 codes) 027J[34][4DZ]Z Dilation of Tricuspid Valve (6 codes) 02B5[34]ZZ Excision of Atrial Septum (2 codes) 02B6[34]ZZ Excision of Atrium, Right (2 codes) 02B7[34]ZZ Excision of Atrium, Left (2 codes) 02B8[34]ZZ Excision of Conduction Mechanism (2 codes) 02B9[34]ZZ Excision of Chordae Tendineae (2 codes) 02BF[34]ZZ Excision of Aortic Valve (2 codes) 02BG[34]ZZ Excision of Mitral Valve (2 codes) 02BH[34]ZZ Excision of Pulmonary Valve (2 codes) 02BJ[34]ZZ Excision of Tricuspid Valve (2 codes) 02BM[34]ZZ Excision of Ventricular Septum (2 codes) 02C[0-3]*ZZ Extirpation, Coronary Artery (12 codes) 02T8[34]ZZ Resection of Conduction Mechanism (2 codes) 02U54JZ Supplement Atrial Septum with Synthetic Substitute, Percutaneous Endoscopic Approach 02K80ZZ Map Conduction Mechanism, Open Approach 02K83ZZ Map Conduction Mechanism, Percutaneous Approach 02K84ZZ Map Conduction Mechanism, Percutaneous Endoscopic Approach 02U74JZ Supplement Left Atrium with Synthetic Substitute, Percutaneous Endoscopic Approach 4A023FZ Measurement of Cardiac Rhythm, Percutaneous Approach

Pacemaker Replacement Procedures Converted

The six procedure codes that comprise the ICD-9-CM based list for MS-DRGs 258-259 *Cardiac Pacemaker Device Replacement* were converted without any issues to an ICD-10-PCS based list containing 14 procedure codes. The ICD-10-PCS codes specify both the operative approach and the anatomic site of the procedure. The ICD-9-CM based list and its converted ICD-10-PCS based list are shown in the following table.

ICD-9-CM and ICD-10-PCS based versions of MS-DRGs 258-259

ICD-9-CM based list for MS-DRG 258-259 Cardiac Pacemaker Device Replacement (6 codes)	ICD-10-PCS based list for MS-DRG 258-259 Cardiac Pacemaker Device Replacement (14 codes)
<p>00.53 Implantation Or Replacement Of Cardiac Resynchronization Pacemaker Pulse Generator Only [CRT-P]</p> <p>00.57 Implantation or replacement of subcutaneous device for intracardiac hemodynamic monitoring</p> <p>37.80 Insertion Of Permanent Pacemaker, Initial Or Replacement, Type Of Device Not Specified</p> <p>37.85 Replacement Of Any Type Pacemaker Device With Single-Chamber Device, Not Specified As Rate Responsive</p> <p>37.86 Replacement Of Any Type Of Pacemaker Device With Single-Chamber Device, Rate Responsive</p> <p>37.87 Replacement Of Any Type Pacemaker Device With Dual-Chamber Device</p>	<p>0JH60P3 Insertion of Cardiac Resynchronization Pacemaker Pulse Generator into Chest Subcutaneous Tissue and Fascia, Open Approach</p> <p>0JH60PY Insertion of Other Cardiac Pacemaker / Defibrillator into Chest Subcutaneous Tissue and Fascia, Open Approach</p> <p>0JH60PZ Insertion of Pacemaker / Defibrillator into Chest Subcutaneous Tissue and Fascia, Open Approach</p> <p>0JH63P3 Insertion of Cardiac Resynchronization Pacemaker Pulse Generator into Chest Subcutaneous Tissue and Fascia, Percutaneous Approach</p> <p>0JH63PY Insertion of Other Cardiac Pacemaker / Defibrillator into Chest Subcutaneous Tissue and Fascia, Percutaneous Approach</p> <p>0JH63PZ Insertion of Pacemaker / Defibrillator into Chest Subcutaneous Tissue and Fascia, Percutaneous Approach</p> <p>0JH80P3 Insertion of Cardiac Resynchronization Pacemaker Pulse Generator into Abdomen Subcutaneous Tissue and Fascia, Open Approach</p> <p>0JH80PY Insertion of Other Cardiac Pacemaker / Defibrillator into Abdomen Subcutaneous Tissue and Fascia, Open Approach</p> <p>0JH80PZ Insertion of Pacemaker / Defibrillator into Abdomen Subcutaneous Tissue and Fascia, Open Approach</p> <p>0JH83P3 Insertion of Cardiac Resynchronization Pacemaker Pulse Generator into Abdomen Subcutaneous Tissue and Fascia, Percutaneous Approach</p> <p>0JH83PY Insertion of Other Cardiac Pacemaker / Defibrillator into Abdomen Subcutaneous Tissue and Fascia, Percutaneous Approach</p> <p>0JH83PZ Insertion of Pacemaker / Defibrillator into Abdomen Subcutaneous Tissue and Fascia, Percutaneous Approach</p> <p>0WH80YZ Insertion of Other Device into Chest Wall, Open Approach</p> <p>0WHF0YZ Insertion of Other Device into Abdominal Wall, Open Approach</p>

Issues Encountered in the Cardiovascular System MS-DRGs

The cardiovascular system MS-DRGs contain some of the more complex assignment logic in MS-DRGs. Significant translation differences between the two code sets presented its own set of challenges in producing an equivalent ICD-10-CM/PCS based version. The challenges discussed here are:

- ICD-10-CM atherosclerosis codes that specify angina
- Translation differences in the myocardial infarction codes
- Necessary ICD-10-PCS clusters for cardiovascular device replacement

ICD-10-CM Atherosclerosis combination codes that specify angina

Eight ICD-10-CM coronary atherosclerosis codes are combination codes. That is, they specify both the underlying diagnosis of atherosclerosis and the current exacerbation of unstable angina. In ICD-9-CM, two codes are needed to capture both diagnoses, and when the atherosclerosis code is the principal diagnosis and the unstable angina code is a secondary diagnosis, it is assigned to the *MS-DRG 302 Atherosclerosis with CC*. In this special case, the application logic for the ICD-10-CM/PCS based version of MS-DRGs will need to be modified in order to replicate this result. If any one of the ICD-10-CM codes in the following table is coded as the principal diagnosis, the MS-DRG logic will be modified to assign it to the appropriate “with MCC/CC” MS-DRG, even if there are no secondary diagnoses recorded.

MS-DRG assignment of ICD-10-CM atherosclerosis with angina combination codes

ICD-10-CM Principal Diagnosis	ICD-9-CM Principal Diagnosis	ICD-9-CM Secondary Diagnosis	MS-DRG Assignment
I25.7*0 (8 codes) Atherosclerosis of coronary artery with unstable angina	414.0* (5 codes) Coronary atherosclerosis...	411.1 Intermediate coronary syndrome	302 Atherosclerosis with CC

Translation Differences in the Myocardial Infarction Codes

As has been explained in many presentations and documents about the GEMs, if the differences between the code sets were not significant, there would be no point in switching. In this example from MS-DRGs 314-316 *Principal Diagnoses in Other Circulatory System Diagnoses*, an axis of classification used in ICD-9-CM has been discontinued in ICD-10-CM. In ICD-9-CM, the myocardial infarction codes specify information about the patient encounter. There are unique ICD-9-CM codes specifying whether the encounter for treatment of the myocardial infarction (MI) is the initial episode of care, a subsequent episode of care within eight weeks of the onset, or an unspecified episode of care. In ICD-10-CM, such information about the encounter has been discontinued from the classification. The result is that ICD-9-CM codes specifying subsequent or unspecified encounter for care of a myocardial infarction are not explicitly replicated in the ICD-10-CM based version of MS-DRGs.

The myocardial infarction codes specifying initial encounter are explicitly replicated in the ICD-10-CM based version of MS-DRGs 280-285 *Myocardial Infarction*. As shown in the following table, myocardial infarction codes specifying initial encounter are overwhelmingly dominant in terms of frequency. Therefore it is expected that discontinuing the axis of classification specifying encounter will have minimal impact on this MS-DRG. The myocardial infarction codes with their respective MedPAR frequencies are listed in the following table.

ICD-9-CM Myocardial Infarction codes in MS-DRGs 280-285 Explicitly replicated in ICD-10-CM based MS-DRGs	FY 2007 MedPAR frequency
410.01 Acute myocardial infarction of anterolateral wall, initial episode of care	13,996
410.11 Acute myocardial infarction of other anterior wall, initial episode of care	53,071
410.21 Acute myocardial infarction of inferolateral wall, initial episode of care	11,193
410.31 Acute myocardial infarction of inferoposterior wall, initial episode of care	7,185
410.41 Acute myocardial infarction of other inferior wall, initial episode of care	62,992
410.51 Acute myocardial infarction of other lateral wall, initial episode of care	7,693
410.61 True posterior wall infarction, initial episode of care	2,291
410.71 Subendocardial infarction, initial episode of care	504,776
410.81 Acute myocardial infarction of other specified sites, initial episode of care	13,710
410.91 Acute myocardial infarction of unspecified site, initial episode of care	62,244

ICD-9-CM Myocardial Infarction codes in MS-DRGs 314-316 Not explicitly replicated in ICD-10-CM based MS-DRGs	FY 2007 MedPAR frequency
410.00 Acute myocardial infarction of anterolateral wall, episode of care unspecified	104
410.02 Acute myocardial infarction of anterolateral wall, subsequent episode of care	418
410.10 Acute myocardial infarction of other anterior wall, episode of care unspecified	386
410.12 Acute myocardial infarction of other anterior wall, subsequent episode of care	2,613
410.20 Acute myocardial infarction of inferolateral wall, episode of care unspecified	37
410.22 Acute myocardial infarction of inferolateral wall, subsequent episode of care	346
410.30 Acute myocardial infarction of inferoposterior wall, episode of care unspecified	21
410.32 Acute myocardial infarction of inferoposterior wall, subsequent episode of care	203
410.40 Acute myocardial infarction of other inferior wall, episode of care unspecified	214
410.42 Acute myocardial infarction of other inferior wall, subsequent episode of care	2,770
410.50 Acute myocardial infarction of other lateral wall, episode of care unspecified	33
410.52 Acute myocardial infarction of other lateral wall, subsequent episode of care	285
410.60 True posterior wall infarction, episode of care unspecified	12
410.62 True posterior wall infarction, subsequent episode of care	70
410.70 Subendocardial infarction, episode of care unspecified	1,118
410.72 Subendocardial infarction, subsequent episode of care	16,409
410.80 Acute myocardial infarction of other specified sites, episode of care unspecified	98
410.82 Acute myocardial infarction of other specified sites, subsequent episode of care	586
410.90 Acute myocardial infarction of unspecified site, episode of care unspecified	1,419
410.92 Acute myocardial infarction of unspecified site, subsequent episode of care	6,457

Because the ICD-10-CM codes classify all encounters for treatment of an acute MI similarly, “specified as acute or with a stated duration of 4 weeks (28 days) or less from onset,” without differentiating between an initial and subsequent visit, all visits are assigned in MS-DRGs as if they were “initial encounter” in ICD-9-CM terms. They are assigned to MS-DRGs 280-285 *Acute Myocardial Infarction*, or MS-DRGs 222-227 *Acute MI/Heart Failure/Shock*, depending on the other codes submitted on the record.

ICD-10-PCS Clusters needed to replicate defibrillator procedure logic

Several areas in the cardiovascular system MS-DRGs require ICD-10-PCS clusters in order to fully replicate MS-DRG assignment logic. The cardiac defibrillator implantation codes are an example, as shown in the following table.

ICD-10-PCS clusters to replicate cardiac defibrillator MS-DRG assignment

ICD-10-PCS Code(s)	ICD-9-CM Code	Mutually Exclusive DRG in MDC 05
0JH60P5 Insertion of Cardiac Resynchronization Defibrillator Pulse Generator into Chest Subcutaneous Tissue and Fascia, Open Approach And 02HL3MZ Insertion of Electrode into Left Ventricle, Percutaneous Approach	00.51 Implantation Of Cardiac Resynchronization Defibrillator, Total System [CRT-D]	Cardiac Defibrillator Implant (222-227)
0JH60P5 Insertion of Cardiac Resynchronization Defibrillator Pulse Generator into Chest Subcutaneous Tissue and Fascia, Open Approach	00.54 Implantation Or Replacement Of Cardiac Resynchronization Defibrillator Pulse Generator Only [CRT-D]	AICD Lead and Generator Procedures (245) (MS-DRGs version 26.0)
02HL3MZ Insertion of Electrode into Left Ventricle, Percutaneous Approach	37.76 Replacement Of Transvenous Atrial And/Or Ventricular Lead(s) [Electrode]	Revision of Lead/pacemaker (260-262)

Three MS-DRG categories in the cardiovascular MS-DRGs must “share” the two ICD-10-PCS procedure codes in this example. In the MS-DRGs *Cardiac Defibrillator Implant*, both ICD-10-PCS procedure codes are necessary to fully replicate the ICD-9-CM code specifying implantation of a total system. In MS-DRG 245 *AICD Lead and Generator Procedures*, only the ICD-10-PCS procedure code for insertion of the CRT defibrillator is necessary. In the MS-DRGs *Revision of Lead/Pacemaker*, only the ICD-10-PCS procedure code for insertion of the electrode into the left ventricle is necessary. If all three ICD-9-CM codes had been in the same MS-DRG list, no change to the MS-DRG assignment logic would be necessary. Because they are all on different MS-DRG assignment lists, the ICD-10-PCS based version of MS-DRGs will need to be modified to look for the pairs of ICD-10-PCS procedure codes such as the pair in the first row of the example in order to fully replicate assignment logic for MS-DRGs 222-227.

Converting the Musculoskeletal System MS-DRGs

For the most part, converting the MS-DRGs that concern the musculoskeletal system was straightforward. Several examples of converted MS-DRGs are given. Issues discovered and resolved are discussed in this section.

Femur Fracture MS-DRGs Converted

The 14 principal diagnosis codes that comprise the ICD-9-CM based list for MS-DRG 533-534 *Fractures of Femur* were converted without any issues to an ICD-10-CM based list containing 273 ICD-10-CM femur fracture codes. The ICD-10-CM codes specify laterality, anatomic site and fracture type in much greater detail. The ICD-9-CM based list for MS-DRGs 533-534 and its converted ICD-10-CM based list are shown in the following table.

ICD-9-CM and ICD-10-CM based versions of MS-DRG 533-534

*(ICD-10-CM in condensed format. See Appendix E for the complete list of ICD-10-CM code titles)

ICD-9-CM based list for MS-DRG 533-534 Fractures of Femur (14 codes)
821.00 Fracture of unspecified part of femur, closed 821.01 Fracture of shaft of femur, closed 821.10 Fracture of unspecified part of femur, open 821.11 Fracture of shaft of femur, open 821.20 Fracture of lower end of femur, unspecified part, closed 821.21 Fracture of femoral condyle, closed 821.22 Fracture of lower epiphysis of femur, closed 821.23 Supracondylar fracture of femur, closed 821.29 Other fracture of lower end of femur, closed 821.30 Fracture of lower end of femur, unspecified part, open 821.31 Fracture of femoral condyle, open 821.32 Fracture of lower epiphysis of femur, open 821.33 Supracondylar fracture of femur, open 821.39 Other fracture of lower end of femur, open

ICD-9-CM and ICD-10-CM based versions of MS-DRG 533-534

*(ICD-10-CM in condensed format. See Appendix E for the complete list of ICD-10-CM code titles)

ICD-10-CM based list for MS-DRG 533-534 Fractures of Femur (273 codes)
S7230*[ABC] Unspecified fracture of shaft of femur, initial encounter for closed fracture or initial encounter for open fracture type I or II or initial encounter for open fracture type IIIA, IIIB, or IIIC (9 codes) S7232*[ABC] Transverse fracture of shaft of femur, initial encounter for closed fracture or initial encounter for open fracture type I or II or initial encounter for open fracture type IIIA, IIIB, or IIIC (18 codes) S7233*[ABC] Oblique fracture of shaft of femur, initial encounter for closed fracture or initial encounter for open fracture type I or II or initial encounter for open fracture type IIIA, IIIB, or IIIC (18 codes) S7234*[ABC] Spiral fracture of shaft of femur, initial encounter for closed fracture or initial encounter for open fracture type I or II or initial encounter for open fracture type IIIA, IIIB, or IIIC (18 codes) S7235*[ABC] Comminuted fracture of shaft of femur, initial encounter for closed fracture or initial encounter for open fracture type I or II or initial encounter for open fracture type IIIA, IIIB, or IIIC (18 codes) S7236*[ABC] Segmental fracture of shaft of femur, initial encounter for closed fracture or initial encounter for open fracture type I or II or initial encounter for open fracture type IIIA, IIIB, or IIIC (18 codes) S7239*[ABC] Other fracture of shaft of femur, initial encounter for closed fracture or initial encounter for open fracture type I or II or initial encounter for open fracture type IIIA, IIIB, or IIIC (9 codes) S72401[ABC] Unspecified fracture of lower end of right femur, initial encounter for closed fracture or initial encounter for open fracture type I or II or initial encounter for open fracture type IIIA, IIIB, or IIIC (3 codes) S72402[ABC] Unspecified fracture of lower end of left femur, initial encounter for closed fracture or initial encounter for open fracture type I or II or initial encounter for open fracture type IIIA, IIIB, or IIIC (3 codes) S72409[ABC] Unspecified fracture of lower end of unspecified femur, initial encounter for closed fracture or initial encounter for open fracture type I or II or initial encounter for open fracture type IIIA, IIIB, or IIIC (3 codes) S72411[ABC] Displaced unspecified condyle fracture of lower end of right femur, initial encounter for closed fracture or initial encounter for open fracture type I or II or initial encounter for open fracture type IIIA, IIIB, or IIIC (3 codes) S72412[ABC] Displaced unspecified condyle fracture of lower end of left femur, initial encounter for closed fracture or initial encounter for open fracture type I or II or initial encounter for open fracture type IIIA, IIIB, or IIIC (3 codes) S72413[ABC] Displaced unspecified condyle fracture of lower end of unspecified femur, initial encounter for

ICD-10-CM based list for MS-DRG 533-534
Fractures of Femur (273 codes)

[illegible]

ICD-10-CM based list for MS-DRG 533-534
Fractures of Femur (273 codes)

[illegible]

Medical Back MS-DRGs Converted

The 166 principal diagnosis codes that comprise the ICD-9-CM based list for MS-DRGs 551-552 *Medical Back Problems* were converted without any issues to an ICD-10-CM based list containing 1,132 diagnosis codes. The increased number of codes is largely accounted for because ICD-10-CM specifies the region of the spine concerned. There is also increased detail in both the site and fracture type of vertebral fracture codes.

The clinical concept of “open dislocation” as a unique combination code was discontinued in ICD-10-CM. In ICD-10-CM, the dislocation and the associated open wound are coded separately. The result is that ICD-9-CM codes specifying open dislocation are not explicitly replaced on the converted list. The open dislocation ICD-9-CM codes, the closed dislocation ICD-9-CM codes and their associated MedPAR frequencies are shown in the following table.

**ICD-9-CM open dislocation codes in MS-DRGs 551-552 not replicated in ICD-10-CM
Compared with ICD-9-CM closed dislocation codes and their FY 2007 Med PAR frequency**

ICD-9-CM open dislocation codes in MS-DRGs 551-552 Medical Back Problems (15 codes)	FY 2007 MedPAR frequency	ICD-9-CM closed dislocation codes in MS-DRGs 551-552 Medical Back Problems (15 codes)	FY 2007 MedPAR frequency
839.10 Open dislocation, cervical vertebra, unspecified	0	839.00 Closed dislocation, cervical vertebra, unspecified	68
839.11 Open dislocation, first cervical vertebra	0	839.01 Closed dislocation, first cervical vertebra	131
839.12 Open dislocation, second cervical vertebra	0	839.02 Closed dislocation, second cervical vertebra	133
839.13 Open dislocation, third cervical vertebra	0	839.03 Closed dislocation, third cervical vertebra	234
839.14 Open dislocation, fourth cervical vertebra	0	839.04 Closed dislocation, fourth cervical vertebra	302
839.15 Open dislocation, fifth cervical vertebra	0	839.05 Closed dislocation, fifth cervical vertebra	319
839.16 Open dislocation, sixth cervical vertebra	1	839.06 Closed dislocation, sixth cervical vertebra	217
839.17 Open dislocation, seventh cervical vertebra	1	839.07 Closed dislocation, seventh cervical vertebra	110
839.18 Open dislocation, multiple cervical vertebrae	0	839.08 Closed dislocation, multiple cervical vertebrae	195
839.30 Open dislocation, lumbar vertebra	0	839.20 Closed dislocation, lumbar vertebra	457
839.31 Open dislocation, thoracic vertebra	0	839.21 Closed dislocation, thoracic vertebra	56
839.50 Open dislocation, vertebra, unspecified site	0	839.40 Closed dislocation, vertebra, unspecified site	11
839.51 Open dislocation, coccyx	0	839.41 Closed dislocation, coccyx	12
839.52 Open dislocation, sacrum	0	839.42 Closed dislocation, sacrum	64
839.59 Open dislocation, other vertebra	0	839.49 Closed dislocation, other vertebra	0

When the open dislocation codes are compared with the closed dislocation ICD-9-CM codes it is clear why the concept of open dislocation was discontinued in ICD-10-CM. A total of two open dislocations of the spine were recorded in the data, compared with 2,309 closed dislocations of the spine.

For the ICD-9-CM based list for MS-DRGs 551-552 and its converted ICD-10-CM based list, see Appendix E

Conversion of Spinal Fusion MS-DRGs

Thirteen procedure codes that comprise the ICD-9-CM based list for MS-DRGs 456-458 *Spinal Fusion Except Cervical* were converted without any issues to an ICD-10-PCS based list containing 240 spinal fusion procedure codes.

ICD-9-CM and ICD-10-PCS based versions of MS-DRGs 456-458*

*(ICD-10-PCS in condensed format. See Appendix E for the complete list of ICD-10-PCS code titles)

ICD-9-CM based list for MS-DRG 456-458 Spinal Fusion Except Cervical (13 codes)	ICD-10-PCS based list for MS-DRG 456-458 Spinal Fusion Except Cervical (240 codes)
81.00 Spinal Fusion, Not Otherwise Specified 81.04 Dorsal And Dorsolumbar Fusion, Anterior Technique 81.05 Dorsal And Dorsolumbar Fusion, Posterior Technique 81.06 Lumbar And Lumbosacral Fusion, Anterior Technique 81.07 Lumbar And Lumbosacral Fusion, Lateral Transverse Process Technique 81.08 Lumbar And Lumbosacral Fusion, Posterior Technique 81.30 Refusion Of Spine, Not Otherwise Specified 81.34 Refusion Of Dorsal And Dorsolumbar Spine, Anterior Technique 81.35 Refusion Of Dorsal And Dorsolumbar Spine, Posterior Technique 81.36 Refusion Of Lumbar And Lumbosacral Spine, Anterior Technique 81.37 Refusion Of Lumbar And Lumbosacral Spine, Lateral Transverse Process Technique 81.38 Refusion Of Lumbar And Lumbosacral Spine, Posterior Technique 81.39 Refusion Of Spine, Not Elsewhere Classified	0RG6*** Fusion of Thoracic Vertebral Joint (30 codes) 0RG7*** Fusion of Thoracic Vertebral Joints, 2 to 7 (30 codes) 0RG8*** Fusion of Thoracic Vertebral Joints, 8 or more (30 codes) 0RGA*** Fusion of Thoracolumbar Vertebral Joint (30 codes) 0SG0*** Fusion of Lumbar Vertebral Joint (30 codes) 0SG1*** Fusion of Lumbar Vertebral Joints, 2 or more (30 codes) 0SG3*** Fusion of Lumbosacral Joint (30 codes) 0SG5**Z Fusion of Sacrococcygeal Joint (15 codes) 0SG6**Z Fusion of Coccygeal Joint (15 codes)

Spinal Neurostimulator Procedure Codes

The procedure code pairs specifying implantation of spinal neurostimulator lead and pulse generator in the ICD-9-CM based list for MS-DRG 490 *Back or Neck Procedures, Except Spinal Fusion, or Disc Devices/Neurostimulators* were converted without any issues to ICD-10-PCS based lists containing 30 procedure codes.

ICD-9-CM and ICD-10-PCS based versions of codes in MS-DRGs 490

Back or Neck Procedures, Except Spinal Fusion, or Disc Devices/Neurostimulators

ICD-9-CM based list for Spinal Neurostimulator Codes in MS-DRGs 490 (2 codes)	ICD-10-PCS based list for Spinal Neurostimulator Codes in MS-DRGs 490 (12 codes)
03.93 Implantation or replacement of spinal neurostimulator lead(s)	00HU0MZ Insertion of Electrode into Spinal Canal, Open Approach 00HU3MZ Insertion of Electrode into Spinal Canal, Percutaneous Approach 00HU4MZ Insertion of Electrode into Spinal Canal, Percutaneous Endoscopic Approach 00HV0MZ Insertion of Electrode into Spinal Cord, Open Approach 00HV3MZ Insertion of Electrode into Spinal Cord,

ICD-9-CM based list for Spinal Neurostimulator Codes in MS-DRGs 490 (2 codes)	ICD-10-PCS based list for Spinal Neurostimulator Codes in MS-DRGs 490 (12 codes)
	Percutaneous Approach 00HV4MZ Insertion of Electrode into Spinal Cord, Percutaneous Endoscopic Approach
86.94 Insertion or replacement of single array neurostimulator pulse generator, not specified as rechargeable 86.95 Insertion or replacement of dual array neurostimulator pulse generator, not specified as rechargeable 86.97 Insertion or replacement of single array rechargeable neurostimulator pulse generator 86.98 Insertion or replacement of dual array rechargeable neurostimulator pulse generator	0JH60M6 Insertion of Single Array Stimulator Generator into Chest Subcutaneous Tissue and Fascia, Open Approach 0JH60M7 Insertion of Dual Array Stimulator Generator into Chest Subcutaneous Tissue and Fascia, Open Approach 0JH60M8 Insertion of Single Array Rechargeable Stimulator Generator into Chest Subcutaneous Tissue and Fascia, Open Approach 0JH60M9 Insertion of Dual Array Rechargeable Stimulator Generator into Chest Subcutaneous Tissue and Fascia, Open Approach 0JH63M6 Insertion of Single Array Stimulator Generator into Chest Subcutaneous Tissue and Fascia, Percutaneous Approach 0JH63M7 Insertion of Dual Array Stimulator Generator into Chest Subcutaneous Tissue and Fascia, Percutaneous Approach 0JH63M8 Insertion of Single Array Rechargeable Stimulator Generator into Chest Subcutaneous Tissue and Fascia, Percutaneous Approach 0JH63M9 Insertion of Dual Array Rechargeable Stimulator Generator into Chest Subcutaneous Tissue and Fascia, Percutaneous Approach 0JH70M6 Insertion of Single Array Stimulator Generator into Back Subcutaneous Tissue and Fascia, Open Approach 0JH70M7 Insertion of Dual Array Stimulator Generator into Back Subcutaneous Tissue and Fascia, Open Approach 0JH70M8 Insertion of Single Array Rechargeable Stimulator Generator into Back Subcutaneous Tissue and Fascia, Open Approach 0JH70M9 Insertion of Dual Array Rechargeable Stimulator Generator into Back Subcutaneous Tissue and Fascia, Open Approach 0JH73M6 Insertion of Single Array Stimulator Generator into Back Subcutaneous Tissue and Fascia, Percutaneous Approach 0JH73M7 Insertion of Dual Array Stimulator Generator into Back Subcutaneous Tissue and Fascia, Percutaneous Approach 0JH73M8 Insertion of Single Array Rechargeable Stimulator Generator into Back Subcutaneous Tissue and Fascia, Percutaneous Approach 0JH73M9 Insertion of Dual Array Rechargeable Stimulator Generator into Back Subcutaneous Tissue and Fascia, Percutaneous Approach 0JH80M6 Insertion of Single Array Stimulator Generator into Abdomen Subcutaneous Tissue and Fascia, Open Approach 0JH80M7 Insertion of Dual Array Stimulator Generator into Abdomen Subcutaneous Tissue and Fascia, Open Approach 0JH80M8 Insertion of Single Array Rechargeable Stimulator Generator into Abdomen Subcutaneous Tissue and Fascia, Open Approach

ICD-9-CM based list for Spinal Neurostimulator Codes in MS-DRGs 490 (2 codes)	ICD-10-PCS based list for Spinal Neurostimulator Codes in MS-DRGs 490 (12 codes)
	0JH80M9 Insertion of Dual Array Rechargeable Stimulator Generator into Abdomen Subcutaneous Tissue and Fascia, Open Approach 0JH83M6 Insertion of Single Array Stimulator Generator into Abdomen Subcutaneous Tissue and Fascia, Percutaneous Approach 0JH83M7 Insertion of Dual Array Stimulator Generator into Abdomen Subcutaneous Tissue and Fascia, Percutaneous Approach 0JH83M8 Insertion of Single Array Rechargeable Stimulator Generator into Abdomen Subcutaneous Tissue and Fascia, Percutaneous Approach 0JH83M9 Insertion of Dual Array Rechargeable Stimulator Generator into Abdomen Subcutaneous Tissue and Fascia, Percutaneous Approach

Issues Encountered in the Musculoskeletal System MS-DRGs

Like the cardiovascular system MS-DRGs, the musculoskeletal system also contain some of the more complex assignment logic in MS-DRGs. Significant translation differences between the two code sets—especially in the procedure codes—presented its own set of challenges in producing an equivalent ICD-10-CM/PCS based version. The challenges discussed here are:

- Replicating wound debridement in ICD-10-CM/PCS based MS-DRGs
- ICD-10-PCS clusters necessary for hip and knee revision

Replicating wound debridement in ICD-10-PCS based MS-DRGs

One of the many significant translation differences between the ICD-9-CM and ICD-10-PCS procedure codes is that ICD-10-PCS codes do not contain diagnosis information. Where MS-DRGs use *diagnosis* information contained in an ICD-9-CM *procedure* code to differentiate DRG assignment logic, the task of replication becomes more difficult.

MS-DRGs assignment logic differentiates between the ICD-9-CM procedure code for excisional wound debridement (86.22) and other ICD-9-CM procedures that specify excision of soft tissue. This distinction is not made in ICD-10-PCS procedure codes. The diagnosis information is fully captured by the diagnosis codes on the record. In the ICD-10-PCS, “cutting out or off a portion” of the subcutaneous tissue or fascia done regardless of the diagnosis is coded to the root operation, Excision. This translates into two different ICD-9-CM alternatives, 83.39 *Excision of Lesion of Other Soft Tissue* and 86.22 *Excisional Debridement of Wound, Infection, Or Burn*.

In the musculoskeletal MS-DRGs, the fact that the ICD-10-PCS codes translate into two equally plausible ICD-9-CM codes, creates a list conflict between MS-DRGs 463-465 *Wound Debridement and Skin Graft Except Hand, for Musculoskeletal and Connective Tissue Disorders* and MS-DRGs 500-502 *Soft Tissue Procedures*. To resolve the conflict, the possible ICD-9-CM translations and their list assignments were reviewed, along with the frequency data available for the ICD-9-CM translation alternatives. Both are shown in the following table.

Alternatives for MS-DRG assignment: soft tissue excision and wound debridement

ICD-10-PCS Code(s)	ICD-9-CM Code	Mutually Exclusive DRG in MDC 08	FY 2007 MedPAR frequency
0JB***Z Excision of Subcutaneous Tissue and Fascia (20 codes)	83.39 Excision Of Lesion Of Other Soft Tissue	Soft Tissue Procedures (500-502)	16,324
0JB***Z Excision of Subcutaneous Tissue and Fascia (20 codes)	86.22 Excisional Debridement Of Wound, Infection, Or Burn	Wound Debridement and Skin Graft Except Hand, for Musculoskeletal and Connective Tissue Disorders (463-465)	104,156

In this case, the choice was made to override the closest match between the meaning of the ICD-9-CM code and the ICD-10-PCS codes and assign the ICD-10-PCS codes to the wound debridement MS-DRGs 463-465 *Wound Debridement and Skin Graft Except Hand, for Musculoskeletal and Connective Tissue Disorders*. The frequency data for the wound debridement procedure is overwhelmingly dominant. A record coded in ICD-10-PCS and containing 0JBN0ZZ, will be assigned in the ICD-10-CM/PCS based version of MS-DRGs to MS-DRGs 463-465, and not to MS-DRGs 500-502.

ICD-9-CM and ICD-10-PCS based versions of MS-DRGs 463-465*

*(ICD-10-PCS in condensed format. See Appendix E for the complete list of ICD-10-PCS code titles)

ICD-9-CM based list for MS-DRGs 463-465 Wound Debridement and Skin Graft Except Hand, for Musculoskeletal and Connective Tissue Disorders (13 codes)	ICD-10-PCS based list for MS-DRGs 463-465 Wound Debridement and Skin Graft Except Hand, for Musculoskeletal and Connective Tissue Disorders (378 codes)
86.22 Excisional Debridement Of Wound, Infection, Or Burn 86.60 Free Skin Graft, Not Otherwise Specified 86.63 Full-Thickness Skin Graft To Other Sites 86.65 Heterograft To Skin 86.66 Homograft To Skin 86.67 Dermal Regenerative Graft 86.69 Other Skin Graft To Other Sites 86.70 Pedicle Or Flap Graft, Not Otherwise Specified 86.71 Cutting And Preparation Of Pedicle Grafts Or Flaps 86.72 Advancement Of Pedicle Graft 86.74 Attachment Of Pedicle Or Flap Graft To Other Sites 86.75 Revision Of Pedicle Or Flap Graft 86.93 Insertion Of Tissue Expander	0H8**** Division of Skin (20 codes) 0HB***Z Excision of Skin (20 codes) 0HR**** Replacement of Skin with Tissue Substitute(136 codes) 0HX**** Transfer Skin (20 codes) 0JB***Z Excision of Subcutaneous Tissue and Fascia (20 codes) 0JH**** Insertion of Tissue Expander into Subcutaneous Tissue and Fascia (44 codes) 0JX**** Transfer Subcutaneous Tissue and Fascia (80 codes) 0[W,X]U**** Supplement Body Region with Tissue Substitute (38 codes)

ICD-10-PCS clusters necessary for revisions of hip and knee replacement

In the musculoskeletal system MS-DRGs, ICD-10-PCS clusters are required in order to fully replicate MS-DRG assignment logic for revision of hip and knee replacement procedures. An example is shown in the following table.

**Example of ICD-10-PCS cluster necessary to replicate MS-DRG assignment
Revision of Hip and Knee Replacement**

ICD-10-PCS Code(s)	ICD-9-CM Code	Mutually Exclusive DRG in MDC 08
0SR90J5 Replacement of Right Hip Joint with Synthetic Substitute, Metal on Polyethylene, Open Approach And 0SP90JZ Removal of Synthetic Substitute from Right Hip Joint, Open Approach	00.70 Revision of hip replacement, both acetabular and femoral components	Revision of Hip or Knee Replacement (466-468)
0SR90J5 Replacement of Right Hip Joint with Synthetic Substitute, Metal on Polyethylene, Open Approach	81.51 Total Hip Replacement	Major Joint Replacement or Reattachment of Lower Extremity (469-470)
0SP90JZ Removal of Synthetic Substitute from Right Hip Joint, Open Approach	80.05 Arthrotomy For Removal Of Prosthesis Of Hip	Hip and Femur Procedures Except Major Joint (480-482)

As in the cardiovascular system example, three MS-DRG categories within the musculoskeletal MS-DRGs must “share” the two ICD-10-PCS procedure codes in order to fully replicate the MS-DRG logic. In the MS-DRGs *466-468 Revision of Hip and Knee Replacement*, two ICD-10-PCS procedure codes are necessary to fully replicate the ICD-9-CM code specifying revision of a hip replacement. In ICD-10-PCS root operation terms, *Removal* specifies taking out the previously implanted prosthesis and *Replacement* specifies putting in the new prosthesis. Without the *Removal* ICD-10-PCS code, it would not be clear that this is a revision of a previous hip replacement. In the second row of the table, only the ICD-10-PCS procedure code for replacement of the hip joint is necessary to replace ICD-9-CM code *81.51 Total Hip Replacement* and replicate the MS-DRG logic in *469-470 Major Joint Replacement or Reattachment of Lower Extremity*. In the third row of the table, only the ICD-10-PCS procedure code for removal of the previously implanted hip prosthesis is necessary.

Because all three ICD-9-CM codes are on different MS-DRG assignment lists, the ICD-10-CM/PCS based version of MS-DRGs will need to be modified to look for the pairs of ICD-10-PCS procedure codes, as shown in the first row of the example, in order to fully replicate DRG assignment for MS-DRGs 466-468. If all three ICD-9-CM codes had been in the same DRG list, no change to the DRG assignment logic would be necessary.

Additional Necessary Changes to Application Logic

A few cases presented challenges in replicating the MS-DRGs using ICD-10-CM codes. The ICD-10-CM codes cannot be handled in the current MS-DRG logic. The MS-DRG assignment logic will need to be modified to capture information beyond that contained

in the ICD-10-CM/PCS code in order to assign the ICD-10-CM/PCS coded record to the correct MS-DRG. Necessary changes to the logic result from the following translation misalignment:

- ICD-9-CM gender-specific codes that are non-specific in ICD-10-CM
- ICD-9-CM obstetrics codes that contain information discontinued in ICD-10-CM

Gender-Specific Codes in ICD-9-CM

In the following example, the ICD-10-CM code for a condition includes both males and females, whereas in ICD-9-CM there are separate codes for the condition occurring in a female and in a male.

ICD-10-CM stress incontinence code with ICD-9-CM translation and MS-DRG assignment

ICD-10-CM Code	ICD-9-CM Codes	MDC/DRG Assignment
N39.3 Stress incontinence (female) (male)	625.6 Stress incontinence, female	MDC 13 760-761 Menstrual and Other Female Reproductive System Disorders
N39.3 Stress incontinence (female) (male)	788.32 Stress incontinence, male	MDC 11 695-696 Kidney and Urinary Tract Signs and Symptoms

Because the gender of the patient is not specified in the ICD-10-CM code, in this rare case the DRG assignment logic must be modified to look for the patient's gender in the submitted record. If the gender of the patient is obtained from the record and used in MS-DRG assignment, the ICD-10-CM/PCS based version will produce the same MS-DRG assignment results as the ICD-9-CM based version.

Obstetrics Codes and Encounter Information

The ICD-9-CM obstetrics chapter classifies conditions at the code level according to whether the patient delivered during the episode of care. ICD-10-CM intentionally does not capture information in the diagnosis code. The obstetrics chapter of ICD-10-CM has been redesigned to classify conditions at the code level based on the trimester of the pregnancy and other clinically relevant dimensions.

MS-DRGs MDC 14 *Pregnancy, Childbirth and the Puerperium* is organized around the ICD-9-CM classification scheme. DRGs 774 *Vaginal Delivery with Complicating Diagnoses* and 775 *Vaginal Delivery without Complicating Diagnoses* rely on the ability of the diagnosis code to indicate whether the patient delivered during the current admission. In order to replicate the ICD-9-CM combination of diagnosis and procedure information necessary to appropriate MS-DRG assignment as it is currently organized, it is necessary to modify the MS-DRG assignment logic to look for both a qualifying diagnosis code *and* a qualifying ICD-10-PCS procedure code in order to assign a record to MS-DRGs 774-775, as shown in the following example.

ICD-10-PCS procedure code necessary for vaginal delivery MS-DRG assignment

ICD-10-PCS Codes	ICD-9-CM Code	MDC 14 DRG Assignment
O16.3 Unspecified maternal hypertension, third trimester And 10E0XZZ Delivery of Products of Conception, External Approach	642.91 Unspecified hypertension, with delivery	774 Vaginal Delivery
O16.3 Unspecified maternal hypertension, third trimester	642.93 Unspecified antepartum hypertension	781 Other Antepartum Diagnoses without Medical Complications

Because MS-DRGs rely on the procedure information in the ICD-9-CM diagnosis code specifying that a delivery has taken place, two ICD-10-CM/PCS codes are necessary to replicate the MS-DRG: the diagnosis code O16.3 and the procedure code 10E0XZZ. The ICD-10-CM diagnosis code O16.3 by itself does not specify that the patient delivered on this admission. O16.3 appearing on a record without procedure code 10E0XZZ is assigned to medical MS-DRG *781 Other Antepartum Diagnoses without Medical Complications*.

Converting an ICD-9-CM based application to ICD-10-CM/PCS

CMS encourages the healthcare industry to take advantage of the GEMs and information learned through CMS' MS-DRG conversion process to initiate efforts in the pre-implementation years to effect a smooth transition to ICD-10-CM/PCS. CMS is using this time to convert its applications to process ICD-10-CM/PCS codes directly and urges the industry to do the same. It is in everyone's interest to convert applications to process ICD-10-CM/PCS codes directly rather than mapping back to legacy systems. CMS sees conversion of applications as the least disruptive and most effective way to leverage the information built into existing applications and to prepare for the development of ICD-10-CM/PCS based systems that reap full benefit from the increased specificity of ICD-10-CM/PCS.

CMS has already undertaken extensive efforts toward developing an ICD-10-CM/PCS version of the MS-DRGs. This new grouper will be based on more detailed and clinically relevant codes. As hospitals begin submitting claims with ICD-10-CM/PCS codes, our national data will improve. After sufficient coded ICD-10-CM/PCS data has been gathered, CMS will continue to modify the MS-DRGs based on this ICD-10-CM/PCS clinical data. As mentioned previously, the final ICD-10-CM/PCS MS-DRGs will be subject to formal rulemaking.

The same basic process used to successfully convert MS-DRGs can be used to convert any application that contains code lists and record processing logic. This section offers a brief summary of the basic steps required to completely and accurately convert such an ICD-9-CM based application to an ICD-10-CM/PCS based application.

Basic Steps to Convert an ICD-9-CM Based Application to ICD-10-CM/PCS

1. Find the lists of ICD-9-CM codes in an application
 - Group them into meaningful categories
 - Determine which are mutually exclusive and which are stand-alone
2. Using the ICD-10-CM/PCS to ICD-9-CM GEMs in reverse lookup, find the translation of each ICD-9-CM code on a list
 - The lookup of lists can be automated by writing programs to search the content of the ICD-10-CM/PCS to ICD-9-CM GEMs for the relevant entries
3. Using the translations found in the previous step, replace the ICD-9-CM based lists with lists of their ICD-10-CM/PCS code counterparts
 - The initial population of lists with ICD-10-CM/PCS codes can be automated by writing programs to return the results of the ICD-10-CM/PCS reverse lookup
4. Identify ICD-10-CM/PCS list conflicts in an application
 - The discovery of ICD-10-CM/PCS list conflicts can be automated by writing programs to look for one ICD-10-CM/PCS that is assigned to more than one list in a category designated as mutually exclusive
5. Resolve ICD-10-CM/PCS list conflicts by choosing which list the ICD-10-CM/PCS code will be assigned to in the converted application
 - This step can be automated by programs that use rules to resolve conflicts based on frequency, price or correlation with other reference data
 - Correlation of reference data with the ICD-9-CM codes can also be automated for ease of review
6. Identify general ICD-9-CM procedure codes that lead to inappropriate list assignment and tailor the list assignment accordingly
 - ICD-10-CM/PCS codes that specify anatomic site and are translations of ICD-9-CM codes that do not specify anatomic site may be inappropriate for a list in the application and may need to be streamlined
 - This step can be automated by writing programs that correlate the body system of the procedure code with the body system or systems of a specific category or list in the application
7. Identify ICD-10-CM/PCS clusters that are necessary to fully replicate application logic
 - This step can be automated by writing programs to discover which lists require ICD-10-CM/PCS clusters to fully replicate application logic
8. Perform final review of translated lists ICD-10-CM/PCS and ICD-9-CM, to identify:
 - Known areas of translation misalignment between ICD-10-CM/PCS and ICD-9-CM include the obstetrics chapters, injury and poisoning chapters, and the myocardial infarction category
 - Any additional areas of concern, based on knowledge of the application
 - If the application contains editor functionality, final review should include

- Removing specific ICD-10-CM/PCS translations inappropriate for the list definition (e.g., condition occurred in a hospital)
- Adding ICD-10-CM/PCS codes not on the ICD-9-CM based list but that meet the list criteria (e.g., for a gender-specific edit, ICD-10-CM/PCS codes that are gender-specific in ICD-10-CM/PCS and are not gender-specific in ICD-9-CM)
- ICD-9-CM codes not explicitly replaced in the translated lists
 - Optional step that principally tests the GEMs
 - This step can be automated by writing programs to find all the ICD-9-CM codes on an application's lists that are not target codes in the ICD-9-CM to ICD-10-CM/PCS GEM
- 9. Create an ICD-10-CM/PCS based copy of the application by replacing the ICD-9-CM lists in the application with the final translated ICD-10-CM/PCS lists
 - Taking the existing application, making a copy of it, and replacing its current ICD-9-CM lists with the translated ICD-10-CM/PCS lists, is considered the best way to preserve the comparability of the data collected in ICD-9-CM and data collected in the years following ICD-10-CM/PCS implementation

Staff Needed to Convert an ICD-9-CM Based Application to ICD-10

Computer programmers or other technical personnel

- Needed to perform steps 1-3 and step 9
- Must understand the program logic in the application or be able to get the information from the software engineers who maintain the application
- Could also write programs to automate translation, produce efficient display of translation results, and add efficiencies to other steps in the conversion process

Clinical coding and data analysts

- Needed for steps 4-8
- Must be able to evaluate the completeness and accuracy of the translation results for an application
- Ideally, a team composed of personnel with clinical coding expertise, data analysis expertise, and detailed knowledge of the practical use of the application

Clinicians

- Consulted as needed for steps 4-8
- Input in resolving issues such as ICD-10-CM/PCS list conflicts
- Needed to validate the clinical equivalence of the translated lists
- Ideally, are familiar with both ICD-9-CM and ICD-10-CM/PCS codes

Converting codes for a more limited project

Some users will be faced with updating codes in a more limited project, such as replacing ICD-9-CM codes with ICD-10-CM/PCS codes in a coverage policy. In this case there will be a specific narrative description of the conditions or procedures involved in the coverage policy. Users will find that it is quicker and more accurate to simply identify the correct ICD-10-CM/PCS codes by selecting the appropriate ICD-10-CM/PCS codes directly from code books or encoders. The GEMs can certainly assist with this process, but may not be needed.

Additional Resources

ICD-10-PCS, ICD-10-CM, and GEMs

<http://www.cms.hhs.gov/ICD10>

ICD-10-CM/PCS version of the MS-DRGs

http://www.cms.hhs.gov/ICD10/01m_2009_ICD10PCS.asp#TopOfPage

ICD-10-CM: <http://www.cdc.gov/nchs/about/otheract/icd9/icd10cm.htm>

Educational Resources including ICD-10-CM/PCS and GEMs fact sheets

http://www.cms.hhs.gov/ICD10/05_Educational_Resources.asp#TopOfPage

Appendix A

ICD-10-CM Codes with No ICD-9-CM Translation List Assignment for MS-DRGs

501 ICD-10-CM diagnosis codes have no plausible equivalent in ICD-9-CM. These codes translate to the entry *NoDx* in the GEMs. In MS-DRGs, all ICD-9-CM diagnosis codes, except the external cause chapter, that can be submitted in the PDX field are included on the PDX list and are assigned to an MDC.

The converted ICD-10-CM diagnosis list must operate the same way. Therefore, the ICD-10-CM codes with no ICD-9-CM translation have been assigned to an MDC and medical MS-DRG group for the ICD-10-CM/PCS based version of MS-DRGs. They are listed in the following table in condensed code format where multiple related codes are concerned. The correlations to ICD-9-CM associated with them are for internal logic purposes only, and only apply to MS-DRGs. They will not be added to the GEMs.

ICD-10-CM	Description	MDC and MS-DRG	ICD-9-CM	Description
G43.2	Status migrainosus	MDC 1 Headaches (102-103)	346.92	Migraine, unspecified, without mention of intractable migraine with status migrainosus
T36-50**6* (489 codes)	Underdosing	MDC 23 Aftercare (949-950)	V58.69	Long-term (current) use of other medications
Z66	Do not resuscitate	MDC 23 Other Factors Influencing Health Status (951)	V68.89	Encounters for other specified administrative purpose
Z67* (10 codes)	Blood type	MDC 23 Other Factors Influencing Health Status (951)	V68.89	Encounters for other specified administrative purpose

Appendix B

MDC Correlated to ICD-10-PCS body system in the Medical/Surgical Section for rule-based assignment of GEM-translated general ICD-9-CM procedure codes

The following table lists the correlation between MDC and ICD-10-PCS, based on the body system/anatomical site.

MDC	Description	PCS	Body System
1	Diseases and Disorders of the Nervous System	00 01	Central Nervous, Peripheral Nervous
2	Diseases and Disorders of the Eye	08	Eye
3	Diseases and Disorders of the Ear, Nose, Mouth and Throat	09 0C	Ear, Nose, Sinus Mouth & Throat
4	Diseases and Disorders of the Respiratory System	0B	Respiratory
5	Diseases and Disorders of the Circulatory System	02-6	Cardiovascular (Heart & Great Vessels, Arteries, Veins)
6	Diseases and Disorders of the Digestive System	0D	Gastrointestinal
7	Diseases and Disorders of the Hepatobiliary System and Pancreas	0F	Hepatobiliary & Pancreas
8	Diseases and Disorders of the Musculoskeletal System and Connective Tissue	0K-S, 0X-Y	Muscles, Tendons, Bones, Joints, Upper & Lower Extremities
9	Diseases and Disorders of the Skin, Subcutaneous Tissue and Breast	0H 0J	Skin & Breast Subcutaneous Tissue & Fascia
10	Endocrine, Nutritional and Metabolic Diseases and Disorders	0G	Endocrine
11	Diseases and Disorders of the Kidney and Urinary Tract	0T	Urinary
12	Diseases and Disorders of the Male Reproductive System	0V	Male Reproductive
13	Diseases and Disorders of the Female Reproductive System	0U	Female Reproductive
14	Pregnancy, Childbirth and the Puerperium	0U	Female Reproductive
15	Newborns and Other Neonates with Conditions Originating in the Perinatal Period		None
16	Diseases and Disorders of the Blood and Blood Forming Organs and Immunological Disorders	07	Lymphatic and Hemic
17	Myeloproliferative Diseases and Disorders, and Poorly Differentiated Neoplasm		None
18	Infectious and Parasitic Diseases (Systemic or Unspecified Sites)		None
19	Mental Diseases and Disorders		None
20	Alcohol/Drug Use and Alcohol/Drug Induced Organic Mental Disorders		None
21	Injuries, Poisonings and Toxic Effects of Drugs		None
22	Burns		None
23	Factors Influencing Health Status and Other Contacts with Health Services		None
24	Multiple Significant Trauma		None
25	Human Immunodeficiency Virus Infections		None

The following table demonstrates the rule-based ICD-10-PCS code assignment for replacing ICD-9-CM code 92.27 *Implantation or insertion of radioactive elements* where it occurs in MS-DRGs.

PCS Codes	Anatomic Sites Specified	MDC/DRG Assignment
11	Eye, Cranial cavity, Head and Neck	MDC 01 040-042 Peripheral/Cranial Nerve & Other Nervous System Procedures
15	Tongue, Oral Cavity, Jaw, Neck	MDC 03 133-134 Other Ear, Nose, Mouth and Throat O.R. Procedures
29	Tracheobronchial Tree, Trachea, Lung, Chest Wall, Pleural Cavity, Respiratory Tract	MDC 04 166-168 Other Respiratory System O.R. Procedures
6	Mediastinum, Pericardial Cavity	MDC 05 246-249 Radioactive element implant MDC 05 264 Other Circulatory O.R. Procedures
21	Esophagus, Rectum, Gastrointestinal Tract, Peritoneal Cavity, Abdominal Wall	MDC 06 356-358 Other Digestive System O.R. Procedures
33	Breast, Nipple, Head and Neck, Trunk, Extremities	MDC 09 579-581 O.R. Skin, Subcutaneous Tissue and Breast Procedures
9	Neck, Peritoneal Cavity, Retroperitoneum	MDC 10 628-630 Endocrine, Nutritional and Metabolic O.R. Procedures
8	Retroperitoneum, Genitourinary Tract	MDC 11 673-675 Other Kidney and Urinary Tract Procedures
16	Prostate, Male Perineum, Pelvic Cavity, Genitourinary Tract	MDC 12 715-718 Other Male Reproductive System O.R. Procedures
17	Vagina, Female Perineum, Pelvic Cavity, Genitourinary Tract	MDC 13 744-745 D&C, Conization, Laparoscopy and Tubal Interruption
261	All	MDC 21 907-909 Other O.R. Procedures for Injuries
0	None (0 records in MedPAR data that use 92.27 in MDC 24)	MDC 24 957-959 Other O.R. Procedures for Multiple Significant Trauma

Appendix C

Resolving List Conflicts—Additional Case Study

The language differences between the ICD-9-CM and ICD-10-PCS procedure code sets can be far more striking, and sometimes frequency data were not enough to point clearly to assigning an ICD-10-PCS code to one list over another. In such cases, the members of

the expert panel reviewing the converted lists assigned the ICD-10-PCS code to the most appropriate list on clinical grounds.

In the following example, 0BQ10ZZ is a procedure conflict. It was among the conflicts slated for clinical review.

ICD-10-PCS Code	ICD-9-CM Codes	Mutually Exclusive DRG List in MDC 04	FY 2007 MedPAR records
0BQ10ZZ Repair Trachea, Open Approach	31.71 Suture Of Laceration Of Trachea	166-168 Other Respiratory System O.R. Procedures	48
0BQ10ZZ Repair Trachea, Open Approach	31.79 Other Repair And Plastic Operations On Trachea	163-165 Major Chest Procedures	150

The review panel assigned ICD-10-PCS code 0BQ10ZZ to the MS-DRG list *163-165 Major Chest Procedures*, replacing procedure code *31.79 Other repair and plastic operations on trachea* instead of *31.71 Suture of laceration of trachea*, for the closer correspondence in meaning, in addition to the higher frequency. The ICD-9-CM code (and corresponding MS-DRG list) not chosen for replacement specifies that the repair was done for a *laceration* of the trachea—in other words, it contains diagnosis information. ICD-10-PCS procedure codes by design do not contain diagnosis information, because it makes the classification less consistent and flexible. In a post-implementation world, one cannot be confident that when ICD-10-PCS code 0BQ10ZZ is on the record it was used because the patient had a lacerated trachea—that information is contained in the diagnosis code and not the procedure code. Therefore, the translation to the ICD-9-CM code 31.79 that does *not* state what is diagnostically wrong with the patient is the more plausible translation of 0BQ10ZZ.

The whole exercise of converting an ICD-9-CM based application to an ICD-10-CM/PCS based one is essentially *predicting* how coders will code in ICD-10-CM/PCS the same condition or procedure that is currently coded using ICD-9-CM codes. To date, providers have not made extensive efforts to dual code records in ICD-9-CM and ICD-10-CM/PCS using the current version of the code sets. There has been limited testing and ICD-10-CM/PCS code use by providers. The industry has access to a limited data set of ICD-9-CM and ICD-10-CM/PCS dual coded records, dating from the evaluation and testing of ICD-10-CM and ICD-10-PCS, from which to establish a factual correlation between how coders code the same record in ICD-9-CM and ICD-10-CM/PCS. What exists is a plausible correlation, based on the complete meaning of the respective codes as represented in their tabular and index information. Like a translation dictionary, the GEMs are based on the possible meanings of the concept being looked up, where “meaning” refers to the “correspondence” between the official documents (tabular and index) which define each code set. Using the GEMs, one is essentially projecting what ICD-10-CM/PCS codes will most likely be recorded in 2013 in place of an ICD-9-CM code currently used to capture the same information in the record.

One cannot know, based on the ICD-10-PCS code *0BQ10ZZ Repair trachea, open approach*, that the repair of the trachea was performed for a traumatic laceration. If an ICD-10-PCS procedure code were assigned that *does not* contain diagnosis information as the replacement for an ICD-9-CM code that *does* contain diagnosis information, the conversion is rendered more speculative, and one would be less confident that the current DRG logic is being replicated.

Appendix D

Conversion vs. Mapping—an MS-DRG Case Study

In the example that follows, the public domain reimbursement mapping for one ICD-10-PCS code is used for MS-DRG assignment using the ICD-9-CM based version of MS-DRGs version 26.0.

MS-DRG assignment of 0WQFXZZ using public domain reimbursement mapping

ICD-10-PCS Code	ICD-9-CM Code in Reimbursement Mapping	MDC/MS-DRG Assignment
0WQFXZZ Repair Abdominal Wall, External Approach	54.63 Other Suture Of Abdominal Wall	MDC 06 356-358 Other Digestive System O.R. Procedures MDC 09 579-581 O.R. Skin, Subcutaneous Tissue and Breast Procedures MDC17 820-822 Major O.R. Procedures for MDC17 MDC 21 907-909 Other O.R. Procedures for Injuries MDC 24 957-959 Other O.R. Procedures for Multiple Significant Trauma

The ICD-10-PCS procedure code 0WQFXZZ maps to one ICD-9-CM procedure code in the public domain reimbursement mapping: *54.63 Other Suture Of Abdominal Wall*. This means 0WQFXZZ coded on a record and processed using a one-to-one mapping will be assigned in MS-DRGs only where 54.63 would have been assigned. Based on the principal diagnosis and resulting assignment to an MDC, 0WQFXZZ would be assigned to one of the MS-DRGs listed in column three of the table. Note that only one—MDC 06—defines a specific body system that would likely include a repair of the abdominal wall region. MDC 09 includes all procedures on the skin, and MDCs 17, 21 and 24 contain very broad, all-embracing procedure lists.

By contrast, when MS-DRGs are converted to an ICD-10-CM/PCS based version and processed directly, 0WQFXZZ is assigned to many more specific MDCs where one would expect to find a procedure for repair of the abdominal wall. This is possible because the converted MS-DRGs can include *all plausible translations of 0WQFXZZ* instead of a simplified mapping to a single ICD-9-CM code. The practical result is that 0WQFXZZ will replace various ICD-9-CM codes used in various lists.

In MDC 06, 0WQFXZZ replaces *54.72 Other Repair Of Abdominal Wall* based on clinical review and frequency data, and is therefore assigned to MS-DRG 350-355 instead of 356-358. (To place 0WQFXZZ on both lists and therefore assign it to two

different MS-DRG groups in MDC 06 would create a list conflict, described in the body of this paper.)

0WQFXZZ is also assigned to MDCs 07 and 13 based on the plausible translation of 0WQFXZZ to both ICD-9-CM codes *54.61 Reclosure Of Postoperative Disruption Of Abdominal Wall* and *54.62 Delayed Closure Of Granulating Abdominal Wound* in MS-DRGs 423-425 and 749-750 respectively. (ICD-9-CM code 54.63 is not in MDC 07; ICD-9-CM code 54.72 is not in MDC 13.)

0WQFXZZ is assigned to one MS-DRG in MDC 12, based on the use of 0WQFXZZ as part of a necessary ICD-10-CM/PCS cluster (described on p. 8).

In contrast to the five MDCs assigned by ICD-10-PCS code 0WQFXZZ based on the mapping, a converted MS-DRGs assigns the ICD-10-PCS code to MS-DRGs in nine MDCs, as shown in the table below.

MS-DRG assignment of 0WQFXZZ using MS-DRGs converted to ICD-10-CM/PCS

ICD-10-PCS Code	ICD-9-CM codes replaced in converted MS-DRG lists	MDC/MS-DRG Assignment
0WQFXZZ Repair Abdominal Wall, External Approach	54.72 Other Repair Of Abdominal Wall	MDC 06 350-355 <u>Hernia Procedures except Inguinal and Femoral</u>
0WQFXZZ Repair Abdominal Wall, External Approach	54.63 Other Suture Of Abdominal Wall	MDC 09 579-581 OR Skin, Subcutaneous Tissue and Breast Procedures MDC 17 820-822 Major O.R. Procedures for MDC17 MDC 21 907-909 Other O.R. Procedures for Injuries MDC 24 957-959 Other O.R. Procedures for Multiple Significant Trauma
0WQFXZZ Repair Abdominal Wall, External Approach	54.61 Reclosure Of Postoperative Disruption Of Abdominal Wall 54.62 Delayed Closure Of Granulating Abdominal Wound	MDC 07 423-425 <u>Other Hepatobiliary or Pancreas O.R. Procedures</u> MDC 13 749-750 <u>Other Female Reproductive System O.R. Procedures</u>
0WQFXZZ Repair Abdominal	57.22 Revision Or Closure Of Vesicostomy	MDC 12 715-718 <u>Other Male Reproductive System O.R. Procedures</u>

ICD-10-PCS Code	ICD-9-CM codes replaced in converted MS-DRG lists	MDC/MS-DRG Assignment
Wall, External Approach	57.82 Closure Of Cystostomy	<u>(part of ICD-10-CM/PCS cluster needed)</u>

Appendix E

ICD-9-CM and ICD-10-CM/PCS based versions of MS-DRGs Full Code Title Format

ICD-9-CM and ICD-10-PCS based versions of MS-DRGs 231-236

ICD-9-CM based list for MS-DRGs 231-236

Coronary Bypass (9 codes)

36.10 Aortocoronary Bypass For Heart Revascularization, Not Otherwise Specified
36.11 (Aorto)coronary bypass of one coronary artery
36.12 (Aorto)coronary bypass of two coronary arteries
36.13 (Aorto)coronary bypass of three coronary arteries
36.14 (Aorto)coronary bypass of four or more coronary arteries
36.15 Single Internal Mammary-Coronary Artery Bypass
36.16 Double Internal Mammary-Coronary Artery Bypass
36.17 Abdominal - Coronary Artery Bypass
36.19 Other Bypass Anastomosis For Heart Revascularization

ICD-9-CM and ICD-10-PCS based versions of MS-DRGs 231-236

ICD-10-PCS based list for MS-DRGs 231-236

Coronary Bypass (232 codes)

0210093 Bypass Coronary Artery, One Site to Coronary Artery with Autologous Venous Tissue, Open Approach
0210098 Bypass Coronary Artery, One Site to Right Internal Mammary with Autologous Venous Tissue, Open Approach
0210099 Bypass Coronary Artery, One Site to Left Internal Mammary with Autologous Venous Tissue, Open Approach
021009C Bypass Coronary Artery, One Site to Thoracic Artery with Autologous Venous Tissue, Open Approach
021009F Bypass Coronary Artery, One Site to Abdominal Artery with Autologous Venous Tissue, Open Approach
021009W Bypass Coronary Artery, One Site to Aorta with Autologous Venous Tissue, Open Approach
02100A3 Bypass Coronary Artery, One Site to Coronary Artery with Autologous Arterial Tissue, Open Approach
02100A8 Bypass Coronary Artery, One Site to Right Internal Mammary with Autologous Arterial Tissue, Open Approach
02100A9 Bypass Coronary Artery, One Site to Left Internal Mammary with Autologous Arterial Tissue, Open Approach
02100AC Bypass Coronary Artery, One Site to Thoracic Artery with Autologous Arterial Tissue, Open Approach
02100AF Bypass Coronary Artery, One Site to Abdominal Artery with Autologous Arterial Tissue, Open Approach
02100AW Bypass Coronary Artery, One Site to Aorta with Autologous Arterial Tissue, Open Approach
02100J3 Bypass Coronary Artery, One Site to Coronary Artery with Synthetic Substitute, Open Approach
02100J8 Bypass Coronary Artery, One Site to Right Internal Mammary with Synthetic Substitute, Open Approach
02100J9 Bypass Coronary Artery, One Site to Left Internal Mammary with Synthetic Substitute, Open Approach
02100JC Bypass Coronary Artery, One Site to Thoracic Artery with Synthetic Substitute, Open Approach
02100JF Bypass Coronary Artery, One Site to Abdominal Artery with Synthetic Substitute, Open Approach
02100JW Bypass Coronary Artery, One Site to Aorta with Synthetic Substitute, Open Approach
02100K3 Bypass Coronary Artery, One Site to Coronary Artery with Nonautologous Tissue Substitute, Open Approach
02100K8 Bypass Coronary Artery, One Site to Right Internal Mammary with Nonautologous Tissue Substitute, Open Approach
02100K9 Bypass Coronary Artery, One Site to Left Internal Mammary with Nonautologous Tissue Substitute, Open Approach
02100KC Bypass Coronary Artery, One Site to Thoracic Artery with Nonautologous Tissue Substitute, Open Approach
02100KF Bypass Coronary Artery, One Site to Abdominal Artery with Nonautologous Tissue Substitute, Open Approach
02100KW Bypass Coronary Artery, One Site to Aorta with Nonautologous Tissue Substitute, Open Approach
02100Z3 Bypass Coronary Artery, One Site to Coronary Artery, Open Approach
02100Z8 Bypass Coronary Artery, One Site to Right Internal Mammary, Open Approach
02100Z9 Bypass Coronary Artery, One Site to Left Internal Mammary, Open Approach
02100ZC Bypass Coronary Artery, One Site to Thoracic Artery, Open Approach
02100ZF Bypass Coronary Artery, One Site to Abdominal Artery, Open Approach
0210493 Bypass Coronary Artery, One Site to Coronary Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach
0210498 Bypass Coronary Artery, One Site to Right Internal Mammary with Autologous Venous Tissue, Percutaneous Endoscopic Approach

ICD-10-PCS based list for MS-DRGs 231-236**Coronary Bypass (232 codes)**

0210499 Bypass Coronary Artery, One Site to Left Internal Mammary with Autologous Venous Tissue, Percutaneous Endoscopic Approach
021049C Bypass Coronary Artery, One Site to Thoracic Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach
021049F Bypass Coronary Artery, One Site to Abdominal Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach
021049W Bypass Coronary Artery, One Site to Aorta with Autologous Venous Tissue, Percutaneous Endoscopic Approach
02104A3 Bypass Coronary Artery, One Site to Coronary Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach
02104A8 Bypass Coronary Artery, One Site to Right Internal Mammary with Autologous Arterial Tissue, Percutaneous Endoscopic Approach
02104A9 Bypass Coronary Artery, One Site to Left Internal Mammary with Autologous Arterial Tissue, Percutaneous Endoscopic Approach
02104AC Bypass Coronary Artery, One Site to Thoracic Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach
02104AF Bypass Coronary Artery, One Site to Abdominal Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach
02104AW Bypass Coronary Artery, One Site to Aorta with Autologous Arterial Tissue, Percutaneous Endoscopic Approach
02104J3 Bypass Coronary Artery, One Site to Coronary Artery with Synthetic Substitute, Percutaneous Endoscopic Approach
02104J8 Bypass Coronary Artery, One Site to Right Internal Mammary with Synthetic Substitute, Percutaneous Endoscopic Approach
02104J9 Bypass Coronary Artery, One Site to Left Internal Mammary with Synthetic Substitute, Percutaneous Endoscopic Approach
02104JC Bypass Coronary Artery, One Site to Thoracic Artery with Synthetic Substitute, Percutaneous Endoscopic Approach
02104JF Bypass Coronary Artery, One Site to Abdominal Artery with Synthetic Substitute, Percutaneous Endoscopic Approach
02104JW Bypass Coronary Artery, One Site to Aorta with Synthetic Substitute, Percutaneous Endoscopic Approach
02104K3 Bypass Coronary Artery, One Site to Coronary Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
02104K8 Bypass Coronary Artery, One Site to Right Internal Mammary with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
02104K9 Bypass Coronary Artery, One Site to Left Internal Mammary with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
02104KC Bypass Coronary Artery, One Site to Thoracic Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
02104KF Bypass Coronary Artery, One Site to Abdominal Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
02104KW Bypass Coronary Artery, One Site to Aorta with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
02104Z3 Bypass Coronary Artery, One Site to Coronary Artery, Percutaneous Endoscopic Approach
02104Z8 Bypass Coronary Artery, One Site to Right Internal Mammary, Percutaneous Endoscopic Approach
02104Z9 Bypass Coronary Artery, One Site to Left Internal Mammary, Percutaneous Endoscopic Approach
02104ZC Bypass Coronary Artery, One Site to Thoracic Artery, Percutaneous Endoscopic Approach
02104ZF Bypass Coronary Artery, One Site to Abdominal Artery, Percutaneous Endoscopic Approach
0211093 Bypass Coronary Artery, Two Sites to Coronary Artery with Autologous Venous Tissue, Open Approach
0211098 Bypass Coronary Artery, Two Sites to Right Internal Mammary with Autologous Venous Tissue, Open Approach
0211099 Bypass Coronary Artery, Two Sites to Left Internal Mammary with Autologous Venous Tissue, Open Approach
021109C Bypass Coronary Artery, Two Sites to Thoracic Artery with Autologous Venous Tissue, Open Approach
021109F Bypass Coronary Artery, Two Sites to Abdominal Artery with Autologous Venous Tissue, Open Approach
021109W Bypass Coronary Artery, Two Sites to Aorta with Autologous Venous Tissue, Open Approach
02110A3 Bypass Coronary Artery, Two Sites to Coronary Artery with Autologous Arterial Tissue, Open Approach
02110A8 Bypass Coronary Artery, Two Sites to Right Internal Mammary with Autologous Arterial Tissue, Open Approach
02110A9 Bypass Coronary Artery, Two Sites to Left Internal Mammary with Autologous Arterial Tissue, Open Approach

ICD-10-PCS based list for MS-DRGs 231-236
Coronary Bypass (232 codes)

Approach
02110AC Bypass Coronary Artery, Two Sites to Thoracic Artery with Autologous Arterial Tissue, Open Approach
02110AF Bypass Coronary Artery, Two Sites to Abdominal Artery with Autologous Arterial Tissue, Open Approach
02110AW Bypass Coronary Artery, Two Sites to Aorta with Autologous Arterial Tissue, Open Approach
02110J3 Bypass Coronary Artery, Two Sites to Coronary Artery with Synthetic Substitute, Open Approach
02110J8 Bypass Coronary Artery, Two Sites to Right Internal Mammary with Synthetic Substitute, Open Approach
02110J9 Bypass Coronary Artery, Two Sites to Left Internal Mammary with Synthetic Substitute, Open Approach
02110JC Bypass Coronary Artery, Two Sites to Thoracic Artery with Synthetic Substitute, Open Approach
02110JF Bypass Coronary Artery, Two Sites to Abdominal Artery with Synthetic Substitute, Open Approach
02110JW Bypass Coronary Artery, Two Sites to Aorta with Synthetic Substitute, Open Approach
02110K3 Bypass Coronary Artery, Two Sites to Coronary Artery with Nonautologous Tissue Substitute, Open Approach
02110K8 Bypass Coronary Artery, Two Sites to Right Internal Mammary with Nonautologous Tissue Substitute, Open Approach
02110K9 Bypass Coronary Artery, Two Sites to Left Internal Mammary with Nonautologous Tissue Substitute, Open Approach
02110KC Bypass Coronary Artery, Two Sites to Thoracic Artery with Nonautologous Tissue Substitute, Open Approach
02110KF Bypass Coronary Artery, Two Sites to Abdominal Artery with Nonautologous Tissue Substitute, Open Approach
02110KW Bypass Coronary Artery, Two Sites to Aorta with Nonautologous Tissue Substitute, Open Approach
02110Z3 Bypass Coronary Artery, Two Sites to Coronary Artery, Open Approach
02110Z8 Bypass Coronary Artery, Two Sites to Right Internal Mammary, Open Approach
02110Z9 Bypass Coronary Artery, Two Sites to Left Internal Mammary, Open Approach
02110ZC Bypass Coronary Artery, Two Sites to Thoracic Artery, Open Approach
02110ZF Bypass Coronary Artery, Two Sites to Abdominal Artery, Open Approach
0211493 Bypass Coronary Artery, Two Sites to Coronary Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach
0211498 Bypass Coronary Artery, Two Sites to Right Internal Mammary with Autologous Venous Tissue, Percutaneous Endoscopic Approach
0211499 Bypass Coronary Artery, Two Sites to Left Internal Mammary with Autologous Venous Tissue, Percutaneous Endoscopic Approach
021149C Bypass Coronary Artery, Two Sites to Thoracic Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach
021149F Bypass Coronary Artery, Two Sites to Abdominal Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach
021149W Bypass Coronary Artery, Two Sites to Aorta with Autologous Venous Tissue, Percutaneous Endoscopic Approach
02114A3 Bypass Coronary Artery, Two Sites to Coronary Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach
02114A8 Bypass Coronary Artery, Two Sites to Right Internal Mammary with Autologous Arterial Tissue, Percutaneous Endoscopic Approach
02114A9 Bypass Coronary Artery, Two Sites to Left Internal Mammary with Autologous Arterial Tissue, Percutaneous Endoscopic Approach
02114AC Bypass Coronary Artery, Two Sites to Thoracic Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach
02114AF Bypass Coronary Artery, Two Sites to Abdominal Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach
02114AW Bypass Coronary Artery, Two Sites to Aorta with Autologous Arterial Tissue, Percutaneous Endoscopic Approach
02114J3 Bypass Coronary Artery, Two Sites to Coronary Artery with Synthetic Substitute, Percutaneous Endoscopic Approach
02114J8 Bypass Coronary Artery, Two Sites to Right Internal Mammary with Synthetic Substitute, Percutaneous Endoscopic Approach
02114J9 Bypass Coronary Artery, Two Sites to Left Internal Mammary with Synthetic Substitute, Percutaneous Endoscopic Approach
02114JC Bypass Coronary Artery, Two Sites to Thoracic Artery with Synthetic Substitute, Percutaneous Endoscopic Approach
02114JF Bypass Coronary Artery, Two Sites to Abdominal Artery with Synthetic Substitute, Percutaneous Endoscopic Approach

ICD-10-PCS based list for MS-DRGs 231-236**Coronary Bypass (232 codes)**

02114JW Bypass Coronary Artery, Two Sites to Aorta with Synthetic Substitute, Percutaneous Endoscopic Approach
02114K3 Bypass Coronary Artery, Two Sites to Coronary Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
02114K8 Bypass Coronary Artery, Two Sites to Right Internal Mammary with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
02114K9 Bypass Coronary Artery, Two Sites to Left Internal Mammary with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
02114KC Bypass Coronary Artery, Two Sites to Thoracic Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
02114KF Bypass Coronary Artery, Two Sites to Abdominal Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
02114KW Bypass Coronary Artery, Two Sites to Aorta with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
02114Z3 Bypass Coronary Artery, Two Sites to Coronary Artery, Percutaneous Endoscopic Approach
02114Z8 Bypass Coronary Artery, Two Sites to Right Internal Mammary, Percutaneous Endoscopic Approach
02114Z9 Bypass Coronary Artery, Two Sites to Left Internal Mammary, Percutaneous Endoscopic Approach
02114ZC Bypass Coronary Artery, Two Sites to Thoracic Artery, Percutaneous Endoscopic Approach
02114ZF Bypass Coronary Artery, Two Sites to Abdominal Artery, Percutaneous Endoscopic Approach
0212093 Bypass Coronary Artery, Three Sites to Coronary Artery with Autologous Venous Tissue, Open Approach
0212098 Bypass Coronary Artery, Three Sites to Right Internal Mammary with Autologous Venous Tissue, Open Approach
0212099 Bypass Coronary Artery, Three Sites to Left Internal Mammary with Autologous Venous Tissue, Open Approach
021209C Bypass Coronary Artery, Three Sites to Thoracic Artery with Autologous Venous Tissue, Open Approach
021209F Bypass Coronary Artery, Three Sites to Abdominal Artery with Autologous Venous Tissue, Open Approach
021209W Bypass Coronary Artery, Three Sites to Aorta with Autologous Venous Tissue, Open Approach
02120A3 Bypass Coronary Artery, Three Sites to Coronary Artery with Autologous Arterial Tissue, Open Approach
02120A8 Bypass Coronary Artery, Three Sites to Right Internal Mammary with Autologous Arterial Tissue, Open Approach
02120A9 Bypass Coronary Artery, Three Sites to Left Internal Mammary with Autologous Arterial Tissue, Open Approach
02120AC Bypass Coronary Artery, Three Sites to Thoracic Artery with Autologous Arterial Tissue, Open Approach
02120AF Bypass Coronary Artery, Three Sites to Abdominal Artery with Autologous Arterial Tissue, Open Approach
02120AW Bypass Coronary Artery, Three Sites to Aorta with Autologous Arterial Tissue, Open Approach
02120J3 Bypass Coronary Artery, Three Sites to Coronary Artery with Synthetic Substitute, Open Approach
02120J8 Bypass Coronary Artery, Three Sites to Right Internal Mammary with Synthetic Substitute, Open Approach
02120J9 Bypass Coronary Artery, Three Sites to Left Internal Mammary with Synthetic Substitute, Open Approach
02120JC Bypass Coronary Artery, Three Sites to Thoracic Artery with Synthetic Substitute, Open Approach
02120JF Bypass Coronary Artery, Three Sites to Abdominal Artery with Synthetic Substitute, Open Approach
02120JW Bypass Coronary Artery, Three Sites to Aorta with Synthetic Substitute, Open Approach
02120K3 Bypass Coronary Artery, Three Sites to Coronary Artery with Nonautologous Tissue Substitute, Open Approach
02120K8 Bypass Coronary Artery, Three Sites to Right Internal Mammary with Nonautologous Tissue Substitute, Open Approach
02120K9 Bypass Coronary Artery, Three Sites to Left Internal Mammary with Nonautologous Tissue Substitute, Open Approach
02120KC Bypass Coronary Artery, Three Sites to Thoracic Artery with Nonautologous Tissue Substitute, Open Approach
02120KF Bypass Coronary Artery, Three Sites to Abdominal Artery with Nonautologous Tissue Substitute, Open Approach
02120KW Bypass Coronary Artery, Three Sites to Aorta with Nonautologous Tissue Substitute, Open Approach
02120Z3 Bypass Coronary Artery, Three Sites to Coronary Artery, Open Approach
02120Z8 Bypass Coronary Artery, Three Sites to Right Internal Mammary, Open Approach
02120Z9 Bypass Coronary Artery, Three Sites to Left Internal Mammary, Open Approach
02120ZC Bypass Coronary Artery, Three Sites to Thoracic Artery, Open Approach
02120ZF Bypass Coronary Artery, Three Sites to Abdominal Artery, Open Approach
0212493 Bypass Coronary Artery, Three Sites to Coronary Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach
0212498 Bypass Coronary Artery, Three Sites to Right Internal Mammary with Autologous Venous Tissue, Percutaneous Endoscopic Approach

ICD-10-PCS based list for MS-DRGs 231-236**Coronary Bypass (232 codes)**

0212499 Bypass Coronary Artery, Three Sites to Left Internal Mammary with Autologous Venous Tissue, Percutaneous Endoscopic Approach
021249C Bypass Coronary Artery, Three Sites to Thoracic Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach
021249F Bypass Coronary Artery, Three Sites to Abdominal Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach
021249W Bypass Coronary Artery, Three Sites to Aorta with Autologous Venous Tissue, Percutaneous Endoscopic Approach
02124A3 Bypass Coronary Artery, Three Sites to Coronary Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach
02124A8 Bypass Coronary Artery, Three Sites to Right Internal Mammary with Autologous Arterial Tissue, Percutaneous Endoscopic Approach
02124A9 Bypass Coronary Artery, Three Sites to Left Internal Mammary with Autologous Arterial Tissue, Percutaneous Endoscopic Approach
02124AC Bypass Coronary Artery, Three Sites to Thoracic Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach
02124AF Bypass Coronary Artery, Three Sites to Abdominal Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach
02124AW Bypass Coronary Artery, Three Sites to Aorta with Autologous Arterial Tissue, Percutaneous Endoscopic Approach
02124J3 Bypass Coronary Artery, Three Sites to Coronary Artery with Synthetic Substitute, Percutaneous Endoscopic Approach
02124J8 Bypass Coronary Artery, Three Sites to Right Internal Mammary with Synthetic Substitute, Percutaneous Endoscopic Approach
02124J9 Bypass Coronary Artery, Three Sites to Left Internal Mammary with Synthetic Substitute, Percutaneous Endoscopic Approach
02124JC Bypass Coronary Artery, Three Sites to Thoracic Artery with Synthetic Substitute, Percutaneous Endoscopic Approach
02124JF Bypass Coronary Artery, Three Sites to Abdominal Artery with Synthetic Substitute, Percutaneous Endoscopic Approach
02124JW Bypass Coronary Artery, Three Sites to Aorta with Synthetic Substitute, Percutaneous Endoscopic Approach
02124K3 Bypass Coronary Artery, Three Sites to Coronary Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
02124K8 Bypass Coronary Artery, Three Sites to Right Internal Mammary with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
02124K9 Bypass Coronary Artery, Three Sites to Left Internal Mammary with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
02124KC Bypass Coronary Artery, Three Sites to Thoracic Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
02124KF Bypass Coronary Artery, Three Sites to Abdominal Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
02124KW Bypass Coronary Artery, Three Sites to Aorta with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
02124Z3 Bypass Coronary Artery, Three Sites to Coronary Artery, Percutaneous Endoscopic Approach
02124Z8 Bypass Coronary Artery, Three Sites to Right Internal Mammary, Percutaneous Endoscopic Approach
02124Z9 Bypass Coronary Artery, Three Sites to Left Internal Mammary, Percutaneous Endoscopic Approach
02124ZC Bypass Coronary Artery, Three Sites to Thoracic Artery, Percutaneous Endoscopic Approach
02124ZF Bypass Coronary Artery, Three Sites to Abdominal Artery, Percutaneous Endoscopic Approach
0213093 Bypass Coronary Artery, Four or More Sites to Coronary Artery with Autologous Venous Tissue, Open Approach
0213098 Bypass Coronary Artery, Four or More Sites to Right Internal Mammary with Autologous Venous Tissue, Open Approach
0213099 Bypass Coronary Artery, Four or More Sites to Left Internal Mammary with Autologous Venous Tissue, Open Approach
021309C Bypass Coronary Artery, Four or More Sites to Thoracic Artery with Autologous Venous Tissue, Open Approach
021309F Bypass Coronary Artery, Four or More Sites to Abdominal Artery with Autologous Venous Tissue, Open Approach
021309W Bypass Coronary Artery, Four or More Sites to Aorta with Autologous Venous Tissue, Open Approach

ICD-10-PCS based list for MS-DRGs 231-236**Coronary Bypass (232 codes)**

02130A3 Bypass Coronary Artery, Four or More Sites to Coronary Artery with Autologous Arterial Tissue, Open Approach
02130A8 Bypass Coronary Artery, Four or More Sites to Right Internal Mammary with Autologous Arterial Tissue, Open Approach
02130A9 Bypass Coronary Artery, Four or More Sites to Left Internal Mammary with Autologous Arterial Tissue, Open Approach
02130AC Bypass Coronary Artery, Four or More Sites to Thoracic Artery with Autologous Arterial Tissue, Open Approach
02130AF Bypass Coronary Artery, Four or More Sites to Abdominal Artery with Autologous Arterial Tissue, Open Approach
02130AW Bypass Coronary Artery, Four or More Sites to Aorta with Autologous Arterial Tissue, Open Approach
02130J3 Bypass Coronary Artery, Four or More Sites to Coronary Artery with Synthetic Substitute, Open Approach
02130J8 Bypass Coronary Artery, Four or More Sites to Right Internal Mammary with Synthetic Substitute, Open Approach
02130J9 Bypass Coronary Artery, Four or More Sites to Left Internal Mammary with Synthetic Substitute, Open Approach
02130JC Bypass Coronary Artery, Four or More Sites to Thoracic Artery with Synthetic Substitute, Open Approach
02130JF Bypass Coronary Artery, Four or More Sites to Abdominal Artery with Synthetic Substitute, Open Approach
02130JW Bypass Coronary Artery, Four or More Sites to Aorta with Synthetic Substitute, Open Approach
02130K3 Bypass Coronary Artery, Four or More Sites to Coronary Artery with Nonautologous Tissue Substitute, Open Approach
02130K8 Bypass Coronary Artery, Four or More Sites to Right Internal Mammary with Nonautologous Tissue Substitute, Open Approach
02130K9 Bypass Coronary Artery, Four or More Sites to Left Internal Mammary with Nonautologous Tissue Substitute, Open Approach
02130KC Bypass Coronary Artery, Four or More Sites to Thoracic Artery with Nonautologous Tissue Substitute, Open Approach
02130KF Bypass Coronary Artery, Four or More Sites to Abdominal Artery with Nonautologous Tissue Substitute, Open Approach
02130KW Bypass Coronary Artery, Four or More Sites to Aorta with Nonautologous Tissue Substitute, Open Approach
02130Z3 Bypass Coronary Artery, Four or More Sites to Coronary Artery, Open Approach
02130Z8 Bypass Coronary Artery, Four or More Sites to Right Internal Mammary, Open Approach
02130Z9 Bypass Coronary Artery, Four or More Sites to Left Internal Mammary, Open Approach
02130ZC Bypass Coronary Artery, Four or More Sites to Thoracic Artery, Open Approach
02130ZF Bypass Coronary Artery, Four or More Sites to Abdominal Artery, Open Approach
0213493 Bypass Coronary Artery, Four or More Sites to Coronary Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach
0213498 Bypass Coronary Artery, Four or More Sites to Right Internal Mammary with Autologous Venous Tissue, Percutaneous Endoscopic Approach
0213499 Bypass Coronary Artery, Four or More Sites to Left Internal Mammary with Autologous Venous Tissue, Percutaneous Endoscopic Approach
021349C Bypass Coronary Artery, Four or More Sites to Thoracic Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach
021349F Bypass Coronary Artery, Four or More Sites to Abdominal Artery with Autologous Venous Tissue, Percutaneous Endoscopic Approach
021349W Bypass Coronary Artery, Four or More Sites to Aorta with Autologous Venous Tissue, Percutaneous Endoscopic Approach
02134A3 Bypass Coronary Artery, Four or More Sites to Coronary Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach
02134A8 Bypass Coronary Artery, Four or More Sites to Right Internal Mammary with Autologous Arterial Tissue, Percutaneous Endoscopic Approach
02134A9 Bypass Coronary Artery, Four or More Sites to Left Internal Mammary with Autologous Arterial Tissue, Percutaneous Endoscopic Approach
02134AC Bypass Coronary Artery, Four or More Sites to Thoracic Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach
02134AF Bypass Coronary Artery, Four or More Sites to Abdominal Artery with Autologous Arterial Tissue, Percutaneous Endoscopic Approach
02134AW Bypass Coronary Artery, Four or More Sites to Aorta with Autologous Arterial Tissue, Percutaneous Endoscopic Approach

ICD-10-PCS based list for MS-DRGs 231-236**Coronary Bypass (232 codes)**

02134J3 Bypass Coronary Artery, Four or More Sites to Coronary Artery with Synthetic Substitute, Percutaneous Endoscopic Approach
 02134J8 Bypass Coronary Artery, Four or More Sites to Right Internal Mammary with Synthetic Substitute, Percutaneous Endoscopic Approach
 02134J9 Bypass Coronary Artery, Four or More Sites to Left Internal Mammary with Synthetic Substitute, Percutaneous Endoscopic Approach
 02134JC Bypass Coronary Artery, Four or More Sites to Thoracic Artery with Synthetic Substitute, Percutaneous Endoscopic Approach
 02134JF Bypass Coronary Artery, Four or More Sites to Abdominal Artery with Synthetic Substitute, Percutaneous Endoscopic Approach
 02134JW Bypass Coronary Artery, Four or More Sites to Aorta with Synthetic Substitute, Percutaneous Endoscopic Approach
 02134K3 Bypass Coronary Artery, Four or More Sites to Coronary Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
 02134K8 Bypass Coronary Artery, Four or More Sites to Right Internal Mammary with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
 02134K9 Bypass Coronary Artery, Four or More Sites to Left Internal Mammary with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
 02134KC Bypass Coronary Artery, Four or More Sites to Thoracic Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
 02134KF Bypass Coronary Artery, Four or More Sites to Abdominal Artery with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
 02134KW Bypass Coronary Artery, Four or More Sites to Aorta with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
 02134Z3 Bypass Coronary Artery, Four or More Sites to Coronary Artery, Percutaneous Endoscopic Approach
 02134Z8 Bypass Coronary Artery, Four or More Sites to Right Internal Mammary, Percutaneous Endoscopic Approach
 02134Z9 Bypass Coronary Artery, Four or More Sites to Left Internal Mammary, Percutaneous Endoscopic Approach
 02134ZC Bypass Coronary Artery, Four or More Sites to Thoracic Artery, Percutaneous Endoscopic Approach
 02134ZF Bypass Coronary Artery, Four or More Sites to Abdominal Artery, Percutaneous Endoscopic Approach

ICD-9-CM and ICD-10-PCS based versions of MS-DRGs 250-251**ICD-9-CM based list for MS-DRG 250-251****Percutaneous Cardiovascular Procedures without Stent (8 codes)**

00.66 Percutaneous transluminal coronary angioplasty [PTCA] or coronary atherectomy
 35.52 Repair Of Atrial Septal Defect With Prosthesis, Closed Technique
 35.96 Percutaneous Valvuloplasty
 36.09 Other Specified Removal Of Coronary Artery Obstruction
 37.34 Excision Or Destruction Of Other Lesion Or Tissue Of Heart, Other Approach

 37.26 Catheter based invasive electrophysiologic testing
 37.27 Cardiac Mapping
 37.90 Insertion of left atrial appendage device

ICD-9-CM and ICD-10-PCS based versions of MS-DRGs 250-251**ICD-10-PCS based list for MS-DRG 250-251****Percutaneous Cardiovascular Procedures without Stent (136 codes)**

02553ZZ Destruction of Atrial Septum, Percutaneous Approach
 02554ZZ Destruction of Atrial Septum, Percutaneous Endoscopic Approach
 02563ZZ Destruction of Right Atrium, Percutaneous Approach
 02564ZZ Destruction of Right Atrium, Percutaneous Endoscopic Approach
 02573ZZ Destruction of Left Atrium, Percutaneous Approach
 02574ZZ Destruction of Left Atrium, Percutaneous Endoscopic Approach
 02583ZZ Destruction of Conduction Mechanism, Percutaneous Approach
 02584ZZ Destruction of Conduction Mechanism, Percutaneous Endoscopic Approach
 02593ZZ Destruction of Chordae Tendineae, Percutaneous Approach
 02594ZZ Destruction of Chordae Tendineae, Percutaneous Endoscopic Approach
 025F3ZZ Destruction of Aortic Valve, Percutaneous Approach

ICD-10-PCS based list for MS-DRG 250-251**Percutaneous Cardiovascular Procedures without Stent (136 codes)**

025F4ZZ Destruction of Aortic Valve, Percutaneous Endoscopic Approach
025G3ZZ Destruction of Mitral Valve, Percutaneous Approach
025G4ZZ Destruction of Mitral Valve, Percutaneous Endoscopic Approach
025H3ZZ Destruction of Pulmonary Valve, Percutaneous Approach
025H4ZZ Destruction of Pulmonary Valve, Percutaneous Endoscopic Approach
025J3ZZ Destruction of Tricuspid Valve, Percutaneous Approach
025J4ZZ Destruction of Tricuspid Valve, Percutaneous Endoscopic Approach
025K3ZZ Destruction of Right Ventricle, Percutaneous Approach
025K4ZZ Destruction of Right Ventricle, Percutaneous Endoscopic Approach
025L3ZZ Destruction of Left Ventricle, Percutaneous Approach
025L4ZZ Destruction of Left Ventricle, Percutaneous Endoscopic Approach
025M3ZZ Destruction of Ventricular Septum, Percutaneous Approach
025M4ZZ Destruction of Ventricular Septum, Percutaneous Endoscopic Approach
0270346 Dilation of Coronary Artery, One Site, Bifurcation, with Drug-eluting Intraluminal Device, Percutaneous Approach
027034Z Dilation of Coronary Artery, One Site with Drug-eluting Intraluminal Device, Percutaneous Approach
02703D6 Dilation of Coronary Artery, One Site, Bifurcation, with Intraluminal Device, Percutaneous Approach
02703DZ Dilation of Coronary Artery, One Site with Intraluminal Device, Percutaneous Approach
02703Z6 Dilation of Coronary Artery, One Site, Bifurcation, Percutaneous Approach
02703ZZ Dilation of Coronary Artery, One Site, Percutaneous Approach
0270446 Dilation of Coronary Artery, One Site, Bifurcation, with Drug-eluting Intraluminal Device, Percutaneous Endoscopic Approach
027044Z Dilation of Coronary Artery, One Site with Drug-eluting Intraluminal Device, Percutaneous Endoscopic Approach
02704D6 Dilation of Coronary Artery, One Site, Bifurcation, with Intraluminal Device, Percutaneous Endoscopic Approach
02704DZ Dilation of Coronary Artery, One Site with Intraluminal Device, Percutaneous Endoscopic Approach
02704Z6 Dilation of Coronary Artery, One Site, Bifurcation, Percutaneous Endoscopic Approach
02704ZZ Dilation of Coronary Artery, One Site, Percutaneous Endoscopic Approach
0271346 Dilation of Coronary Artery, Two Sites, Bifurcation, with Drug-eluting Intraluminal Device, Percutaneous Approach
027134Z Dilation of Coronary Artery, Two Sites with Drug-eluting Intraluminal Device, Percutaneous Approach
02713D6 Dilation of Coronary Artery, Two Sites, Bifurcation, with Intraluminal Device, Percutaneous Approach
02713DZ Dilation of Coronary Artery, Two Sites with Intraluminal Device, Percutaneous Approach
02713Z6 Dilation of Coronary Artery, Two Sites, Bifurcation, Percutaneous Approach
02713ZZ Dilation of Coronary Artery, Two Sites, Percutaneous Approach
0271446 Dilation of Coronary Artery, Two Sites, Bifurcation, with Drug-eluting Intraluminal Device, Percutaneous Endoscopic Approach
027144Z Dilation of Coronary Artery, Two Sites with Drug-eluting Intraluminal Device, Percutaneous Endoscopic Approach
02714D6 Dilation of Coronary Artery, Two Sites, Bifurcation, with Intraluminal Device, Percutaneous Endoscopic Approach
02714DZ Dilation of Coronary Artery, Two Sites with Intraluminal Device, Percutaneous Endoscopic Approach
02714Z6 Dilation of Coronary Artery, Two Sites, Bifurcation, Percutaneous Endoscopic Approach
02714ZZ Dilation of Coronary Artery, Two Sites, Percutaneous Endoscopic Approach
0272346 Dilation of Coronary Artery, Three Sites, Bifurcation, with Drug-eluting Intraluminal Device, Percutaneous Approach
027234Z Dilation of Coronary Artery, Three Sites with Drug-eluting Intraluminal Device, Percutaneous Approach
02723D6 Dilation of Coronary Artery, Three Sites, Bifurcation, with Intraluminal Device, Percutaneous Approach
02723DZ Dilation of Coronary Artery, Three Sites with Intraluminal Device, Percutaneous Approach
02723Z6 Dilation of Coronary Artery, Three Sites, Bifurcation, Percutaneous Approach
02723ZZ Dilation of Coronary Artery, Three Sites, Percutaneous Approach
0272446 Dilation of Coronary Artery, Three Sites, Bifurcation, with Drug-eluting Intraluminal Device, Percutaneous Endoscopic Approach
027244Z Dilation of Coronary Artery, Three Sites with Drug-eluting Intraluminal Device, Percutaneous Endoscopic Approach
02724D6 Dilation of Coronary Artery, Three Sites, Bifurcation, with Intraluminal Device, Percutaneous Endoscopic Approach
02724DZ Dilation of Coronary Artery, Three Sites with Intraluminal Device, Percutaneous Endoscopic Approach
02724Z6 Dilation of Coronary Artery, Three Sites, Bifurcation, Percutaneous Endoscopic Approach

ICD-10-PCS based list for MS-DRG 250-251**Percutaneous Cardiovascular Procedures without Stent (136 codes)**

02724ZZ Dilation of Coronary Artery, Three Sites, Percutaneous Endoscopic Approach
0273346 Dilation of Coronary Artery, Four or More Sites, Bifurcation, with Drug-eluting Intraluminal Device, Percutaneous Approach
027334Z Dilation of Coronary Artery, Four or More Sites with Drug-eluting Intraluminal Device, Percutaneous Approach
02733D6 Dilation of Coronary Artery, Four or More Sites, Bifurcation, with Intraluminal Device, Percutaneous Approach
02733DZ Dilation of Coronary Artery, Four or More Sites with Intraluminal Device, Percutaneous Approach
02733Z6 Dilation of Coronary Artery, Four or More Sites, Bifurcation, Percutaneous Approach
02733ZZ Dilation of Coronary Artery, Four or More Sites, Percutaneous Approach
0273446 Dilation of Coronary Artery, Four or More Sites, Bifurcation, with Drug-eluting Intraluminal Device, Percutaneous Endoscopic Approach
027344Z Dilation of Coronary Artery, Four or More Sites with Drug-eluting Intraluminal Device, Percutaneous Endoscopic Approach
02734D6 Dilation of Coronary Artery, Four or More Sites, Bifurcation, with Intraluminal Device, Percutaneous Endoscopic Approach
02734DZ Dilation of Coronary Artery, Four or More Sites with Intraluminal Device, Percutaneous Endoscopic Approach
02734Z6 Dilation of Coronary Artery, Four or More Sites, Bifurcation, Percutaneous Endoscopic Approach
02734ZZ Dilation of Coronary Artery, Four or More Sites, Percutaneous Endoscopic Approach
027F34Z Dilation of Aortic Valve with Drug-eluting Intraluminal Device, Percutaneous Approach
027F3DZ Dilation of Aortic Valve with Intraluminal Device, Percutaneous Approach
027F3ZZ Dilation of Aortic Valve, Percutaneous Approach
027F44Z Dilation of Aortic Valve with Drug-eluting Intraluminal Device, Percutaneous Endoscopic Approach
027F4DZ Dilation of Aortic Valve with Intraluminal Device, Percutaneous Endoscopic Approach
027F4ZZ Dilation of Aortic Valve, Percutaneous Endoscopic Approach
027G34Z Dilation of Mitral Valve with Drug-eluting Intraluminal Device, Percutaneous Approach
027G3DZ Dilation of Mitral Valve with Intraluminal Device, Percutaneous Approach
027G3ZZ Dilation of Mitral Valve, Percutaneous Approach
027G44Z Dilation of Mitral Valve with Drug-eluting Intraluminal Device, Percutaneous Endoscopic Approach
027G4DZ Dilation of Mitral Valve with Intraluminal Device, Percutaneous Endoscopic Approach
027G4ZZ Dilation of Mitral Valve, Percutaneous Endoscopic Approach
027H34Z Dilation of Pulmonary Valve with Drug-eluting Intraluminal Device, Percutaneous Approach
027H3DZ Dilation of Pulmonary Valve with Intraluminal Device, Percutaneous Approach
027H3ZZ Dilation of Pulmonary Valve, Percutaneous Approach
027H44Z Dilation of Pulmonary Valve with Drug-eluting Intraluminal Device, Percutaneous Endoscopic Approach
027H4DZ Dilation of Pulmonary Valve with Intraluminal Device, Percutaneous Endoscopic Approach
027H4ZZ Dilation of Pulmonary Valve, Percutaneous Endoscopic Approach
027J34Z Dilation of Tricuspid Valve with Drug-eluting Intraluminal Device, Percutaneous Approach
027J3DZ Dilation of Tricuspid Valve with Intraluminal Device, Percutaneous Approach
027J3ZZ Dilation of Tricuspid Valve, Percutaneous Approach
027J44Z Dilation of Tricuspid Valve with Drug-eluting Intraluminal Device, Percutaneous Endoscopic Approach
027J4DZ Dilation of Tricuspid Valve with Intraluminal Device, Percutaneous Endoscopic Approach
027J4ZZ Dilation of Tricuspid Valve, Percutaneous Endoscopic Approach
02B53ZZ Excision of Atrial Septum, Percutaneous Approach
02B54ZZ Excision of Atrial Septum, Percutaneous Endoscopic Approach
02B63ZZ Excision of Right Atrium, Percutaneous Approach
02B64ZZ Excision of Right Atrium, Percutaneous Endoscopic Approach
02B73ZZ Excision of Left Atrium, Percutaneous Approach
02B74ZZ Excision of Left Atrium, Percutaneous Endoscopic Approach
02B83ZZ Excision of Conduction Mechanism, Percutaneous Approach
02B84ZZ Excision of Conduction Mechanism, Percutaneous Endoscopic Approach
02B93ZZ Excision of Chordae Tendineae, Percutaneous Approach
02B94ZZ Excision of Chordae Tendineae, Percutaneous Endoscopic Approach
02BF3ZZ Excision of Aortic Valve, Percutaneous Approach
02BF4ZZ Excision of Aortic Valve, Percutaneous Endoscopic Approach
02BG3ZZ Excision of Mitral Valve, Percutaneous Approach
02BG4ZZ Excision of Mitral Valve, Percutaneous Endoscopic Approach
02BH3ZZ Excision of Pulmonary Valve, Percutaneous Approach
02BH4ZZ Excision of Pulmonary Valve, Percutaneous Endoscopic Approach

ICD-10-PCS based list for MS-DRG 250-251**Percutaneous Cardiovascular Procedures without Stent (136 codes)**

02BJ3ZZ Excision of Tricuspid Valve, Percutaneous Approach
 02BJ4ZZ Excision of Tricuspid Valve, Percutaneous Endoscopic Approach
 02BM3ZZ Excision of Ventricular Septum, Percutaneous Approach
 02BM4ZZ Excision of Ventricular Septum, Percutaneous Endoscopic Approach
 02C00ZZ Extirpation of Matter from Coronary Artery, One Site, Open Approach
 02C03ZZ Extirpation of Matter from Coronary Artery, One Site, Percutaneous Approach
 02C04ZZ Extirpation of Matter from Coronary Artery, One Site, Percutaneous Endoscopic Approach
 02C10ZZ Extirpation of Matter from Coronary Artery, Two Sites, Open Approach
 02C13ZZ Extirpation of Matter from Coronary Artery, Two Sites, Percutaneous Approach
 02C14ZZ Extirpation of Matter from Coronary Artery, Two Sites, Percutaneous Endoscopic Approach
 02C20ZZ Extirpation of Matter from Coronary Artery, Three Sites, Open Approach
 02C23ZZ Extirpation of Matter from Coronary Artery, Three Sites, Percutaneous Approach
 02C24ZZ Extirpation of Matter from Coronary Artery, Three Sites, Percutaneous Endoscopic Approach
 02C30ZZ Extirpation of Matter from Coronary Artery, Four or More Sites, Open Approach
 02C33ZZ Extirpation of Matter from Coronary Artery, Four or More Sites, Percutaneous Approach
 02C34ZZ Extirpation of Matter from Coronary Artery, Four or More Sites, Percutaneous Endoscopic Approach
 02T83ZZ Resection of Conduction Mechanism, Percutaneous Approach
 02T84ZZ Resection of Conduction Mechanism, Percutaneous Endoscopic Approach
 02U54JZ Supplement Atrial Septum with Synthetic Substitute, Percutaneous Endoscopic Approach

 02K80ZZ Map Conduction Mechanism, Open Approach
 02K83ZZ Map Conduction Mechanism, Percutaneous Approach
 02K84ZZ Map Conduction Mechanism, Percutaneous Endoscopic Approach
 02U74JZ Supplement Left Atrium with Synthetic Substitute, Percutaneous Endoscopic Approach
 4A023FZ Measurement of Cardiac Rhythm, Percutaneous Approach

ICD-9-CM and ICD-10-PCS based versions of MS-DRGs 456-458**ICD-9-CM based list for MS-DRG 456-458****Spinal Fusion Except Cervical (13 codes)**

81.00 Spinal Fusion, Not Otherwise Specified
 81.04 Dorsal And Dorsolumbar Fusion, Anterior Technique
 81.05 Dorsal And Dorsolumbar Fusion, Posterior Technique
 81.06 Lumbar And Lumbosacral Fusion, Anterior Technique
 81.07 Lumbar And Lumbosacral Fusion, Lateral Transverse Process Technique
 81.08 Lumbar And Lumbosacral Fusion, Posterior Technique
 81.30 Refusion Of Spine, Not Otherwise Specified
 81.34 Refusion Of Dorsal And Dorsolumbar Spine, Anterior Technique
 81.35 Refusion Of Dorsal And Dorsolumbar Spine, Posterior Technique
 81.36 Refusion Of Lumbar And Lumbosacral Spine, Anterior Technique
 81.37 Refusion Of Lumbar And Lumbosacral Spine, Lateral Transverse Process Technique
 81.38 Refusion Of Lumbar And Lumbosacral Spine, Posterior Technique
 81.39 Refusion Of Spine, Not Elsewhere Classified

ICD-9-CM and ICD-10-PCS based versions of MS-DRGs 456-458**ICD-10-PCS based list for MS-DRG 456-458****Spinal Fusion Except Cervical (240 codes)**

0RG6040 Fusion of Thoracic Vertebral Joint with Internal Fixation Device, Anterior, Open Approach
 0RG6041 Fusion of Thoracic Vertebral Joint with Internal Fixation Device, Posterior, Open Approach
 0RG6070 Fusion of Thoracic Vertebral Joint with Autologous Tissue Substitute, Anterior, Open Approach
 0RG6071 Fusion of Thoracic Vertebral Joint with Autologous Tissue Substitute, Posterior, Open Approach
 0RG60J0 Fusion of Thoracic Vertebral Joint with Synthetic Substitute, Anterior, Open Approach
 0RG60J1 Fusion of Thoracic Vertebral Joint with Synthetic Substitute, Posterior, Open Approach
 0RG60K0 Fusion of Thoracic Vertebral Joint with Nonautologous Tissue Substitute, Anterior, Open Approach
 0RG60K1 Fusion of Thoracic Vertebral Joint with Nonautologous Tissue Substitute, Posterior, Open Approach
 0RG60Z0 Fusion of Thoracic Vertebral Joint, Anterior, Open Approach
 0RG60Z1 Fusion of Thoracic Vertebral Joint, Posterior, Open Approach
 0RG6340 Fusion of Thoracic Vertebral Joint with Internal Fixation Device, Anterior, Percutaneous Approach
 0RG6341 Fusion of Thoracic Vertebral Joint with Internal Fixation Device, Posterior, Percutaneous Approach

ICD-10-PCS based list for MS-DRG 456-458
Spinal Fusion Except Cervical (240 codes)

0RG6370 Fusion of Thoracic Vertebral Joint with Autologous Tissue Substitute, Anterior, Percutaneous Approach
0RG6371 Fusion of Thoracic Vertebral Joint with Autologous Tissue Substitute, Posterior, Percutaneous Approach
0RG63J0 Fusion of Thoracic Vertebral Joint with Synthetic Substitute, Anterior, Percutaneous Approach
0RG63J1 Fusion of Thoracic Vertebral Joint with Synthetic Substitute, Posterior, Percutaneous Approach
0RG63K0 Fusion of Thoracic Vertebral Joint with Nonautologous Tissue Substitute, Anterior, Percutaneous Approach
0RG63K1 Fusion of Thoracic Vertebral Joint with Nonautologous Tissue Substitute, Posterior, Percutaneous Approach
0RG63Z0 Fusion of Thoracic Vertebral Joint, Anterior, Percutaneous Approach
0RG63Z1 Fusion of Thoracic Vertebral Joint, Posterior, Percutaneous Approach
0RG6440 Fusion of Thoracic Vertebral Joint with Internal Fixation Device, Anterior, Percutaneous Endoscopic Approach
0RG6441 Fusion of Thoracic Vertebral Joint with Internal Fixation Device, Posterior, Percutaneous Endoscopic Approach
0RG6470 Fusion of Thoracic Vertebral Joint with Autologous Tissue Substitute, Anterior, Percutaneous Endoscopic Approach
0RG6471 Fusion of Thoracic Vertebral Joint with Autologous Tissue Substitute, Posterior, Percutaneous Endoscopic Approach
0RG64J0 Fusion of Thoracic Vertebral Joint with Synthetic Substitute, Anterior, Percutaneous Endoscopic Approach
0RG64J1 Fusion of Thoracic Vertebral Joint with Synthetic Substitute, Posterior, Percutaneous Endoscopic Approach
0RG64K0 Fusion of Thoracic Vertebral Joint with Nonautologous Tissue Substitute, Anterior, Percutaneous Endoscopic Approach
0RG64K1 Fusion of Thoracic Vertebral Joint with Nonautologous Tissue Substitute, Posterior, Percutaneous Endoscopic Approach
0RG64Z0 Fusion of Thoracic Vertebral Joint, Anterior, Percutaneous Endoscopic Approach
0RG64Z1 Fusion of Thoracic Vertebral Joint, Posterior, Percutaneous Endoscopic Approach
0RG7040 Fusion of 2 to 7 Thoracic Vertebral Joints with Internal Fixation Device, Anterior, Open Approach
0RG7041 Fusion of 2 to 7 Thoracic Vertebral Joints with Internal Fixation Device, Posterior, Open Approach
0RG7070 Fusion of 2 to 7 Thoracic Vertebral Joints with Autologous Tissue Substitute, Anterior, Open Approach
0RG7071 Fusion of 2 to 7 Thoracic Vertebral Joints with Autologous Tissue Substitute, Posterior, Open Approach
0RG70J0 Fusion of 2 to 7 Thoracic Vertebral Joints with Synthetic Substitute, Anterior, Open Approach
0RG70J1 Fusion of 2 to 7 Thoracic Vertebral Joints with Synthetic Substitute, Posterior, Open Approach
0RG70K0 Fusion of 2 to 7 Thoracic Vertebral Joints with Nonautologous Tissue Substitute, Anterior, Open Approach
0RG70K1 Fusion of 2 to 7 Thoracic Vertebral Joints with Nonautologous Tissue Substitute, Posterior, Open Approach
0RG70Z0 Fusion of 2 to 7 Thoracic Vertebral Joints, Anterior, Open Approach
0RG70Z1 Fusion of 2 to 7 Thoracic Vertebral Joints, Posterior, Open Approach
0RG7340 Fusion of 2 to 7 Thoracic Vertebral Joints with Internal Fixation Device, Anterior, Percutaneous Approach
0RG7341 Fusion of 2 to 7 Thoracic Vertebral Joints with Internal Fixation Device, Posterior, Percutaneous Approach
0RG7370 Fusion of 2 to 7 Thoracic Vertebral Joints with Autologous Tissue Substitute, Anterior, Percutaneous Approach
0RG7371 Fusion of 2 to 7 Thoracic Vertebral Joints with Autologous Tissue Substitute, Posterior, Percutaneous Approach
0RG73J0 Fusion of 2 to 7 Thoracic Vertebral Joints with Synthetic Substitute, Anterior, Percutaneous Approach
0RG73J1 Fusion of 2 to 7 Thoracic Vertebral Joints with Synthetic Substitute, Posterior, Percutaneous Approach
0RG73K0 Fusion of 2 to 7 Thoracic Vertebral Joints with Nonautologous Tissue Substitute, Anterior, Percutaneous Approach
0RG73K1 Fusion of 2 to 7 Thoracic Vertebral Joints with Nonautologous Tissue Substitute, Posterior, Percutaneous Approach
0RG73Z0 Fusion of 2 to 7 Thoracic Vertebral Joints, Anterior, Percutaneous Approach
0RG73Z1 Fusion of 2 to 7 Thoracic Vertebral Joints, Posterior, Percutaneous Approach
0RG7440 Fusion of 2 to 7 Thoracic Vertebral Joints with Internal Fixation Device, Anterior, Percutaneous Endoscopic Approach
0RG7441 Fusion of 2 to 7 Thoracic Vertebral Joints with Internal Fixation Device, Posterior, Percutaneous Endoscopic Approach
0RG7470 Fusion of 2 to 7 Thoracic Vertebral Joints with Autologous Tissue Substitute, Anterior, Percutaneous Endoscopic Approach
0RG7471 Fusion of 2 to 7 Thoracic Vertebral Joints with Autologous Tissue Substitute, Posterior, Percutaneous Endoscopic Approach
0RG74J0 Fusion of 2 to 7 Thoracic Vertebral Joints with Synthetic Substitute, Anterior, Percutaneous Endoscopic Approach
0RG74J1 Fusion of 2 to 7 Thoracic Vertebral Joints with Synthetic Substitute, Posterior, Percutaneous Endoscopic Approach
0RG74K0 Fusion of 2 to 7 Thoracic Vertebral Joints with Nonautologous Tissue Substitute, Anterior, Percutaneous Endoscopic Approach
0RG74K1 Fusion of 2 to 7 Thoracic Vertebral Joints with Nonautologous Tissue Substitute, Posterior, Percutaneous Endoscopic Approach
0RG74Z0 Fusion of 2 to 7 Thoracic Vertebral Joints, Anterior, Percutaneous Endoscopic Approach
0RG74Z1 Fusion of 2 to 7 Thoracic Vertebral Joints, Posterior, Percutaneous Endoscopic Approach
0RG8040 Fusion of 8 or more Thoracic Vertebral Joints with Internal Fixation Device, Anterior, Open Approach
0RG8041 Fusion of 8 or more Thoracic Vertebral Joints with Internal Fixation Device, Posterior, Open Approach
0RG8070 Fusion of 8 or more Thoracic Vertebral Joints with Autologous Tissue Substitute, Anterior, Open Approach
0RG8071 Fusion of 8 or more Thoracic Vertebral Joints with Autologous Tissue Substitute, Posterior, Open Approach
0RG80J0 Fusion of 8 or more Thoracic Vertebral Joints with Synthetic Substitute, Anterior, Open Approach

ICD-10-PCS based list for MS-DRG 456-458
Spinal Fusion Except Cervical (240 codes)

0RG80J1 Fusion of 8 or more Thoracic Vertebral Joints with Synthetic Substitute, Posterior, Open Approach
0RG80K0 Fusion of 8 or more Thoracic Vertebral Joints with Nonautologous Tissue Substitute, Anterior, Open Approach
0RG80K1 Fusion of 8 or more Thoracic Vertebral Joints with Nonautologous Tissue Substitute, Posterior, Open Approach
0RG80Z0 Fusion of 8 or more Thoracic Vertebral Joints, Anterior, Open Approach
0RG80Z1 Fusion of 8 or more Thoracic Vertebral Joints, Posterior, Open Approach
0RG8340 Fusion of 8 or more Thoracic Vertebral Joints with Internal Fixation Device, Anterior, Percutaneous Approach
0RG8341 Fusion of 8 or more Thoracic Vertebral Joints with Internal Fixation Device, Posterior, Percutaneous Approach
0RG8370 Fusion of 8 or more Thoracic Vertebral Joints with Autologous Tissue Substitute, Anterior, Percutaneous Approach
0RG8371 Fusion of 8 or more Thoracic Vertebral Joints with Autologous Tissue Substitute, Posterior, Percutaneous Approach
0RG83J0 Fusion of 8 or more Thoracic Vertebral Joints with Synthetic Substitute, Anterior, Percutaneous Approach
0RG83J1 Fusion of 8 or more Thoracic Vertebral Joints with Synthetic Substitute, Posterior, Percutaneous Approach
0RG83K0 Fusion of 8 or more Thoracic Vertebral Joints with Nonautologous Tissue Substitute, Anterior, Percutaneous Approach
0RG83K1 Fusion of 8 or more Thoracic Vertebral Joints with Nonautologous Tissue Substitute, Posterior, Percutaneous Approach
0RG83Z0 Fusion of 8 or more Thoracic Vertebral Joints, Anterior, Percutaneous Approach
0RG83Z1 Fusion of 8 or more Thoracic Vertebral Joints, Posterior, Percutaneous Approach
0RG8440 Fusion of 8 or more Thoracic Vertebral Joints with Internal Fixation Device, Anterior, Percutaneous Endoscopic Approach
0RG8441 Fusion of 8 or more Thoracic Vertebral Joints with Internal Fixation Device, Posterior, Percutaneous Endoscopic Approach
0RG8470 Fusion of 8 or more Thoracic Vertebral Joints with Autologous Tissue Substitute, Anterior, Percutaneous Endoscopic Approach
0RG8471 Fusion of 8 or more Thoracic Vertebral Joints with Autologous Tissue Substitute, Posterior, Percutaneous Endoscopic Approach
0RG84J0 Fusion of 8 or more Thoracic Vertebral Joints with Synthetic Substitute, Anterior, Percutaneous Endoscopic Approach
0RG84J1 Fusion of 8 or more Thoracic Vertebral Joints with Synthetic Substitute, Posterior, Percutaneous Endoscopic Approach
0RG84K0 Fusion of 8 or more Thoracic Vertebral Joints with Nonautologous Tissue Substitute, Anterior, Percutaneous Endoscopic Approach
0RG84K1 Fusion of 8 or more Thoracic Vertebral Joints with Nonautologous Tissue Substitute, Posterior, Percutaneous Endoscopic Approach
0RG84Z0 Fusion of 8 or more Thoracic Vertebral Joints, Anterior, Percutaneous Endoscopic Approach
0RG84Z1 Fusion of 8 or more Thoracic Vertebral Joints, Posterior, Percutaneous Endoscopic Approach
0RGA040 Fusion of Thoracolumbar Vertebral Joint with Internal Fixation Device, Anterior, Open Approach
0RGA041 Fusion of Thoracolumbar Vertebral Joint with Internal Fixation Device, Posterior, Open Approach
0RGA070 Fusion of Thoracolumbar Vertebral Joint with Autologous Tissue Substitute, Anterior, Open Approach
0RGA071 Fusion of Thoracolumbar Vertebral Joint with Autologous Tissue Substitute, Posterior, Open Approach
0RGA0J0 Fusion of Thoracolumbar Vertebral Joint with Synthetic Substitute, Anterior, Open Approach
0RGA0J1 Fusion of Thoracolumbar Vertebral Joint with Synthetic Substitute, Posterior, Open Approach
0RGA0K0 Fusion of Thoracolumbar Vertebral Joint with Nonautologous Tissue Substitute, Anterior, Open Approach
0RGA0K1 Fusion of Thoracolumbar Vertebral Joint with Nonautologous Tissue Substitute, Posterior, Open Approach
0RGA0Z0 Fusion of Thoracolumbar Vertebral Joint, Anterior, Open Approach
0RGA0Z1 Fusion of Thoracolumbar Vertebral Joint, Posterior, Open Approach
0RGA340 Fusion of Thoracolumbar Vertebral Joint with Internal Fixation Device, Anterior, Percutaneous Approach
0RGA341 Fusion of Thoracolumbar Vertebral Joint with Internal Fixation Device, Posterior, Percutaneous Approach
0RGA370 Fusion of Thoracolumbar Vertebral Joint with Autologous Tissue Substitute, Anterior, Percutaneous Approach
0RGA371 Fusion of Thoracolumbar Vertebral Joint with Autologous Tissue Substitute, Posterior, Percutaneous Approach
0RGA3J0 Fusion of Thoracolumbar Vertebral Joint with Synthetic Substitute, Anterior, Percutaneous Approach
0RGA3J1 Fusion of Thoracolumbar Vertebral Joint with Synthetic Substitute, Posterior, Percutaneous Approach
0RGA3K0 Fusion of Thoracolumbar Vertebral Joint with Nonautologous Tissue Substitute, Anterior, Percutaneous Approach
0RGA3K1 Fusion of Thoracolumbar Vertebral Joint with Nonautologous Tissue Substitute, Posterior, Percutaneous Approach
0RGA3Z0 Fusion of Thoracolumbar Vertebral Joint, Anterior, Percutaneous Approach
0RGA3Z1 Fusion of Thoracolumbar Vertebral Joint, Posterior, Percutaneous Approach
0RGA440 Fusion of Thoracolumbar Vertebral Joint with Internal Fixation Device, Anterior, Percutaneous Endoscopic Approach
0RGA441 Fusion of Thoracolumbar Vertebral Joint with Internal Fixation Device, Posterior, Percutaneous Endoscopic Approach
0RGA470 Fusion of Thoracolumbar Vertebral Joint with Autologous Tissue Substitute, Anterior, Percutaneous Endoscopic Approach

**ICD-10-PCS based list for MS-DRG 456-458
Spinal Fusion Except Cervical (240 codes)**

0RGA471 Fusion of Thoracolumbar Vertebral Joint with Autologous Tissue Substitute, Posterior, Percutaneous Endoscopic Approach
 0RGA4J0 Fusion of Thoracolumbar Vertebral Joint with Synthetic Substitute, Anterior, Percutaneous Endoscopic Approach
 0RGA4J1 Fusion of Thoracolumbar Vertebral Joint with Synthetic Substitute, Posterior, Percutaneous Endoscopic Approach
 0RGA4K0 Fusion of Thoracolumbar Vertebral Joint with Nonautologous Tissue Substitute, Anterior, Percutaneous Endoscopic Approach
 0RGA4K1 Fusion of Thoracolumbar Vertebral Joint with Nonautologous Tissue Substitute, Posterior, Percutaneous Endoscopic Approach
 0RGA4Z0 Fusion of Thoracolumbar Vertebral Joint, Anterior, Percutaneous Endoscopic Approach
 0RGA4Z1 Fusion of Thoracolumbar Vertebral Joint, Posterior, Percutaneous Endoscopic Approach
 0SG0040 Fusion of Lumbar Vertebral Joint with Internal Fixation Device, Anterior, Open Approach
 0SG0041 Fusion of Lumbar Vertebral Joint with Internal Fixation Device, Posterior, Open Approach
 0SG0070 Fusion of Lumbar Vertebral Joint with Autologous Tissue Substitute, Anterior, Open Approach
 0SG0071 Fusion of Lumbar Vertebral Joint with Autologous Tissue Substitute, Posterior, Open Approach
 0SG00J0 Fusion of Lumbar Vertebral Joint with Synthetic Substitute, Anterior, Open Approach
 0SG00J1 Fusion of Lumbar Vertebral Joint with Synthetic Substitute, Posterior, Open Approach
 0SG00K0 Fusion of Lumbar Vertebral Joint with Nonautologous Tissue Substitute, Anterior, Open Approach
 0SG00K1 Fusion of Lumbar Vertebral Joint with Nonautologous Tissue Substitute, Posterior, Open Approach
 0SG00Z0 Fusion of Lumbar Vertebral Joint, Anterior, Open Approach
 0SG00Z1 Fusion of Lumbar Vertebral Joint, Posterior, Open Approach
 0SG0340 Fusion of Lumbar Vertebral Joint with Internal Fixation Device, Anterior, Percutaneous Approach
 0SG0341 Fusion of Lumbar Vertebral Joint with Internal Fixation Device, Posterior, Percutaneous Approach
 0SG0370 Fusion of Lumbar Vertebral Joint with Autologous Tissue Substitute, Anterior, Percutaneous Approach
 0SG0371 Fusion of Lumbar Vertebral Joint with Autologous Tissue Substitute, Posterior, Percutaneous Approach
 0SG03J0 Fusion of Lumbar Vertebral Joint with Synthetic Substitute, Anterior, Percutaneous Approach
 0SG03J1 Fusion of Lumbar Vertebral Joint with Synthetic Substitute, Posterior, Percutaneous Approach
 0SG03K0 Fusion of Lumbar Vertebral Joint with Nonautologous Tissue Substitute, Anterior, Percutaneous Approach
 0SG03K1 Fusion of Lumbar Vertebral Joint with Nonautologous Tissue Substitute, Posterior, Percutaneous Approach
 0SG03Z0 Fusion of Lumbar Vertebral Joint, Anterior, Percutaneous Approach
 0SG03Z1 Fusion of Lumbar Vertebral Joint, Posterior, Percutaneous Approach
 0SG0440 Fusion of Lumbar Vertebral Joint with Internal Fixation Device, Anterior, Percutaneous Endoscopic Approach
 0SG0441 Fusion of Lumbar Vertebral Joint with Internal Fixation Device, Posterior, Percutaneous Endoscopic Approach
 0SG0470 Fusion of Lumbar Vertebral Joint with Autologous Tissue Substitute, Anterior, Percutaneous Endoscopic Approach
 0SG0471 Fusion of Lumbar Vertebral Joint with Autologous Tissue Substitute, Posterior, Percutaneous Endoscopic Approach
 0SG04J0 Fusion of Lumbar Vertebral Joint with Synthetic Substitute, Anterior, Percutaneous Endoscopic Approach
 0SG04J1 Fusion of Lumbar Vertebral Joint with Synthetic Substitute, Posterior, Percutaneous Endoscopic Approach
 0SG04K0 Fusion of Lumbar Vertebral Joint with Nonautologous Tissue Substitute, Anterior, Percutaneous Endoscopic Approach
 0SG04K1 Fusion of Lumbar Vertebral Joint with Nonautologous Tissue Substitute, Posterior, Percutaneous Endoscopic Approach
 0SG04Z0 Fusion of Lumbar Vertebral Joint, Anterior, Percutaneous Endoscopic Approach
 0SG04Z1 Fusion of Lumbar Vertebral Joint, Posterior, Percutaneous Endoscopic Approach
 0SG1040 Fusion of 2 or more Lumbar Vertebral Joints with Internal Fixation Device, Anterior, Open Approach
 0SG1041 Fusion of 2 or more Lumbar Vertebral Joints with Internal Fixation Device, Posterior, Open Approach
 0SG1070 Fusion of 2 or more Lumbar Vertebral Joints with Autologous Tissue Substitute, Anterior, Open Approach
 0SG1071 Fusion of 2 or more Lumbar Vertebral Joints with Autologous Tissue Substitute, Posterior, Open Approach
 0SG10J0 Fusion of 2 or more Lumbar Vertebral Joints with Synthetic Substitute, Anterior, Open Approach
 0SG10J1 Fusion of 2 or more Lumbar Vertebral Joints with Synthetic Substitute, Posterior, Open Approach
 0SG10K0 Fusion of 2 or more Lumbar Vertebral Joints with Nonautologous Tissue Substitute, Anterior, Open Approach
 0SG10K1 Fusion of 2 or more Lumbar Vertebral Joints with Nonautologous Tissue Substitute, Posterior, Open Approach
 0SG10Z0 Fusion of 2 or more Lumbar Vertebral Joints, Anterior, Open Approach
 0SG10Z1 Fusion of 2 or more Lumbar Vertebral Joints, Posterior, Open Approach
 0SG1340 Fusion of 2 or more Lumbar Vertebral Joints with Internal Fixation Device, Anterior, Percutaneous Approach
 0SG1341 Fusion of 2 or more Lumbar Vertebral Joints with Internal Fixation Device, Posterior, Percutaneous Approach
 0SG1370 Fusion of 2 or more Lumbar Vertebral Joints with Autologous Tissue Substitute, Anterior, Percutaneous Approach
 0SG1371 Fusion of 2 or more Lumbar Vertebral Joints with Autologous Tissue Substitute, Posterior, Percutaneous Approach
 0SG13J0 Fusion of 2 or more Lumbar Vertebral Joints with Synthetic Substitute, Anterior, Percutaneous Approach
 0SG13J1 Fusion of 2 or more Lumbar Vertebral Joints with Synthetic Substitute, Posterior, Percutaneous Approach
 0SG13K0 Fusion of 2 or more Lumbar Vertebral Joints with Nonautologous Tissue Substitute, Anterior, Percutaneous Approach
 0SG13K1 Fusion of 2 or more Lumbar Vertebral Joints with Nonautologous Tissue Substitute, Posterior, Percutaneous Approach

ICD-10-PCS based list for MS-DRG 456-458
Spinal Fusion Except Cervical (240 codes)

0SG13K1 Fusion of 2 or more Lumbar Vertebral Joints with Nonautologous Tissue Substitute, Posterior, Percutaneous Approach
0SG13Z0 Fusion of 2 or more Lumbar Vertebral Joints, Anterior, Percutaneous Approach
0SG13Z1 Fusion of 2 or more Lumbar Vertebral Joints, Posterior, Percutaneous Approach
0SG1440 Fusion of 2 or more Lumbar Vertebral Joints with Internal Fixation Device, Anterior, Percutaneous Endoscopic Approach
0SG1441 Fusion of 2 or more Lumbar Vertebral Joints with Internal Fixation Device, Posterior, Percutaneous Endoscopic Approach
0SG1470 Fusion of 2 or more Lumbar Vertebral Joints with Autologous Tissue Substitute, Anterior, Percutaneous Endoscopic Approach
0SG1471 Fusion of 2 or more Lumbar Vertebral Joints with Autologous Tissue Substitute, Posterior, Percutaneous Endoscopic Approach
0SG14J0 Fusion of 2 or more Lumbar Vertebral Joints with Synthetic Substitute, Anterior, Percutaneous Endoscopic Approach
0SG14J1 Fusion of 2 or more Lumbar Vertebral Joints with Synthetic Substitute, Posterior, Percutaneous Endoscopic Approach
0SG14K0 Fusion of 2 or more Lumbar Vertebral Joints with Nonautologous Tissue Substitute, Anterior, Percutaneous Endoscopic Approach
0SG14K1 Fusion of 2 or more Lumbar Vertebral Joints with Nonautologous Tissue Substitute, Posterior, Percutaneous Endoscopic Approach
0SG14Z0 Fusion of 2 or more Lumbar Vertebral Joints, Anterior, Percutaneous Endoscopic Approach
0SG14Z1 Fusion of 2 or more Lumbar Vertebral Joints, Posterior, Percutaneous Endoscopic Approach
0SG3040 Fusion of Lumbosacral Joint with Internal Fixation Device, Anterior, Open Approach
0SG3041 Fusion of Lumbosacral Joint with Internal Fixation Device, Posterior, Open Approach
0SG3070 Fusion of Lumbosacral Joint with Autologous Tissue Substitute, Anterior, Open Approach
0SG3071 Fusion of Lumbosacral Joint with Autologous Tissue Substitute, Posterior, Open Approach
0SG30J0 Fusion of Lumbosacral Joint with Synthetic Substitute, Anterior, Open Approach
0SG30J1 Fusion of Lumbosacral Joint with Synthetic Substitute, Posterior, Open Approach
0SG30K0 Fusion of Lumbosacral Joint with Nonautologous Tissue Substitute, Anterior, Open Approach
0SG30K1 Fusion of Lumbosacral Joint with Nonautologous Tissue Substitute, Posterior, Open Approach
0SG30Z0 Fusion of Lumbosacral Joint, Anterior, Open Approach
0SG30Z1 Fusion of Lumbosacral Joint, Posterior, Open Approach
0SG3340 Fusion of Lumbosacral Joint with Internal Fixation Device, Anterior, Percutaneous Approach
0SG3341 Fusion of Lumbosacral Joint with Internal Fixation Device, Posterior, Percutaneous Approach
0SG3370 Fusion of Lumbosacral Joint with Autologous Tissue Substitute, Anterior, Percutaneous Approach
0SG3371 Fusion of Lumbosacral Joint with Autologous Tissue Substitute, Posterior, Percutaneous Approach
0SG33J0 Fusion of Lumbosacral Joint with Synthetic Substitute, Anterior, Percutaneous Approach
0SG33J1 Fusion of Lumbosacral Joint with Synthetic Substitute, Posterior, Percutaneous Approach
0SG33K0 Fusion of Lumbosacral Joint with Nonautologous Tissue Substitute, Anterior, Percutaneous Approach
0SG33K1 Fusion of Lumbosacral Joint with Nonautologous Tissue Substitute, Posterior, Percutaneous Approach
0SG33Z0 Fusion of Lumbosacral Joint, Anterior, Percutaneous Approach
0SG33Z1 Fusion of Lumbosacral Joint, Posterior, Percutaneous Approach
0SG3440 Fusion of Lumbosacral Joint with Internal Fixation Device, Anterior, Percutaneous Endoscopic Approach
0SG3441 Fusion of Lumbosacral Joint with Internal Fixation Device, Posterior, Percutaneous Endoscopic Approach
0SG3470 Fusion of Lumbosacral Joint with Autologous Tissue Substitute, Anterior, Percutaneous Endoscopic Approach
0SG3471 Fusion of Lumbosacral Joint with Autologous Tissue Substitute, Posterior, Percutaneous Endoscopic Approach
0SG34J0 Fusion of Lumbosacral Joint with Synthetic Substitute, Anterior, Percutaneous Endoscopic Approach
0SG34J1 Fusion of Lumbosacral Joint with Synthetic Substitute, Posterior, Percutaneous Endoscopic Approach
0SG34K0 Fusion of Lumbosacral Joint with Nonautologous Tissue Substitute, Anterior, Percutaneous Endoscopic Approach
0SG34K1 Fusion of Lumbosacral Joint with Nonautologous Tissue Substitute, Posterior, Percutaneous Endoscopic Approach
0SG34Z0 Fusion of Lumbosacral Joint, Anterior, Percutaneous Endoscopic Approach
0SG34Z1 Fusion of Lumbosacral Joint, Posterior, Percutaneous Endoscopic Approach
0SG504Z Fusion of Sacrococcygeal Joint with Internal Fixation Device, Open Approach
0SG507Z Fusion of Sacrococcygeal Joint with Autologous Tissue Substitute, Open Approach
0SG50JZ Fusion of Sacrococcygeal Joint with Synthetic Substitute, Open Approach
0SG50KZ Fusion of Sacrococcygeal Joint with Nonautologous Tissue Substitute, Open Approach
0SG50ZZ Fusion of Sacrococcygeal Joint, Open Approach
0SG534Z Fusion of Sacrococcygeal Joint with Internal Fixation Device, Percutaneous Approach
0SG537Z Fusion of Sacrococcygeal Joint with Autologous Tissue Substitute, Percutaneous Approach
0SG53JZ Fusion of Sacrococcygeal Joint with Synthetic Substitute, Percutaneous Approach
0SG53KZ Fusion of Sacrococcygeal Joint with Nonautologous Tissue Substitute, Percutaneous Approach

**ICD-10-PCS based list for MS-DRG 456-458
Spinal Fusion Except Cervical (240 codes)**

0SG53ZZ Fusion of Sacrococcygeal Joint, Percutaneous Approach
 0SG544Z Fusion of Sacrococcygeal Joint with Internal Fixation Device, Percutaneous Endoscopic Approach
 0SG547Z Fusion of Sacrococcygeal Joint with Autologous Tissue Substitute, Percutaneous Endoscopic Approach
 0SG54JZ Fusion of Sacrococcygeal Joint with Synthetic Substitute, Percutaneous Endoscopic Approach
 0SG54KZ Fusion of Sacrococcygeal Joint with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
 0SG54ZZ Fusion of Sacrococcygeal Joint, Percutaneous Endoscopic Approach
 0SG604Z Fusion of Coccygeal Joint with Internal Fixation Device, Open Approach
 0SG607Z Fusion of Coccygeal Joint with Autologous Tissue Substitute, Open Approach
 0SG60JZ Fusion of Coccygeal Joint with Synthetic Substitute, Open Approach
 0SG60KZ Fusion of Coccygeal Joint with Nonautologous Tissue Substitute, Open Approach
 0SG60ZZ Fusion of Coccygeal Joint, Open Approach
 0SG634Z Fusion of Coccygeal Joint with Internal Fixation Device, Percutaneous Approach
 0SG637Z Fusion of Coccygeal Joint with Autologous Tissue Substitute, Percutaneous Approach
 0SG63JZ Fusion of Coccygeal Joint with Synthetic Substitute, Percutaneous Approach
 0SG63KZ Fusion of Coccygeal Joint with Nonautologous Tissue Substitute, Percutaneous Approach
 0SG63ZZ Fusion of Coccygeal Joint, Percutaneous Approach
 0SG644Z Fusion of Coccygeal Joint with Internal Fixation Device, Percutaneous Endoscopic Approach
 0SG647Z Fusion of Coccygeal Joint with Autologous Tissue Substitute, Percutaneous Endoscopic Approach
 0SG64JZ Fusion of Coccygeal Joint with Synthetic Substitute, Percutaneous Endoscopic Approach
 0SG64KZ Fusion of Coccygeal Joint with Nonautologous Tissue Substitute, Percutaneous Endoscopic Approach
 0SG64ZZ Fusion of Coccygeal Joint, Percutaneous Endoscopic Approach

ICD-9-CM and ICD-10-PCS based versions of MS-DRGs 463-465

ICD-9-CM based list for MS-DRGs 463-465

Wound Debridement and Skin Graft Except Hand, for Musculoskeletal and Connective Tissue Disorders (13 codes)

86.22 Excisional Debridement Of Wound, Infection, Or Burn
 86.60 Free Skin Graft, Not Otherwise Specified
 86.63 Full-Thickness Skin Graft To Other Sites
 86.65 Heterograft To Skin
 86.66 Homograft To Skin
 86.67 Dermal Regenerative Graft
 86.69 Other Skin Graft To Other Sites
 86.70 Pedicle Or Flap Graft, Not Otherwise Specified
 86.71 Cutting And Preparation Of Pedicle Grafts Or Flaps
 86.72 Advancement Of Pedicle Graft
 86.74 Attachment Of Pedicle Or Flap Graft To Other Sites
 86.75 Revision Of Pedicle Or Flap Graft
 86.93 Insertion Of Tissue Expander

ICD-9-CM and ICD-10-PCS based versions of MS-DRGs 463-465

ICD-10-PCS based list for MS-DRGs 463-465

Wound Debridement and Skin Graft Except Hand, for Musculoskeletal and Connective Tissue Disorders (378 codes)

0H80XZZ Division of Scalp Skin, External Approach
 0H81XZZ Division of Face Skin, External Approach
 0H84XZZ Division of Neck Skin, External Approach
 0H85XZZ Division of Chest Skin, External Approach
 0H86XZZ Division of Back Skin, External Approach
 0H87XZZ Division of Abdomen Skin, External Approach
 0H88XZZ Division of Buttock Skin, External Approach
 0H8AXZZ Division of Genitalia Skin, External Approach
 0H8BXZZ Division of Right Upper Arm Skin, External Approach
 0H8CXZZ Division of Left Upper Arm Skin, External Approach
 0H8DXZZ Division of Right Lower Arm Skin, External Approach
 0H8EXZZ Division of Left Lower Arm Skin, External Approach
 0H8FXZZ Division of Right Hand Skin, External Approach
 0H8GXZZ Division of Left Hand Skin, External Approach
 0H8HXZZ Division of Right Upper Leg Skin, External Approach

ICD-10-PCS based list for MS-DRGs 463-465**Wound Debridement and Skin Graft Except Hand, for Musculoskeletal and Connective Tissue Disorders (378 codes)**

0H8JXZZ Division of Left Upper Leg Skin, External Approach
0H8KXZZ Division of Right Lower Leg Skin, External Approach
0H8LXZZ Division of Left Lower Leg Skin, External Approach
0H8MXZZ Division of Right Foot Skin, External Approach
0H8NXZZ Division of Left Foot Skin, External Approach
0HB0XZZ Excision of Scalp Skin, External Approach
0HB1XZZ Excision of Face Skin, External Approach
0HB4XZZ Excision of Neck Skin, External Approach
0HB5XZZ Excision of Chest Skin, External Approach
0HB6XZZ Excision of Back Skin, External Approach
0HB7XZZ Excision of Abdomen Skin, External Approach
0HB8XZZ Excision of Buttock Skin, External Approach
0HBAXZZ Excision of Genitalia Skin, External Approach
0HBBXZZ Excision of Right Upper Arm Skin, External Approach
0HBCXZZ Excision of Left Upper Arm Skin, External Approach
0HBDXZZ Excision of Right Lower Arm Skin, External Approach
0HBEXZZ Excision of Left Lower Arm Skin, External Approach
0HBFXZZ Excision of Right Hand Skin, External Approach
0HBGXZZ Excision of Left Hand Skin, External Approach
0HBHXZZ Excision of Right Upper Leg Skin, External Approach
0HBJXZZ Excision of Left Upper Leg Skin, External Approach
0HBKXZZ Excision of Right Lower Leg Skin, External Approach
0HBLXZZ Excision of Left Lower Leg Skin, External Approach
0HBMXZZ Excision of Right Foot Skin, External Approach
0HBNXZZ Excision of Left Foot Skin, External Approach
0HR0X73 Replacement of Scalp Skin with Autologous Tissue Substitute, Full Thickness, External Approach
0HR0X74 Replacement of Scalp Skin with Autologous Tissue Substitute, Partial Thickness, External Approach
0HR0XJ3 Replacement of Scalp Skin with Synthetic Substitute, Full Thickness, External Approach
0HR0XJ4 Replacement of Scalp Skin with Synthetic Substitute, Partial Thickness, External Approach
0HR0XJZ Replacement of Scalp Skin with Synthetic Substitute, External Approach
0HR0XK3 Replacement of Scalp Skin with Nonautologous Tissue Substitute, Full Thickness, External Approach
0HR0XK4 Replacement of Scalp Skin with Nonautologous Tissue Substitute, Partial Thickness, External Approach
0HR1X73 Replacement of Face Skin with Autologous Tissue Substitute, Full Thickness, External Approach
0HR1X74 Replacement of Face Skin with Autologous Tissue Substitute, Partial Thickness, External Approach
0HR1XJ3 Replacement of Face Skin with Synthetic Substitute, Full Thickness, External Approach
0HR1XJ4 Replacement of Face Skin with Synthetic Substitute, Partial Thickness, External Approach
0HR1XJZ Replacement of Face Skin with Synthetic Substitute, External Approach
0HR1XK3 Replacement of Face Skin with Nonautologous Tissue Substitute, Full Thickness, External Approach
0HR1XK4 Replacement of Face Skin with Nonautologous Tissue Substitute, Partial Thickness, External Approach
0HR4X73 Replacement of Neck Skin with Autologous Tissue Substitute, Full Thickness, External Approach
0HR4X74 Replacement of Neck Skin with Autologous Tissue Substitute, Partial Thickness, External Approach
0HR4XJ3 Replacement of Neck Skin with Synthetic Substitute, Full Thickness, External Approach
0HR4XJ4 Replacement of Neck Skin with Synthetic Substitute, Partial Thickness, External Approach
0HR4XJZ Replacement of Neck Skin with Synthetic Substitute, External Approach
0HR4XK3 Replacement of Neck Skin with Nonautologous Tissue Substitute, Full Thickness, External Approach
0HR4XK4 Replacement of Neck Skin with Nonautologous Tissue Substitute, Partial Thickness, External Approach
0HR5X73 Replacement of Chest Skin with Autologous Tissue Substitute, Full Thickness, External Approach
0HR5X74 Replacement of Chest Skin with Autologous Tissue Substitute, Partial Thickness, External Approach
0HR5XJ3 Replacement of Chest Skin with Synthetic Substitute, Full Thickness, External Approach
0HR5XJ4 Replacement of Chest Skin with Synthetic Substitute, Partial Thickness, External Approach
0HR5XJZ Replacement of Chest Skin with Synthetic Substitute, External Approach
0HR5XK3 Replacement of Chest Skin with Nonautologous Tissue Substitute, Full Thickness, External Approach
0HR5XK4 Replacement of Chest Skin with Nonautologous Tissue Substitute, Partial Thickness, External Approach
0HR6X73 Replacement of Back Skin with Autologous Tissue Substitute, Full Thickness, External Approach
0HR6X74 Replacement of Back Skin with Autologous Tissue Substitute, Partial Thickness, External Approach
0HR6XJ3 Replacement of Back Skin with Synthetic Substitute, Full Thickness, External Approach
0HR6XJ4 Replacement of Back Skin with Synthetic Substitute, Partial Thickness, External Approach
0HR6XJZ Replacement of Back Skin with Synthetic Substitute, External Approach
0HR6XK3 Replacement of Back Skin with Nonautologous Tissue Substitute, Full Thickness, External Approach
0HR6XK4 Replacement of Back Skin with Nonautologous Tissue Substitute, Partial Thickness, External Approach

ICD-10-PCS based list for MS-DRGs 463-465**Wound Debridement and Skin Graft Except Hand, for Musculoskeletal and Connective Tissue Disorders (378 codes)**

0HR7X73 Replacement of Abdomen Skin with Autologous Tissue Substitute, Full Thickness, External Approach
0HR7X74 Replacement of Abdomen Skin with Autologous Tissue Substitute, Partial Thickness, External Approach
0HR7XJ3 Replacement of Abdomen Skin with Synthetic Substitute, Full Thickness, External Approach
0HR7XJ4 Replacement of Abdomen Skin with Synthetic Substitute, Partial Thickness, External Approach
0HR7XJZ Replacement of Abdomen Skin with Synthetic Substitute, External Approach
0HR7XK3 Replacement of Abdomen Skin with Nonautologous Tissue Substitute, Full Thickness, External Approach
0HR7XK4 Replacement of Abdomen Skin with Nonautologous Tissue Substitute, Partial Thickness, External Approach
0HR8X73 Replacement of Buttock Skin with Autologous Tissue Substitute, Full Thickness, External Approach
0HR8X74 Replacement of Buttock Skin with Autologous Tissue Substitute, Partial Thickness, External Approach
0HR8XJ3 Replacement of Buttock Skin with Synthetic Substitute, Full Thickness, External Approach
0HR8XJ4 Replacement of Buttock Skin with Synthetic Substitute, Partial Thickness, External Approach
0HR8XJZ Replacement of Buttock Skin with Synthetic Substitute, External Approach
0HR8XK3 Replacement of Buttock Skin with Nonautologous Tissue Substitute, Full Thickness, External Approach
0HR8XK4 Replacement of Buttock Skin with Nonautologous Tissue Substitute, Partial Thickness, External Approach
0HRAX73 Replacement of Genitalia Skin with Autologous Tissue Substitute, Full Thickness, External Approach
0HRAX74 Replacement of Genitalia Skin with Autologous Tissue Substitute, Partial Thickness, External Approach
0HRAXJ3 Replacement of Genitalia Skin with Synthetic Substitute, Full Thickness, External Approach
0HRAXJ4 Replacement of Genitalia Skin with Synthetic Substitute, Partial Thickness, External Approach
0HRAXJZ Replacement of Genitalia Skin with Synthetic Substitute, External Approach
0HRAXK3 Replacement of Genitalia Skin with Nonautologous Tissue Substitute, Full Thickness, External Approach
0HRAXK4 Replacement of Genitalia Skin with Nonautologous Tissue Substitute, Partial Thickness, External Approach
0HRBX73 Replacement of Right Upper Arm Skin with Autologous Tissue Substitute, Full Thickness, External Approach
0HRBX74 Replacement of Right Upper Arm Skin with Autologous Tissue Substitute, Partial Thickness, External Approach
0HRBXJ3 Replacement of Right Upper Arm Skin with Synthetic Substitute, Full Thickness, External Approach
0HRBXJ4 Replacement of Right Upper Arm Skin with Synthetic Substitute, Partial Thickness, External Approach
0HRBXJZ Replacement of Right Upper Arm Skin with Synthetic Substitute, External Approach
0HRBXK3 Replacement of Right Upper Arm Skin with Nonautologous Tissue Substitute, Full Thickness, External Approach
0HRBXK4 Replacement of Right Upper Arm Skin with Nonautologous Tissue Substitute, Partial Thickness, External Approach
0HRCX73 Replacement of Left Upper Arm Skin with Autologous Tissue Substitute, Full Thickness, External Approach
0HRCX74 Replacement of Left Upper Arm Skin with Autologous Tissue Substitute, Partial Thickness, External Approach
0HRCXJ3 Replacement of Left Upper Arm Skin with Synthetic Substitute, Full Thickness, External Approach
0HRCXJ4 Replacement of Left Upper Arm Skin with Synthetic Substitute, Partial Thickness, External Approach
0HRCXJZ Replacement of Left Upper Arm Skin with Synthetic Substitute, External Approach
0HRCXK3 Replacement of Left Upper Arm Skin with Nonautologous Tissue Substitute, Full Thickness, External Approach
0HRCXK4 Replacement of Left Upper Arm Skin with Nonautologous Tissue Substitute, Partial Thickness, External Approach
0HRDX73 Replacement of Right Lower Arm Skin with Autologous Tissue Substitute, Full Thickness, External Approach
0HRDX74 Replacement of Right Lower Arm Skin with Autologous Tissue Substitute, Partial Thickness, External Approach
0HRDXJ3 Replacement of Right Lower Arm Skin with Synthetic Substitute, Full Thickness, External Approach
0HRDXJ4 Replacement of Right Lower Arm Skin with Synthetic Substitute, Partial Thickness, External Approach
0HRDXJZ Replacement of Right Lower Arm Skin with Synthetic Substitute, External Approach
0HRDXK3 Replacement of Right Lower Arm Skin with Nonautologous Tissue Substitute, Full Thickness, External Approach
0HRDXK4 Replacement of Right Lower Arm Skin with Nonautologous Tissue Substitute, Partial Thickness, External Approach
0HREX73 Replacement of Left Lower Arm Skin with Autologous Tissue Substitute, Full Thickness, External Approach
0HREX74 Replacement of Left Lower Arm Skin with Autologous Tissue Substitute, Partial Thickness, External Approach
0HREXJ3 Replacement of Left Lower Arm Skin with Synthetic Substitute, Full Thickness, External Approach
0HREXJ4 Replacement of Left Lower Arm Skin with Synthetic Substitute, Partial Thickness, External Approach
0HREXJZ Replacement of Left Lower Arm Skin with Synthetic Substitute, External Approach
0HREXK3 Replacement of Left Lower Arm Skin with Nonautologous Tissue Substitute, Full Thickness, External Approach
0HREXK4 Replacement of Left Lower Arm Skin with Nonautologous Tissue Substitute, Partial Thickness, External Approach
0HRFXJ3 Replacement of Right Hand Skin with Synthetic Substitute, Full Thickness, External Approach
0HRFXJ4 Replacement of Right Hand Skin with Synthetic Substitute, Partial Thickness, External Approach
0HRFXJZ Replacement of Right Hand Skin with Synthetic Substitute, External Approach
0HRFXK3 Replacement of Right Hand Skin with Nonautologous Tissue Substitute, Full Thickness, External Approach
0HRFXK4 Replacement of Right Hand Skin with Nonautologous Tissue Substitute, Partial Thickness, External Approach
0HRGXJ3 Replacement of Left Hand Skin with Synthetic Substitute, Full Thickness, External Approach
0HRGXJ4 Replacement of Left Hand Skin with Synthetic Substitute, Partial Thickness, External Approach
0HRGXJZ Replacement of Left Hand Skin with Synthetic Substitute, External Approach
0HRGXK3 Replacement of Left Hand Skin with Nonautologous Tissue Substitute, Full Thickness, External Approach

ICD-10-PCS based list for MS-DRGs 463-465**Wound Debridement and Skin Graft Except Hand, for Musculoskeletal and Connective Tissue Disorders (378 codes)**

0HRGXK4 Replacement of Left Hand Skin with Nonautologous Tissue Substitute, Partial Thickness, External Approach
0HRHX73 Replacement of Right Upper Leg Skin with Autologous Tissue Substitute, Full Thickness, External Approach
0HRHX74 Replacement of Right Upper Leg Skin with Autologous Tissue Substitute, Partial Thickness, External Approach
0HRHXJ3 Replacement of Right Upper Leg Skin with Synthetic Substitute, Full Thickness, External Approach
0HRHXJ4 Replacement of Right Upper Leg Skin with Synthetic Substitute, Partial Thickness, External Approach
0HRHXJZ Replacement of Right Upper Leg Skin with Synthetic Substitute, External Approach
0HRHXK3 Replacement of Right Upper Leg Skin with Nonautologous Tissue Substitute, Full Thickness, External Approach
0HRHXK4 Replacement of Right Upper Leg Skin with Nonautologous Tissue Substitute, Partial Thickness, External Approach
0HRJX73 Replacement of Left Upper Leg Skin with Autologous Tissue Substitute, Full Thickness, External Approach
0HRJX74 Replacement of Left Upper Leg Skin with Autologous Tissue Substitute, Partial Thickness, External Approach
0HRJXJ3 Replacement of Left Upper Leg Skin with Synthetic Substitute, Full Thickness, External Approach
0HRJXJ4 Replacement of Left Upper Leg Skin with Synthetic Substitute, Partial Thickness, External Approach
0HRJXJZ Replacement of Left Upper Leg Skin with Synthetic Substitute, External Approach
0HRJXK3 Replacement of Left Upper Leg Skin with Nonautologous Tissue Substitute, Full Thickness, External Approach
0HRJXK4 Replacement of Left Upper Leg Skin with Nonautologous Tissue Substitute, Partial Thickness, External Approach
0HRKX73 Replacement of Right Lower Leg Skin with Autologous Tissue Substitute, Full Thickness, External Approach
0HRKX74 Replacement of Right Lower Leg Skin with Autologous Tissue Substitute, Partial Thickness, External Approach
0HRKXJ3 Replacement of Right Lower Leg Skin with Synthetic Substitute, Full Thickness, External Approach
0HRKXJ4 Replacement of Right Lower Leg Skin with Synthetic Substitute, Partial Thickness, External Approach
0HRKXJZ Replacement of Right Lower Leg Skin with Synthetic Substitute, External Approach
0HRKXK3 Replacement of Right Lower Leg Skin with Nonautologous Tissue Substitute, Full Thickness, External Approach
0HRKXK4 Replacement of Right Lower Leg Skin with Nonautologous Tissue Substitute, Partial Thickness, External Approach
0HRLX73 Replacement of Left Lower Leg Skin with Autologous Tissue Substitute, Full Thickness, External Approach
0HRLX74 Replacement of Left Lower Leg Skin with Autologous Tissue Substitute, Partial Thickness, External Approach
0HRLXJ3 Replacement of Left Lower Leg Skin with Synthetic Substitute, Full Thickness, External Approach
0HRLXJ4 Replacement of Left Lower Leg Skin with Synthetic Substitute, Partial Thickness, External Approach
0HRLXJZ Replacement of Left Lower Leg Skin with Synthetic Substitute, External Approach
0HRLXK3 Replacement of Left Lower Leg Skin with Nonautologous Tissue Substitute, Full Thickness, External Approach
0HRLXK4 Replacement of Left Lower Leg Skin with Nonautologous Tissue Substitute, Partial Thickness, External Approach
0HRMX73 Replacement of Right Foot Skin with Autologous Tissue Substitute, Full Thickness, External Approach
0HRMX74 Replacement of Right Foot Skin with Autologous Tissue Substitute, Partial Thickness, External Approach
0HRMXJ3 Replacement of Right Foot Skin with Synthetic Substitute, Full Thickness, External Approach
0HRMXJ4 Replacement of Right Foot Skin with Synthetic Substitute, Partial Thickness, External Approach
0HRMXJZ Replacement of Right Foot Skin with Synthetic Substitute, External Approach
0HRMXK3 Replacement of Right Foot Skin with Nonautologous Tissue Substitute, Full Thickness, External Approach
0HRMXK4 Replacement of Right Foot Skin with Nonautologous Tissue Substitute, Partial Thickness, External Approach
0HRNX73 Replacement of Left Foot Skin with Autologous Tissue Substitute, Full Thickness, External Approach
0HRNX74 Replacement of Left Foot Skin with Autologous Tissue Substitute, Partial Thickness, External Approach
0HRNXJ3 Replacement of Left Foot Skin with Synthetic Substitute, Full Thickness, External Approach
0HRNXJ4 Replacement of Left Foot Skin with Synthetic Substitute, Partial Thickness, External Approach
0HRNXJZ Replacement of Left Foot Skin with Synthetic Substitute, External Approach
0HRNXK3 Replacement of Left Foot Skin with Nonautologous Tissue Substitute, Full Thickness, External Approach
0HRNXK4 Replacement of Left Foot Skin with Nonautologous Tissue Substitute, Partial Thickness, External Approach
0HX0XZZ Transfer Scalp Skin, External Approach
0HX1XZZ Transfer Face Skin, External Approach
0HX4XZZ Transfer Neck Skin, External Approach
0HX5XZZ Transfer Chest Skin, External Approach
0HX6XZZ Transfer Back Skin, External Approach
0HX7XZZ Transfer Abdomen Skin, External Approach
0HX8XZZ Transfer Buttock Skin, External Approach
0HMAXZZ Transfer Genitalia Skin, External Approach
0HXBZZ Transfer Right Upper Arm Skin, External Approach
0HXCZZ Transfer Left Upper Arm Skin, External Approach
0HDXZZ Transfer Right Lower Arm Skin, External Approach
0HSEXZZ Transfer Left Lower Arm Skin, External Approach
0HFXZZ Transfer Right Hand Skin, External Approach
0HGXZZ Transfer Left Hand Skin, External Approach
0HXXZZ Transfer Right Upper Leg Skin, External Approach

ICD-10-PCS based list for MS-DRGs 463-465**Wound Debridement and Skin Graft Except Hand, for Musculoskeletal and Connective Tissue Disorders (378 codes)**

0HXJXZZ Transfer Left Upper Leg Skin, External Approach
0HXXKZZ Transfer Right Lower Leg Skin, External Approach
0HXLXZZ Transfer Left Lower Leg Skin, External Approach
0HXXMZZ Transfer Right Foot Skin, External Approach
0HXXNZZ Transfer Left Foot Skin, External Approach
0JB00ZZ Excision of Scalp Subcutaneous Tissue and Fascia, Open Approach
0JB10ZZ Excision of Face Subcutaneous Tissue and Fascia, Open Approach
0JB40ZZ Excision of Anterior Neck Subcutaneous Tissue and Fascia, Open Approach
0JB50ZZ Excision of Posterior Neck Subcutaneous Tissue and Fascia, Open Approach
0JB60ZZ Excision of Chest Subcutaneous Tissue and Fascia, Open Approach
0JB70ZZ Excision of Back Subcutaneous Tissue and Fascia, Open Approach
0JB80ZZ Excision of Abdomen Subcutaneous Tissue and Fascia, Open Approach
0JB90ZZ Excision of Buttock Subcutaneous Tissue and Fascia, Open Approach
0JBB0ZZ Excision of Perineum Subcutaneous Tissue and Fascia, Open Approach
0JBC0ZZ Excision of Pelvic Region Subcutaneous Tissue and Fascia, Open Approach
0JBD0ZZ Excision of Right Upper Arm Subcutaneous Tissue and Fascia, Open Approach
0JBF0ZZ Excision of Left Upper Arm Subcutaneous Tissue and Fascia, Open Approach
0JBG0ZZ Excision of Right Lower Arm Subcutaneous Tissue and Fascia, Open Approach
0JBH0ZZ Excision of Left Lower Arm Subcutaneous Tissue and Fascia, Open Approach
0JBL0ZZ Excision of Right Upper Leg Subcutaneous Tissue and Fascia, Open Approach
0JBM0ZZ Excision of Left Upper Leg Subcutaneous Tissue and Fascia, Open Approach
0JBN0ZZ Excision of Right Lower Leg Subcutaneous Tissue and Fascia, Open Approach
0JBP0ZZ Excision of Left Lower Leg Subcutaneous Tissue and Fascia, Open Approach
0JBQ0ZZ Excision of Right Foot Subcutaneous Tissue and Fascia, Open Approach
0JBR0ZZ Excision of Left Foot Subcutaneous Tissue and Fascia, Open Approach
0JH00NZ Insertion of Tissue Expander into Scalp Subcutaneous Tissue and Fascia, Open Approach
0JH03NZ Insertion of Tissue Expander into Scalp Subcutaneous Tissue and Fascia, Percutaneous Approach
0JH10NZ Insertion of Tissue Expander into Face Subcutaneous Tissue and Fascia, Open Approach
0JH13NZ Insertion of Tissue Expander into Face Subcutaneous Tissue and Fascia, Percutaneous Approach
0JH40NZ Insertion of Tissue Expander into Anterior Neck Subcutaneous Tissue and Fascia, Open Approach
0JH43NZ Insertion of Tissue Expander into Anterior Neck Subcutaneous Tissue and Fascia, Percutaneous Approach
0JH50NZ Insertion of Tissue Expander into Posterior Neck Subcutaneous Tissue and Fascia, Open Approach
0JH53NZ Insertion of Tissue Expander into Posterior Neck Subcutaneous Tissue and Fascia, Percutaneous Approach
0JH60NZ Insertion of Tissue Expander into Chest Subcutaneous Tissue and Fascia, Open Approach
0JH63NZ Insertion of Tissue Expander into Chest Subcutaneous Tissue and Fascia, Percutaneous Approach
0JH70NZ Insertion of Tissue Expander into Back Subcutaneous Tissue and Fascia, Open Approach
0JH73NZ Insertion of Tissue Expander into Back Subcutaneous Tissue and Fascia, Percutaneous Approach
0JH80NZ Insertion of Tissue Expander into Abdomen Subcutaneous Tissue and Fascia, Open Approach
0JH83NZ Insertion of Tissue Expander into Abdomen Subcutaneous Tissue and Fascia, Percutaneous Approach
0JH90NZ Insertion of Tissue Expander into Buttock Subcutaneous Tissue and Fascia, Open Approach
0JH93NZ Insertion of Tissue Expander into Buttock Subcutaneous Tissue and Fascia, Percutaneous Approach
0JHB0NZ Insertion of Tissue Expander into Perineum Subcutaneous Tissue and Fascia, Open Approach
0JHB3NZ Insertion of Tissue Expander into Perineum Subcutaneous Tissue and Fascia, Percutaneous Approach
0JHC0NZ Insertion of Tissue Expander into Pelvic Region Subcutaneous Tissue and Fascia, Open Approach
0JHC3NZ Insertion of Tissue Expander into Pelvic Region Subcutaneous Tissue and Fascia, Percutaneous Approach
0JHD0NZ Insertion of Tissue Expander into Right Upper Arm Subcutaneous Tissue and Fascia, Open Approach
0JHD3NZ Insertion of Tissue Expander into Right Upper Arm Subcutaneous Tissue and Fascia, Percutaneous Approach
0JHF0NZ Insertion of Tissue Expander into Left Upper Arm Subcutaneous Tissue and Fascia, Open Approach
0JHF3NZ Insertion of Tissue Expander into Left Upper Arm Subcutaneous Tissue and Fascia, Percutaneous Approach

ICD-9-CM and ICD-10-CM based versions of MS-DRG 533-534**ICD-9-CM based list for MS-DRG 533-534****Fractures of Femur (14 codes)**

821.00 Fracture of unspecified part of femur, closed
821.01 Fracture of shaft of femur, closed
821.10 Fracture of unspecified part of femur, open
821.11 Fracture of shaft of femur, open
821.20 Fracture of lower end of femur, unspecified part, closed
821.21 Fracture of femoral condyle, closed
821.22 Fracture of lower epiphysis of femur, closed

ICD-9-CM based list for MS-DRG 533-534**Fractures of Femur (14 codes)**

821.23 Supracondylar fracture of femur, closed
 821.29 Other fracture of lower end of femur, closed
 821.30 Fracture of lower end of femur, unspecified part, open
 821.31 Fracture of femoral condyle, open
 821.32 Fracture of lower epiphysis of femur, open
 821.33 Supracondylar fracture of femur, open
 821.39 Other fracture of lower end of femur, open

ICD-9-CM and ICD-10-CM based versions of MS-DRG 533-534**ICD-10-CM based list for MS-DRG 533-534****Fractures of Femur (273 codes)**

S72301A Unspecified fracture of shaft of right femur, initial encounter for closed fracture
 S72301B Unspecified fracture of shaft of right femur, initial encounter for open fracture type I or II
 S72301C Unspecified fracture of shaft of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
 S72302A Unspecified fracture of shaft of left femur, initial encounter for closed fracture
 S72302B Unspecified fracture of shaft of left femur, initial encounter for open fracture type I or II
 S72302C Unspecified fracture of shaft of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
 S72309A Unspecified fracture of shaft of unspecified femur, initial encounter for closed fracture
 S72309B Unspecified fracture of shaft of unspecified femur, initial encounter for open fracture type I or II
 S72309C Unspecified fracture of shaft of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
 S72321A Displaced transverse fracture of shaft of right femur, initial encounter for closed fracture
 S72321B Displaced transverse fracture of shaft of right femur, initial encounter for open fracture type I or II
 S72321C Displaced transverse fracture of shaft of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
 S72322A Displaced transverse fracture of shaft of left femur, initial encounter for closed fracture
 S72322B Displaced transverse fracture of shaft of left femur, initial encounter for open fracture type I or II
 S72322C Displaced transverse fracture of shaft of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
 S72323A Displaced transverse fracture of shaft of unspecified femur, initial encounter for closed fracture
 S72323B Displaced transverse fracture of shaft of unspecified femur, initial encounter for open fracture type I or II
 S72323C Displaced transverse fracture of shaft of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
 S72324A Nondisplaced transverse fracture of shaft of right femur, initial encounter for closed fracture
 S72324B Nondisplaced transverse fracture of shaft of right femur, initial encounter for open fracture type I or II
 S72324C Nondisplaced transverse fracture of shaft of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
 S72325A Nondisplaced transverse fracture of shaft of left femur, initial encounter for closed fracture
 S72325B Nondisplaced transverse fracture of shaft of left femur, initial encounter for open fracture type I or II
 S72325C Nondisplaced transverse fracture of shaft of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
 S72326A Nondisplaced transverse fracture of shaft of unspecified femur, initial encounter for closed fracture
 S72326B Nondisplaced transverse fracture of shaft of unspecified femur, initial encounter for open fracture type I or II
 S72326C Nondisplaced transverse fracture of shaft of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
 S72331A Displaced oblique fracture of shaft of right femur, initial encounter for closed fracture
 S72331B Displaced oblique fracture of shaft of right femur, initial encounter for open fracture type I or II
 S72331C Displaced oblique fracture of shaft of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
 S72332A Displaced oblique fracture of shaft of left femur, initial encounter for closed fracture
 S72332B Displaced oblique fracture of shaft of left femur, initial encounter for open fracture type I or II
 S72332C Displaced oblique fracture of shaft of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
 S72333A Displaced oblique fracture of shaft of unspecified femur, initial encounter for closed fracture
 S72333B Displaced oblique fracture of shaft of unspecified femur, initial encounter for open fracture type I or II
 S72333C Displaced oblique fracture of shaft of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
 S72334A Nondisplaced oblique fracture of shaft of right femur, initial encounter for closed fracture
 S72334B Nondisplaced oblique fracture of shaft of right femur, initial encounter for open fracture type I or II
 S72334C Nondisplaced oblique fracture of shaft of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
 S72335A Nondisplaced oblique fracture of shaft of left femur, initial encounter for closed fracture
 S72335B Nondisplaced oblique fracture of shaft of left femur, initial encounter for open fracture type I or II
 S72335C Nondisplaced oblique fracture of shaft of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
 S72336A Nondisplaced oblique fracture of shaft of unspecified femur, initial encounter for closed fracture
 S72336B Nondisplaced oblique fracture of shaft of unspecified femur, initial encounter for open fracture type I or II
 S72336C Nondisplaced oblique fracture of shaft of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
 S72341A Displaced spiral fracture of shaft of right femur, initial encounter for closed fracture

Fractures of Femur (273 codes)

[illegible]

ICD-10-CM based list for MS-DRG 533-534
Fractures of Femur (273 codes)

[illegible]

ICD-10-CM based list for MS-DRG 533-534**Fractures of Femur (273 codes)**

S72431B Displaced fracture of medial condyle of right femur, initial encounter for open fracture type I or II
S72431C Displaced fracture of medial condyle of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72432A Displaced fracture of medial condyle of left femur, initial encounter for closed fracture
S72432B Displaced fracture of medial condyle of left femur, initial encounter for open fracture type I or II
S72432C Displaced fracture of medial condyle of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72433A Displaced fracture of medial condyle of unspecified femur, initial encounter for closed fracture
S72433B Displaced fracture of medial condyle of unspecified femur, initial encounter for open fracture type I or II
S72433C Displaced fracture of medial condyle of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72434A Nondisplaced fracture of medial condyle of right femur, initial encounter for closed fracture
S72434B Nondisplaced fracture of medial condyle of right femur, initial encounter for open fracture type I or II
S72434C Nondisplaced fracture of medial condyle of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72435A Nondisplaced fracture of medial condyle of left femur, initial encounter for closed fracture
S72435B Nondisplaced fracture of medial condyle of left femur, initial encounter for open fracture type I or II
S72435C Nondisplaced fracture of medial condyle of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72436A Nondisplaced fracture of medial condyle of unspecified femur, initial encounter for closed fracture
S72436B Nondisplaced fracture of medial condyle of unspecified femur, initial encounter for open fracture type I or II
S72436C Nondisplaced fracture of medial condyle of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72441A Displaced fracture of lower epiphysis (separation) of right femur, initial encounter for closed fracture
S72441B Displaced fracture of lower epiphysis (separation) of right femur, initial encounter for open fracture type I or II
S72441C Displaced fracture of lower epiphysis (separation) of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72442A Displaced fracture of lower epiphysis (separation) of left femur, initial encounter for closed fracture
S72442B Displaced fracture of lower epiphysis (separation) of left femur, initial encounter for open fracture type I or II
S72442C Displaced fracture of lower epiphysis (separation) of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72443A Displaced fracture of lower epiphysis (separation) of unspecified femur, initial encounter for closed fracture
S72443B Displaced fracture of lower epiphysis (separation) of unspecified femur, initial encounter for open fracture type I or II
S72443C Displaced fracture of lower epiphysis (separation) of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72444A Nondisplaced fracture of lower epiphysis (separation) of right femur, initial encounter for closed fracture
S72444B Nondisplaced fracture of lower epiphysis (separation) of right femur, initial encounter for open fracture type I or II
S72444C Nondisplaced fracture of lower epiphysis (separation) of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72445A Nondisplaced fracture of lower epiphysis (separation) of left femur, initial encounter for closed fracture
S72445B Nondisplaced fracture of lower epiphysis (separation) of left femur, initial encounter for open fracture type I or II
S72445C Nondisplaced fracture of lower epiphysis (separation) of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72446A Nondisplaced fracture of lower epiphysis (separation) of unspecified femur, initial encounter for closed fracture
S72446B Nondisplaced fracture of lower epiphysis (separation) of unspecified femur, initial encounter for open fracture type I or II
S72446C Nondisplaced fracture of lower epiphysis (separation) of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72451A Displaced supracondylar fracture without intracondylar extension of lower end of right femur, initial encounter for closed fracture
S72451B Displaced supracondylar fracture without intracondylar extension of lower end of right femur, initial encounter for open fracture type I or II
S72451C Displaced supracondylar fracture without intracondylar extension of lower end of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72452A Displaced supracondylar fracture without intracondylar extension of lower end of left femur, initial encounter for closed fracture
S72452B Displaced supracondylar fracture without intracondylar extension of lower end of left femur, initial encounter for open fracture type I or II
S72452C Displaced supracondylar fracture without intracondylar extension of lower end of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72453A Displaced supracondylar fracture without intracondylar extension of lower end of unspecified femur, initial encounter for closed fracture
S72453B Displaced supracondylar fracture without intracondylar extension of lower end of unspecified femur, initial encounter for open fracture type I or II

ICD-10-CM based list for MS-DRG 533-534
Fractures of Femur (273 codes)

S72453C Displaced supracondylar fracture without intracondylar extension of lower end of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72454A Nondisplaced supracondylar fracture without intracondylar extension of lower end of right femur, initial encounter for closed fracture
S72454B Nondisplaced supracondylar fracture without intracondylar extension of lower end of right femur, initial encounter for open fracture type I or II
S72454C Nondisplaced supracondylar fracture without intracondylar extension of lower end of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72455A Nondisplaced supracondylar fracture without intracondylar extension of lower end of left femur, initial encounter for closed fracture
S72455B Nondisplaced supracondylar fracture without intracondylar extension of lower end of left femur, initial encounter for open fracture type I or II
S72455C Nondisplaced supracondylar fracture without intracondylar extension of lower end of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72456A Nondisplaced supracondylar fracture without intracondylar extension of lower end of unspecified femur, initial encounter for closed fracture
S72456B Nondisplaced supracondylar fracture without intracondylar extension of lower end of unspecified femur, initial encounter for open fracture type I or II
S72456C Nondisplaced supracondylar fracture without intracondylar extension of lower end of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72461A Displaced supracondylar fracture with intracondylar extension of lower end of right femur, initial encounter for closed fracture
S72461B Displaced supracondylar fracture with intracondylar extension of lower end of right femur, initial encounter for open fracture type I or II
S72461C Displaced supracondylar fracture with intracondylar extension of lower end of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72462A Displaced supracondylar fracture with intracondylar extension of lower end of left femur, initial encounter for closed fracture
S72462B Displaced supracondylar fracture with intracondylar extension of lower end of left femur, initial encounter for open fracture type I or II
S72462C Displaced supracondylar fracture with intracondylar extension of lower end of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72463A Displaced supracondylar fracture with intracondylar extension of lower end of unspecified femur, initial encounter for closed fracture
S72463B Displaced supracondylar fracture with intracondylar extension of lower end of unspecified femur, initial encounter for open fracture type I or II
S72463C Displaced supracondylar fracture with intracondylar extension of lower end of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72464A Nondisplaced supracondylar fracture with intracondylar extension of lower end of right femur, initial encounter for closed fracture
S72464B Nondisplaced supracondylar fracture with intracondylar extension of lower end of right femur, initial encounter for open fracture type I or II
S72464C Nondisplaced supracondylar fracture with intracondylar extension of lower end of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72465A Nondisplaced supracondylar fracture with intracondylar extension of lower end of left femur, initial encounter for closed fracture
S72465B Nondisplaced supracondylar fracture with intracondylar extension of lower end of left femur, initial encounter for open fracture type I or II
S72465C Nondisplaced supracondylar fracture with intracondylar extension of lower end of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72466A Nondisplaced supracondylar fracture with intracondylar extension of lower end of unspecified femur, initial encounter for closed fracture
S72466B Nondisplaced supracondylar fracture with intracondylar extension of lower end of unspecified femur, initial encounter for open fracture type I or II
S72466C Nondisplaced supracondylar fracture with intracondylar extension of lower end of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72471A Torus fracture of lower end of right femur, initial encounter for closed fracture
S72472A Torus fracture of lower end of left femur, initial encounter for closed fracture
S72479A Torus fracture of lower end of unspecified femur, initial encounter for closed fracture
S72491A Other fracture of lower end of right femur, initial encounter for closed fracture

ICD-10-CM based list for MS-DRG 533-534**Fractures of Femur (273 codes)**

S72491B Other fracture of lower end of right femur, initial encounter for open fracture type I or II
S72491C Other fracture of lower end of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72492A Other fracture of lower end of left femur, initial encounter for closed fracture
S72492B Other fracture of lower end of left femur, initial encounter for open fracture type I or II
S72492C Other fracture of lower end of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S72499A Other fracture of lower end of unspecified femur, initial encounter for closed fracture
S72499B Other fracture of lower end of unspecified femur, initial encounter for open fracture type I or II
S72499C Other fracture of lower end of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S728x1A Other fracture of right femur, initial encounter for closed fracture
S728x1B Other fracture of right femur, initial encounter for open fracture type I or II
S728x1C Other fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S728x2A Other fracture of left femur, initial encounter for closed fracture
S728x2B Other fracture of left femur, initial encounter for open fracture type I or II
S728x2C Other fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S728x9A Other fracture of unspecified femur, initial encounter for closed fracture
S728x9B Other fracture of unspecified femur, initial encounter for open fracture type I or II
S728x9C Other fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S7290xA Unspecified fracture of unspecified femur, initial encounter for closed fracture
S7290xB Unspecified fracture of unspecified femur, initial encounter for open fracture type I or II
S7290xC Unspecified fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S7291xA Unspecified fracture of right femur, initial encounter for closed fracture
S7291xB Unspecified fracture of right femur, initial encounter for open fracture type I or II
S7291xC Unspecified fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S7292xA Unspecified fracture of left femur, initial encounter for closed fracture
S7292xB Unspecified fracture of left femur, initial encounter for open fracture type I or II
S7292xC Unspecified fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC
S79101A Unspecified physeal fracture of lower end of right femur, initial encounter for closed fracture
S79102A Unspecified physeal fracture of lower end of left femur, initial encounter for closed fracture
S79109A Unspecified physeal fracture of lower end of unspecified femur, initial encounter for closed fracture
S79111A Salter-Harris Type I physeal fracture of lower end of right femur, initial encounter for closed fracture
S79112A Salter-Harris Type I physeal fracture of lower end of left femur, initial encounter for closed fracture
S79119A Salter-Harris Type I physeal fracture of lower end of unspecified femur, initial encounter for closed fracture
S79121A Salter-Harris Type II physeal fracture of lower end of right femur, initial encounter for closed fracture
S79122A Salter-Harris Type II physeal fracture of lower end of left femur, initial encounter for closed fracture
S79129A Salter-Harris Type II physeal fracture of lower end of unspecified femur, initial encounter for closed fracture
S79131A Salter-Harris Type III physeal fracture of lower end of right femur, initial encounter for closed fracture
S79132A Salter-Harris Type III physeal fracture of lower end of left femur, initial encounter for closed fracture
S79139A Salter-Harris Type III physeal fracture of lower end of unspecified femur, initial encounter for closed fracture
S79141A Salter-Harris Type IV physeal fracture of lower end of right femur, initial encounter for closed fracture
S79142A Salter-Harris Type IV physeal fracture of lower end of left femur, initial encounter for closed fracture
S79149A Salter-Harris Type IV physeal fracture of lower end of unspecified femur, initial encounter for closed fracture
S79191A Other physeal fracture of lower end of right femur, initial encounter for closed fracture
S79192A Other physeal fracture of lower end of left femur, initial encounter for closed fracture
S79199A Other physeal fracture of lower end of unspecified femur, initial encounter for closed fracture

ICD-9-CM and ICD-10-CM based versions of MS-DRG 551-552**ICD-9-CM based list for MS-DRGs 551-552****Medical Back Problems (166 codes)**

7201 Spinal enthesopathy
7202 Sacroiliitis, not elsewhere classified
72081 Inflammatory spondylopathies in diseases classified elsewhere
72089 Other inflammatory spondylopathies
7209 Unspecified inflammatory spondylopathy
7210 Cervical spondylosis without myelopathy
7211 Cervical spondylosis with myelopathy
7212 Thoracic spondylosis without myelopathy
7213 Lumbosacral spondylosis without myelopathy

ICD-9-CM based list for MS-DRGs 551-552**Medical Back Problems (166 codes)**

72141 Spondylosis with myelopathy, thoracic region
72142 Spondylosis with myelopathy, lumbar region
7215 Kissing spine
7216 Ankylosing vertebral hyperostosis
7217 Traumatic spondylopathy
7218 Other allied disorders of spine
72190 Spondylosis of unspecified site without mention of myelopathy
72191 Spondylosis of unspecified site with myelopathy
7220 Displacement of cervical intervertebral disc without myelopathy
72210 Displacement of lumbar intervertebral disc without myelopathy
72211 Displacement of thoracic intervertebral disc without myelopathy
7222 Displacement of intervertebral disc, site unspecified, without myelopathy
72230 Schmorl's nodes of unspecified region
72231 Schmorl's nodes of thoracic region
72232 Schmorl's nodes of lumbar region
72239 Schmorl's nodes of other spinal region
7224 Degeneration of cervical intervertebral disc
72251 Degeneration of thoracic or thoracolumbar intervertebral disc
72252 Degeneration of lumbar or lumbosacral intervertebral disc
7226 Degeneration of intervertebral disc, site unspecified
72270 Intervertebral disc disorder with myelopathy, unspecified region
72271 Intervertebral disc disorder with myelopathy, cervical region
72272 Intervertebral disc disorder with myelopathy, thoracic region
72273 Intervertebral disc disorder with myelopathy, lumbar region
72280 Postlaminectomy syndrome of unspecified region
72281 Postlaminectomy syndrome of cervical region
72282 Postlaminectomy syndrome of thoracic region
72283 Postlaminectomy syndrome of lumbar region
72290 Other and unspecified disc disorder of unspecified region
72291 Other and unspecified disc disorder of cervical region
72292 Other and unspecified disc disorder of thoracic region
72293 Other and unspecified disc disorder of lumbar region
7230 Spinal stenosis in cervical region
7231 Cervicalgia
7235 Torticollis, unspecified
7237 Ossification of posterior longitudinal ligament in cervical region
7238 Other syndromes affecting cervical region
7239 Unspecified musculoskeletal disorders and symptoms referable to neck
72400 Spinal stenosis of unspecified region
72401 Spinal stenosis of thoracic region
72402 Spinal stenosis of lumbar region
72409 Spinal stenosis of other region
7241 Pain in thoracic spine
7242 Lumbago
7243 Sciatica
7244 Thoracic or lumbosacral neuritis or radiculitis, unspecified
7245 Backache, unspecified
7246 Disorders of sacrum
72470 Unspecified disorder of coccyx
72471 Hypermobility of coccyx
72479 Other disorders of coccyx
7248 Other symptoms referable to back
7249 Other unspecified back disorders
7370 Adolescent postural kyphosis
73710 Kyphosis (acquired) (postural)
73711 Kyphosis due to radiation
73712 Kyphosis, postlaminectomy
73719 Other kyphosis, acquired
73720 Lordosis (acquired) (postural)
73721 Lordosis, postlaminectomy

ICD-9-CM based list for MS-DRGs 551-552
Medical Back Problems (166 codes)

73722 Other postsurgical lordosis
73729 Other lordosis, acquired
73730 Scoliosis (and kyphoscoliosis), idiopathic
73731 Resolving infantile idiopathic scoliosis
73732 Progressive infantile idiopathic scoliosis
73733 Scoliosis due to radiation
73734 Thoracogenic scoliosis
73739 Other kyphoscoliosis and scoliosis
73740 Unspecified curvature of spine associated with other conditions
73741 Kyphosis associated with other conditions
73742 Lordosis associated with other conditions
73743 Scoliosis associated with other conditions
7378 Other curvatures of spine associated with other conditions
7379 Unspecified curvature of spine associated with other conditions
7384 Acquired spondylolisthesis
7385 Other acquired deformity of back or spine
7391 Nonallopathic lesions of cervical region, not elsewhere classified
7392 Nonallopathic lesions of thoracic region, not elsewhere classified
7393 Nonallopathic lesions of lumbar region, not elsewhere classified
7394 Nonallopathic lesions of sacral region, not elsewhere classified
75610 Congenital anomaly of spine, unspecified
75611 Congenital spondylolysis, lumbosacral region
75612 Spondylolisthesis, congenital
75613 Absence of vertebra, congenital
75614 Hemivertebra
75615 Fusion of spine (vertebra), congenital
75619 Other congenital anomalies of spine
78193 Ocular torticollis
80500 Closed fracture of cervical vertebra, unspecified level
80501 Closed fracture of first cervical vertebra
80502 Closed fracture of second cervical vertebra
80503 Closed fracture of third cervical vertebra
80504 Closed fracture of fourth cervical vertebra
80505 Closed fracture of fifth cervical vertebra
80506 Closed fracture of sixth cervical vertebra
80507 Closed fracture of seventh cervical vertebra
80508 Closed fracture of multiple cervical vertebrae
80510 Open fracture of cervical vertebra, unspecified level
80511 Open fracture of first cervical vertebra
80512 Open fracture of second cervical vertebra
80513 Open fracture of third cervical vertebra
80514 Open fracture of fourth cervical vertebra
80515 Open fracture of fifth cervical vertebra
80516 Open fracture of sixth cervical vertebra
80517 Open fracture of seventh cervical vertebra
80518 Open fracture of multiple cervical vertebrae
8052 Closed fracture of dorsal (thoracic) vertebra without mention of spinal cord injury
8053 Open fracture of dorsal (thoracic) vertebra without mention of spinal cord injury
8054 Closed fracture of lumbar vertebra without mention of spinal cord injury
8055 Open fracture of lumbar vertebra without mention of spinal cord injury
8056 Closed fracture of sacrum and coccyx without mention of spinal cord injury
8057 Open fracture of sacrum and coccyx without mention of spinal cord injury
8058 Closed fracture of unspecified part of vertebral column without mention of spinal cord injury
8059 Open fracture of unspecified part of vertebral column without mention of spinal cord injury
83900 Closed dislocation, cervical vertebra, unspecified
83901 Closed dislocation, first cervical vertebra
83902 Closed dislocation, second cervical vertebra
83903 Closed dislocation, third cervical vertebra
83904 Closed dislocation, fourth cervical vertebra
83905 Closed dislocation, fifth cervical vertebra

ICD-9-CM based list for MS-DRGs 551-552**Medical Back Problems (166 codes)**

83906 Closed dislocation, sixth cervical vertebra
83907 Closed dislocation, seventh cervical vertebra
83908 Closed dislocation, multiple cervical vertebrae
83910 Open dislocation, cervical vertebra, unspecified
83911 Open dislocation, first cervical vertebra
83912 Open dislocation, second cervical vertebra
83913 Open dislocation, third cervical vertebra
83914 Open dislocation, fourth cervical vertebra
83915 Open dislocation, fifth cervical vertebra
83916 Open dislocation, sixth cervical vertebra
83917 Open dislocation, seventh cervical vertebra
83918 Open dislocation, multiple cervical vertebrae
83920 Closed dislocation, lumbar vertebra
83921 Closed dislocation, thoracic vertebra
83930 Open dislocation, lumbar vertebra
83931 Open dislocation, thoracic vertebra
83940 Closed dislocation, vertebra, unspecified site
83941 Closed dislocation, coccyx
83942 Closed dislocation, sacrum
83949 Closed dislocation, other vertebra
83950 Open dislocation, vertebra, unspecified site
83951 Open dislocation, coccyx
83952 Open dislocation, sacrum
83959 Open dislocation, other vertebra
8460 Lumbosacral (joint) (ligament) sprain
8461 Sacroiliac (ligament) sprain
8462 Sacrospinatus (ligament) sprain
8463 Sacrotuberous (ligament) sprain
8468 Other specified sites of sacroiliac region sprain
8469 Unspecified site of sacroiliac region sprain
8470 Neck sprain
8471 Thoracic sprain
8472 Lumbar sprain
8473 Sprain of sacrum
8474 Sprain of coccyx
8479 Sprain of unspecified site of back
9051 Late effect of fracture of spine and trunk without mention of spinal cord lesion

ICD-9-CM and ICD-10-CM based versions of MS-DRG 551-552**ICD-10-CM based list for MS-DRGs 551-552****Medical Back Problems (1,132 codes)**

M2578 Osteophyte, vertebrae
M4000 Postural kyphosis, site unspecified
M4003 Postural kyphosis, cervicothoracic region
M4004 Postural kyphosis, thoracic region
M4005 Postural kyphosis, thoracolumbar region
M4010 Other secondary kyphosis, site unspecified
M4012 Other secondary kyphosis, cervical region
M4013 Other secondary kyphosis, cervicothoracic region
M4014 Other secondary kyphosis, thoracic region
M4015 Other secondary kyphosis, thoracolumbar region
M40202 Unspecified kyphosis, cervical region
M40203 Unspecified kyphosis, cervicothoracic region
M40204 Unspecified kyphosis, thoracic region
M40205 Unspecified kyphosis, thoracolumbar region
M40209 Unspecified kyphosis, site unspecified
M40292 Other kyphosis, cervical region
M40293 Other kyphosis, cervicothoracic region
M40294 Other kyphosis, thoracic region

ICD-10-CM based list for MS-DRGs 551-552
Medical Back Problems (1,132 codes)

M40295 Other kyphosis, thoracolumbar region
M40299 Other kyphosis, site unspecified
M4030 Flatback syndrome, site unspecified
M4035 Flatback syndrome, thoracolumbar region
M4036 Flatback syndrome, lumbar region
M4037 Flatback syndrome, lumbosacral region
M4040 Postural lordosis, site unspecified
M4045 Postural lordosis, thoracolumbar region
M4046 Postural lordosis, lumbar region
M4047 Postural lordosis, lumbosacral region
M4050 Lordosis, unspecified, site unspecified
M4055 Lordosis, unspecified, thoracolumbar region
M4056 Lordosis, unspecified, lumbar region
M4057 Lordosis, unspecified, lumbosacral region
M4100 Infantile idiopathic scoliosis, site unspecified
M4102 Infantile idiopathic scoliosis, cervical region
M4103 Infantile idiopathic scoliosis, cervicothoracic region
M4104 Infantile idiopathic scoliosis, thoracic region
M4105 Infantile idiopathic scoliosis, thoracolumbar region
M4106 Infantile idiopathic scoliosis, lumbar region
M4107 Infantile idiopathic scoliosis, lumbosacral region
M4108 Infantile idiopathic scoliosis, sacral and sacrococcygeal region
M41112 Juvenile idiopathic scoliosis, cervical region
M41113 Juvenile idiopathic scoliosis, cervicothoracic region
M41114 Juvenile idiopathic scoliosis, thoracic region
M41115 Juvenile idiopathic scoliosis, thoracolumbar region
M41116 Juvenile idiopathic scoliosis, lumbar region
M41117 Juvenile idiopathic scoliosis, lumbosacral region
M41119 Juvenile idiopathic scoliosis, site unspecified
M41122 Adolescent idiopathic scoliosis, cervical region
M41123 Adolescent idiopathic scoliosis, cervicothoracic region
M41124 Adolescent idiopathic scoliosis, thoracic region
M41125 Adolescent idiopathic scoliosis, thoracolumbar region
M41126 Adolescent idiopathic scoliosis, lumbar region
M41127 Adolescent idiopathic scoliosis, lumbosacral region
M41129 Adolescent idiopathic scoliosis, site unspecified
M4120 Other idiopathic scoliosis, site unspecified
M4122 Other idiopathic scoliosis, cervical region
M4123 Other idiopathic scoliosis, cervicothoracic region
M4124 Other idiopathic scoliosis, thoracic region
M4125 Other idiopathic scoliosis, thoracolumbar region
M4126 Other idiopathic scoliosis, lumbar region
M4127 Other idiopathic scoliosis, lumbosacral region
M4130 Thoracogenic scoliosis, site unspecified
M4134 Thoracogenic scoliosis, thoracic region
M4135 Thoracogenic scoliosis, thoracolumbar region
M4140 Neuromuscular scoliosis, site unspecified
M4141 Neuromuscular scoliosis, occipito-atlanto-axial region
M4142 Neuromuscular scoliosis, cervical region
M4143 Neuromuscular scoliosis, cervicothoracic region
M4144 Neuromuscular scoliosis, thoracic region
M4145 Neuromuscular scoliosis, thoracolumbar region
M4146 Neuromuscular scoliosis, lumbar region
M4147 Neuromuscular scoliosis, lumbosacral region
M4150 Other secondary scoliosis, site unspecified
M4152 Other secondary scoliosis, cervical region
M4153 Other secondary scoliosis, cervicothoracic region
M4154 Other secondary scoliosis, thoracic region
M4155 Other secondary scoliosis, thoracolumbar region
M4156 Other secondary scoliosis, lumbar region

ICD-10-CM based list for MS-DRGs 551-552
Medical Back Problems (1,132 codes)

M4157 Other secondary scoliosis, lumbosacral region
M4180 Other forms of scoliosis, site unspecified
M4182 Other forms of scoliosis, cervical region
M4183 Other forms of scoliosis, cervicothoracic region
M4184 Other forms of scoliosis, thoracic region
M4185 Other forms of scoliosis, thoracolumbar region
M4186 Other forms of scoliosis, lumbar region
M4187 Other forms of scoliosis, lumbosacral region
M419 Scoliosis, unspecified
M4300 Spondylolysis, site unspecified
M4301 Spondylolysis, occipito-atlanto-axial region
M4302 Spondylolysis, cervical region
M4303 Spondylolysis, cervicothoracic region
M4304 Spondylolysis, thoracic region
M4305 Spondylolysis, thoracolumbar region
M4306 Spondylolysis, lumbar region
M4307 Spondylolysis, lumbosacral region
M4308 Spondylolysis, sacral and sacrococcygeal region
M4309 Spondylolysis, multiple sites in spine
M4310 Spondylolisthesis, site unspecified
M4311 Spondylolisthesis, occipito-atlanto-axial region
M4312 Spondylolisthesis, cervical region
M4313 Spondylolisthesis, cervicothoracic region
M4314 Spondylolisthesis, thoracic region
M4315 Spondylolisthesis, thoracolumbar region
M4316 Spondylolisthesis, lumbar region
M4317 Spondylolisthesis, lumbosacral region
M4318 Spondylolisthesis, sacral and sacrococcygeal region
M4319 Spondylolisthesis, multiple sites in spine
M4320 Fusion of spine, site unspecified
M4321 Fusion of spine, occipito-atlanto-axial region
M4322 Fusion of spine, cervical region
M4323 Fusion of spine, cervicothoracic region
M4324 Fusion of spine, thoracic region
M4325 Fusion of spine, thoracolumbar region
M4326 Fusion of spine, lumbar region
M4327 Fusion of spine, lumbosacral region
M4328 Fusion of spine, sacral and sacrococcygeal region
M436 Torticollis
M438x1 Other specified deforming dorsopathies, occipito-atlanto-axial region
M438x2 Other specified deforming dorsopathies, cervical region
M438x3 Other specified deforming dorsopathies, cervicothoracic region
M438x4 Other specified deforming dorsopathies, thoracic region
M438x5 Other specified deforming dorsopathies, thoracolumbar region
M438x6 Other specified deforming dorsopathies, lumbar region
M438x7 Other specified deforming dorsopathies, lumbosacral region
M438x8 Other specified deforming dorsopathies, sacral and sacrococcygeal region
M438x9 Other specified deforming dorsopathies, site unspecified
M439 Deforming dorsopathy, unspecified
M4600 Spinal enthesopathy, site unspecified
M4601 Spinal enthesopathy, occipito-atlanto-axial region
M4602 Spinal enthesopathy, cervical region
M4603 Spinal enthesopathy, cervicothoracic region
M4604 Spinal enthesopathy, thoracic region
M4605 Spinal enthesopathy, thoracolumbar region
M4606 Spinal enthesopathy, lumbar region
M4607 Spinal enthesopathy, lumbosacral region
M4608 Spinal enthesopathy, sacral and sacrococcygeal region
M4609 Spinal enthesopathy, multiple sites in spine
M461 Sacroiliitis, not elsewhere classified

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M4640 Discitis, unspecified, site unspecified
M4641 Discitis, unspecified, occipito-atlanto-axial region
M4642 Discitis, unspecified, cervical region
M4643 Discitis, unspecified, cervicothoracic region
M4644 Discitis, unspecified, thoracic region
M4645 Discitis, unspecified, thoracolumbar region
M4646 Discitis, unspecified, lumbar region
M4647 Discitis, unspecified, lumbosacral region
M4648 Discitis, unspecified, sacral and sacrococcygeal region
M4649 Discitis, unspecified, multiple sites in spine
M4650 Other infective spondylopathies, site unspecified
M4651 Other infective spondylopathies, occipito-atlanto-axial region
M4652 Other infective spondylopathies, cervical region
M4653 Other infective spondylopathies, cervicothoracic region
M4654 Other infective spondylopathies, thoracic region
M4655 Other infective spondylopathies, thoracolumbar region
M4656 Other infective spondylopathies, lumbar region
M4657 Other infective spondylopathies, lumbosacral region
M4658 Other infective spondylopathies, sacral and sacrococcygeal region
M4659 Other infective spondylopathies, multiple sites in spine
M4680 Other specified inflammatory spondylopathies, site unspecified
M4681 Other specified inflammatory spondylopathies, occipito-atlanto-axial region
M4682 Other specified inflammatory spondylopathies, cervical region
M4683 Other specified inflammatory spondylopathies, cervicothoracic region
M4684 Other specified inflammatory spondylopathies, thoracic region
M4685 Other specified inflammatory spondylopathies, thoracolumbar region
M4686 Other specified inflammatory spondylopathies, lumbar region
M4687 Other specified inflammatory spondylopathies, lumbosacral region
M4688 Other specified inflammatory spondylopathies, sacral and sacrococcygeal region
M4689 Other specified inflammatory spondylopathies, multiple sites in spine
M4690 Unspecified inflammatory spondylopathy, site unspecified
M4691 Unspecified inflammatory spondylopathy, occipito-atlanto-axial region
M4692 Unspecified inflammatory spondylopathy, cervical region
M4693 Unspecified inflammatory spondylopathy, cervicothoracic region
M4694 Unspecified inflammatory spondylopathy, thoracic region
M4695 Unspecified inflammatory spondylopathy, thoracolumbar region
M4696 Unspecified inflammatory spondylopathy, lumbar region
M4697 Unspecified inflammatory spondylopathy, lumbosacral region
M4698 Unspecified inflammatory spondylopathy, sacral and sacrococcygeal region
M4699 Unspecified inflammatory spondylopathy, multiple sites in spine
M47011 Anterior spinal artery compression syndromes, occipito-atlanto-axial region
M47012 Anterior spinal artery compression syndromes, cervical region
M47013 Anterior spinal artery compression syndromes, cervicothoracic region
M47014 Anterior spinal artery compression syndromes, thoracic region
M47015 Anterior spinal artery compression syndromes, thoracolumbar region
M47016 Anterior spinal artery compression syndromes, lumbar region
M47019 Anterior spinal artery compression syndromes, site unspecified
M47021 Vertebral artery compression syndromes, occipito-atlanto-axial region
M47022 Vertebral artery compression syndromes, cervical region
M47029 Vertebral artery compression syndromes, site unspecified
M4710 Other spondylosis with myelopathy, site unspecified
M4711 Other spondylosis with myelopathy, occipito-atlanto-axial region
M4712 Other spondylosis with myelopathy, cervical region
M4713 Other spondylosis with myelopathy, cervicothoracic region
M4714 Other spondylosis with myelopathy, thoracic region
M4715 Other spondylosis with myelopathy, thoracolumbar region
M4716 Other spondylosis with myelopathy, lumbar region
M4717 Other spondylosis with myelopathy, lumbosacral region
M4718 Other spondylosis with myelopathy, sacral and sacrococcygeal region
M4720 Other spondylosis with radiculopathy, site unspecified

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M4721 Other spondylosis with radiculopathy, occipito-atlanto-axial region
M4722 Other spondylosis with radiculopathy, cervical region
M4723 Other spondylosis with radiculopathy, cervicothoracic region
M4724 Other spondylosis with radiculopathy, thoracic region
M4725 Other spondylosis with radiculopathy, thoracolumbar region
M4726 Other spondylosis with radiculopathy, lumbar region
M4727 Other spondylosis with radiculopathy, lumbosacral region
M4728 Other spondylosis with radiculopathy, sacral and sacrococcygeal region
M47811 Spondylosis without myelopathy or radiculopathy, occipito-atlanto-axial region
M47812 Spondylosis without myelopathy or radiculopathy, cervical region
M47813 Spondylosis without myelopathy or radiculopathy, cervicothoracic region
M47814 Spondylosis without myelopathy or radiculopathy, thoracic region
M47815 Spondylosis without myelopathy or radiculopathy, thoracolumbar region
M47816 Spondylosis without myelopathy or radiculopathy, lumbar region
M47817 Spondylosis without myelopathy or radiculopathy, lumbosacral region
M47818 Spondylosis without myelopathy or radiculopathy, sacral and sacrococcygeal region
M47819 Spondylosis without myelopathy or radiculopathy, site unspecified
M47891 Other spondylosis, occipito-atlanto-axial region
M47892 Other spondylosis, cervical region
M47893 Other spondylosis, cervicothoracic region
M47894 Other spondylosis, thoracic region
M47895 Other spondylosis, thoracolumbar region
M47896 Other spondylosis, lumbar region
M47897 Other spondylosis, lumbosacral region
M47898 Other spondylosis, sacral and sacrococcygeal region
M47899 Other spondylosis, site unspecified
M479 Spondylosis, unspecified
M4800 Spinal stenosis, site unspecified
M4801 Spinal stenosis, occipito-atlanto-axial region
M4802 Spinal stenosis, cervical region
M4803 Spinal stenosis, cervicothoracic region
M4804 Spinal stenosis, thoracic region
M4805 Spinal stenosis, thoracolumbar region
M4806 Spinal stenosis, lumbar region
M4807 Spinal stenosis, lumbosacral region
M4808 Spinal stenosis, sacral and sacrococcygeal region
M4810 Ankylosing hyperostosis [Forestier], site unspecified
M4811 Ankylosing hyperostosis [Forestier], occipito-atlanto-axial region
M4812 Ankylosing hyperostosis [Forestier], cervical region
M4813 Ankylosing hyperostosis [Forestier], cervicothoracic region
M4814 Ankylosing hyperostosis [Forestier], thoracic region
M4815 Ankylosing hyperostosis [Forestier], thoracolumbar region
M4816 Ankylosing hyperostosis [Forestier], lumbar region
M4817 Ankylosing hyperostosis [Forestier], lumbosacral region
M4818 Ankylosing hyperostosis [Forestier], sacral and sacrococcygeal region
M4819 Ankylosing hyperostosis [Forestier], multiple sites in spine
M4820 Kissing spine, site unspecified
M4821 Kissing spine, occipito-atlanto-axial region
M4822 Kissing spine, cervical region
M4823 Kissing spine, cervicothoracic region
M4824 Kissing spine, thoracic region
M4825 Kissing spine, thoracolumbar region
M4826 Kissing spine, lumbar region
M4827 Kissing spine, lumbosacral region
M4830 Traumatic spondylopathy, site unspecified
M4831 Traumatic spondylopathy, occipito-atlanto-axial region
M4832 Traumatic spondylopathy, cervical region
M4833 Traumatic spondylopathy, cervicothoracic region
M4834 Traumatic spondylopathy, thoracic region
M4835 Traumatic spondylopathy, thoracolumbar region

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M4836 Traumatic spondylopathy, lumbar region
 M4837 Traumatic spondylopathy, lumbosacral region
 M4838 Traumatic spondylopathy, sacral and sacrococcygeal region
 M4840xS Fatigue fracture of vertebra, site unspecified, sequela of fracture
 M4841xS Fatigue fracture of vertebra, occipito-atlanto-axial region, sequela of fracture
 M4842xS Fatigue fracture of vertebra, cervical region, sequela of fracture
 M4843xS Fatigue fracture of vertebra, cervicothoracic region, sequela of fracture
 M4844xS Fatigue fracture of vertebra, thoracic region, sequela of fracture
 M4845xS Fatigue fracture of vertebra, thoracolumbar region, sequela of fracture
 M4846xS Fatigue fracture of vertebra, lumbar region, sequela of fracture
 M4847xS Fatigue fracture of vertebra, lumbosacral region, sequela of fracture
 M4848xS Fatigue fracture of vertebra, sacral and sacrococcygeal region, sequela of fracture
 M4850xS Collapsed vertebra, not elsewhere classified, site unspecified, sequela of fracture
 M4851xS Collapsed vertebra, not elsewhere classified, occipito-atlanto-axial region, sequela of fracture
 M4852xS Collapsed vertebra, not elsewhere classified, cervical region, sequela of fracture
 M4853xS Collapsed vertebra, not elsewhere classified, cervicothoracic region, sequela of fracture
 M4854xS Collapsed vertebra, not elsewhere classified, thoracic region, sequela of fracture
 M4855xS Collapsed vertebra, not elsewhere classified, thoracolumbar region, sequela of fracture
 M4856xS Collapsed vertebra, not elsewhere classified, lumbar region, sequela of fracture
 M4857xS Collapsed vertebra, not elsewhere classified, lumbosacral region, sequela of fracture
 M4858xS Collapsed vertebra, not elsewhere classified, sacral and sacrococcygeal region, sequela of fracture
 M489 Spondylopathy, unspecified
 M4980 Spondylopathy in diseases classified elsewhere, site unspecified
 M4981 Spondylopathy in diseases classified elsewhere, occipito-atlanto-axial region
 M4982 Spondylopathy in diseases classified elsewhere, cervical region
 M4983 Spondylopathy in diseases classified elsewhere, cervicothoracic region
 M4984 Spondylopathy in diseases classified elsewhere, thoracic region
 M4985 Spondylopathy in diseases classified elsewhere, thoracolumbar region
 M4986 Spondylopathy in diseases classified elsewhere, lumbar region
 M4987 Spondylopathy in diseases classified elsewhere, lumbosacral region
 M4988 Spondylopathy in diseases classified elsewhere, sacral and sacrococcygeal region
 M4989 Spondylopathy in diseases classified elsewhere, multiple sites in spine
 M5000 Cervical disc disorder with myelopathy, unspecified cervical region
 M5001 Cervical disc disorder with myelopathy, occipito-atlanto-axial region
 M5002 Cervical disc disorder with myelopathy, mid-cervical region
 M5003 Cervical disc disorder with myelopathy, cervicothoracic region
 M5020 Other cervical disc displacement, unspecified cervical region
 M5021 Other cervical disc displacement, occipito-atlanto-axial region
 M5022 Other cervical disc displacement, mid-cervical region
 M5023 Other cervical disc displacement, cervicothoracic region
 M5030 Other cervical disc degeneration, unspecified cervical region
 M5031 Other cervical disc degeneration, occipito-atlanto-axial region
 M5032 Other cervical disc degeneration, mid-cervical region
 M5033 Other cervical disc degeneration, cervicothoracic region
 M5080 Other cervical disc disorders, unspecified cervical region
 M5081 Other cervical disc disorders, occipito-atlanto-axial region
 M5082 Other cervical disc disorders, mid-cervical region
 M5083 Other cervical disc disorders, cervicothoracic region
 M5090 Cervical disc disorder, unspecified, unspecified cervical region
 M5091 Cervical disc disorder, unspecified, occipito-atlanto-axial region
 M5092 Cervical disc disorder, unspecified, mid-cervical region
 M5093 Cervical disc disorder, unspecified, cervicothoracic region
 M5104 Intervertebral disc disorders with myelopathy, thoracic region
 M5105 Intervertebral disc disorders with myelopathy, thoracolumbar region
 M5106 Intervertebral disc disorders with myelopathy, lumbar region
 M5107 Intervertebral disc disorders with myelopathy, lumbosacral region
 M5114 Intervertebral disc disorders with radiculopathy, thoracic region
 M5115 Intervertebral disc disorders with radiculopathy, thoracolumbar region
 M5116 Intervertebral disc disorders with radiculopathy, lumbar region
 M5117 Intervertebral disc disorders with radiculopathy, lumbosacral region

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M5124 Other intervertebral disc displacement, thoracic region
M5125 Other intervertebral disc displacement, thoracolumbar region
M5126 Other intervertebral disc displacement, lumbar region
M5127 Other intervertebral disc displacement, lumbosacral region
M5134 Other intervertebral disc degeneration, thoracic region
M5135 Other intervertebral disc degeneration, thoracolumbar region
M5136 Other intervertebral disc degeneration, lumbar region
M5137 Other intervertebral disc degeneration, lumbosacral region
M5144 Schmorl's nodes, thoracic region
M5145 Schmorl's nodes, thoracolumbar region
M5146 Schmorl's nodes, lumbar region
M5147 Schmorl's nodes, lumbosacral region
M5184 Other intervertebral disc disorders, thoracic region
M5185 Other intervertebral disc disorders, thoracolumbar region
M5186 Other intervertebral disc disorders, lumbar region
M5187 Other intervertebral disc disorders, lumbosacral region
M519 Unspecified thoracic, thoracolumbar and lumbosacral intervertebral disc disorder
M532x7 Spinal instabilities, lumbosacral region
M532x8 Spinal instabilities, sacral and sacrococcygeal region
M533 Sacrococcygeal disorders, not elsewhere classified
M5380 Other specified dorsopathies, site unspecified
M5381 Other specified dorsopathies, occipito-atlanto-axial region
M5382 Other specified dorsopathies, cervical region
M5383 Other specified dorsopathies, cervicothoracic region
M5384 Other specified dorsopathies, thoracic region
M5385 Other specified dorsopathies, thoracolumbar region
M5386 Other specified dorsopathies, lumbar region
M5387 Other specified dorsopathies, lumbosacral region
M5388 Other specified dorsopathies, sacral and sacrococcygeal region
M539 Dorsopathy, unspecified
M5403 Panniculitis affecting regions of neck and back, cervicothoracic region
M5404 Panniculitis affecting regions of neck and back, thoracic region
M5405 Panniculitis affecting regions of neck and back, thoracolumbar region
M5406 Panniculitis affecting regions of neck and back, lumbar region
M5407 Panniculitis affecting regions of neck and back, lumbosacral region
M5408 Panniculitis affecting regions of neck and back, sacral and sacrococcygeal region
M5409 Panniculitis affecting regions, neck and back, multiple sites in spine
M5414 Radiculopathy, thoracic region
M5415 Radiculopathy, thoracolumbar region
M5416 Radiculopathy, lumbar region
M5417 Radiculopathy, lumbosacral region
M542 Cervicalgia
M5430 Sciatica, unspecified side
M5431 Sciatica, right side
M5432 Sciatica, left side
M5440 Lumbago with sciatica, unspecified side
M5441 Lumbago with sciatica, right side
M5442 Lumbago with sciatica, left side
M545 Low back pain
M546 Pain in thoracic spine
M5481 Occipital neuralgia
M5489 Other dorsalgia
M549 Dorsalgia, unspecified
M62830 Muscle spasm of back
M8008xS Age-related osteoporosis with current pathological fracture, vertebra(e), sequela
M8088xS Other osteoporosis with current pathological fracture, vertebra(e), sequela
M84350S Stress fracture, pelvis, sequela
M84359S Stress fracture, hip, unspecified, sequela
M84454S Pathological fracture, pelvis, sequela
M84459S Pathological fracture, hip, unspecified, sequela

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M84550S Pathological fracture in neoplastic disease, pelvis, sequela
M84559S Pathological fracture in neoplastic disease, hip, unspecified, sequela
M8458xS Pathological fracture in neoplastic disease, vertebrae, sequela
M84650S Pathological fracture in other disease, pelvis, sequela
M84659S Pathological fracture in other disease, hip, unspecified, sequela
M961 Postlaminectomy syndrome, not elsewhere classified
M962 Postradiation kyphosis
M963 Postlaminectomy kyphosis
M964 Postsurgical lordosis
M965 Postradiation scoliosis
M9901 Segmental and somatic dysfunction of cervical region
M9902 Segmental and somatic dysfunction of thoracic region
M9903 Segmental and somatic dysfunction of lumbar region
M9904 Segmental and somatic dysfunction of sacral region
M9910 Subluxation complex (vertebral) of head region
M9911 Subluxation complex (vertebral) of cervical region
M9912 Subluxation complex (vertebral) of thoracic region
M9913 Subluxation complex (vertebral) of lumbar region
M9914 Subluxation complex (vertebral) of sacral region
M9915 Subluxation complex (vertebral) of pelvic region
M9920 Subluxation stenosis of neural canal of head region
M9921 Subluxation stenosis of neural canal of cervical region
M9922 Subluxation stenosis of neural canal of thoracic region
M9923 Subluxation stenosis of neural canal of lumbar region
M9924 Subluxation stenosis of neural canal of sacral region
M9925 Subluxation stenosis of neural canal of pelvic region
M9926 Subluxation stenosis of neural canal of lower extremity
M9927 Subluxation stenosis of neural canal of upper extremity
M9928 Subluxation stenosis of neural canal of rib cage
M9929 Subluxation stenosis of neural canal of abdomen and other regions
M9930 Osseous stenosis of neural canal of head region
M9931 Osseous stenosis of neural canal of cervical region
M9932 Osseous stenosis of neural canal of thoracic region
M9933 Osseous stenosis of neural canal of lumbar region
M9934 Osseous stenosis of neural canal of sacral region
M9935 Osseous stenosis of neural canal of pelvic region
M9936 Osseous stenosis of neural canal of lower extremity
M9937 Osseous stenosis of neural canal of upper extremity
M9938 Osseous stenosis of neural canal of rib cage
M9939 Osseous stenosis of neural canal of abdomen and other regions
M9940 Connective tissue stenosis of neural canal of head region
M9941 Connective tissue stenosis of neural canal of cervical region
M9942 Connective tissue stenosis of neural canal of thoracic region
M9943 Connective tissue stenosis of neural canal of lumbar region
M9944 Connective tissue stenosis of neural canal of sacral region
M9945 Connective tissue stenosis of neural canal of pelvic region
M9946 Connective tissue stenosis of neural canal of lower extremity
M9947 Connective tissue stenosis of neural canal of upper extremity
M9948 Connective tissue stenosis of neural canal of rib cage
M9949 Connective tissue stenosis of neural canal of abdomen and other regions
M9950 Intervertebral disc stenosis of neural canal of head region
M9951 Intervertebral disc stenosis of neural canal of cervical region
M9952 Intervertebral disc stenosis of neural canal of thoracic region
M9953 Intervertebral disc stenosis of neural canal of lumbar region
M9954 Intervertebral disc stenosis of neural canal of sacral region
M9955 Intervertebral disc stenosis of neural canal of pelvic region
M9956 Intervertebral disc stenosis of neural canal of lower extremity
M9957 Intervertebral disc stenosis of neural canal of upper extremity
M9958 Intervertebral disc stenosis of neural canal of rib cage
M9959 Intervertebral disc stenosis of neural canal of abdomen and other regions

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M9960 Osseous and subluxation stenosis of intervertebral foramina of head region
 M9961 Osseous and subluxation stenosis of intervertebral foramina of cervical region
 M9962 Osseous and subluxation stenosis of intervertebral foramina of thoracic region
 M9963 Osseous and subluxation stenosis of intervertebral foramina of lumbar region
 M9964 Osseous and subluxation stenosis of intervertebral foramina of sacral region
 M9965 Osseous and subluxation stenosis of intervertebral foramina of pelvic region
 M9966 Osseous and subluxation stenosis of intervertebral foramina of lower extremity
 M9967 Osseous and subluxation stenosis of intervertebral foramina of upper extremity
 M9968 Osseous and subluxation stenosis of intervertebral foramina of rib cage
 M9969 Osseous and subluxation stenosis of intervertebral foramina of abdomen and other regions
 M9970 Connective tissue and disc stenosis of intervertebral foramina of head region
 M9971 Connective tissue and disc stenosis of intervertebral foramina of cervical region
 M9972 Connective tissue and disc stenosis of intervertebral foramina of thoracic region
 M9973 Connective tissue and disc stenosis of intervertebral foramina of lumbar region
 M9974 Connective tissue and disc stenosis of intervertebral foramina of sacral region
 M9975 Connective tissue and disc stenosis of intervertebral foramina of pelvic region
 M9976 Connective tissue and disc stenosis of intervertebral foramina of lower extremity
 M9977 Connective tissue and disc stenosis of intervertebral foramina of upper extremity
 M9978 Connective tissue and disc stenosis of intervertebral foramina of rib cage
 M9979 Connective tissue and disc stenosis of intervertebral foramina of abdomen and other regions
 M9983 Other biomechanical lesions of lumbar region
 M9984 Other biomechanical lesions of sacral region
 Q762 Congenital spondylolisthesis
 Q7649 Other congenital malformations of spine, not associated with scoliosis
 R29891 Ocular torticollis
 S12000A Unspecified displaced fracture of first cervical vertebra, initial encounter for closed fracture
 S12000B Unspecified displaced fracture of first cervical vertebra, initial encounter for open fracture
 S12000S Unspecified displaced fracture of first cervical vertebra, sequela
 S12001A Unspecified nondisplaced fracture of first cervical vertebra, initial encounter for closed fracture
 S12001B Unspecified nondisplaced fracture of first cervical vertebra, initial encounter for open fracture
 S12001S Unspecified nondisplaced fracture of first cervical vertebra, sequela
 S1201xA Stable burst fracture of first cervical vertebra, initial encounter for closed fracture
 S1201xB Stable burst fracture of first cervical vertebra, initial encounter for open fracture
 S1201xS Stable burst fracture of first cervical vertebra, sequela
 S1202xA Unstable burst fracture of first cervical vertebra, initial encounter for closed fracture
 S1202xB Unstable burst fracture of first cervical vertebra, initial encounter for open fracture
 S1202xS Unstable burst fracture of first cervical vertebra, sequela
 S12030A Displaced posterior arch fracture of first cervical vertebra, initial encounter for closed fracture
 S12030B Displaced posterior arch fracture of first cervical vertebra, initial encounter for open fracture
 S12030S Displaced posterior arch fracture of first cervical vertebra, sequela
 S12031A Nondisplaced posterior arch fracture of first cervical vertebra, initial encounter for closed fracture
 S12031B Nondisplaced posterior arch fracture of first cervical vertebra, initial encounter for open fracture
 S12031S Nondisplaced posterior arch fracture of first cervical vertebra, sequela
 S12040A Displaced lateral mass fracture of first cervical vertebra, initial encounter for closed fracture
 S12040B Displaced lateral mass fracture of first cervical vertebra, initial encounter for open fracture
 S12040S Displaced lateral mass fracture of first cervical vertebra, sequela
 S12041A Nondisplaced lateral mass fracture of first cervical vertebra, initial encounter for closed fracture
 S12041B Nondisplaced lateral mass fracture of first cervical vertebra, initial encounter for open fracture
 S12041S Nondisplaced lateral mass fracture of first cervical vertebra, sequela
 S12090A Other displaced fracture of first cervical vertebra, initial encounter for closed fracture
 S12090B Other displaced fracture of first cervical vertebra, initial encounter for open fracture
 S12090S Other displaced fracture of first cervical vertebra, sequela
 S12091A Other nondisplaced fracture of first cervical vertebra, initial encounter for closed fracture
 S12091B Other nondisplaced fracture of first cervical vertebra, initial encounter for open fracture
 S12091S Other nondisplaced fracture of first cervical vertebra, sequela
 S12100A Unspecified displaced fracture of second cervical vertebra, initial encounter for closed fracture
 S12100B Unspecified displaced fracture of second cervical vertebra, initial encounter for open fracture
 S12100S Unspecified displaced fracture of second cervical vertebra, sequela
 S12101A Unspecified nondisplaced fracture of second cervical vertebra, initial encounter for closed fracture
 S12101B Unspecified nondisplaced fracture of second cervical vertebra, initial encounter for open fracture

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S12101S Unspecified nondisplaced fracture of second cervical vertebra, sequela
S12110A Anterior displaced Type II dens fracture, initial encounter for closed fracture
S12110B Anterior displaced Type II dens fracture, initial encounter for open fracture
S12110S Anterior displaced Type II dens fracture, sequela
S12111A Posterior displaced Type II dens fracture, initial encounter for closed fracture
S12111B Posterior displaced Type II dens fracture, initial encounter for open fracture
S12111S Posterior displaced Type II dens fracture, sequela
S12112A Nondisplaced Type II dens fracture, initial encounter for closed fracture
S12112B Nondisplaced Type II dens fracture, initial encounter for open fracture
S12112S Nondisplaced Type II dens fracture, sequela
S12120A Other displaced dens fracture, initial encounter for closed fracture
S12120B Other displaced dens fracture, initial encounter for open fracture
S12120S Other displaced dens fracture, sequela
S12121A Other nondisplaced dens fracture, initial encounter for closed fracture
S12121B Other nondisplaced dens fracture, initial encounter for open fracture
S12121S Other nondisplaced dens fracture, sequela
S12130A Unspecified traumatic displaced spondylolisthesis of second cervical vertebra, initial encounter for closed fracture
S12130B Unspecified traumatic displaced spondylolisthesis of second cervical vertebra, initial encounter for open fracture
S12130S Unspecified traumatic displaced spondylolisthesis of second cervical vertebra, sequela
S12131A Unspecified traumatic nondisplaced spondylolisthesis of second cervical vertebra, initial encounter for closed fracture
S12131B Unspecified traumatic nondisplaced spondylolisthesis of second cervical vertebra, initial encounter for open fracture
S12131S Unspecified traumatic nondisplaced spondylolisthesis of second cervical vertebra, sequela
S1214xA Type III traumatic spondylolisthesis of second cervical vertebra, initial encounter for closed fracture
S1214xB Type III traumatic spondylolisthesis of second cervical vertebra, initial encounter for open fracture
S1214xS Type III traumatic spondylolisthesis of second cervical vertebra, sequela
S12150A Other traumatic displaced spondylolisthesis of second cervical vertebra, initial encounter for closed fracture
S12150B Other traumatic displaced spondylolisthesis of second cervical vertebra, initial encounter for open fracture
S12150S Other traumatic displaced spondylolisthesis of second cervical vertebra, sequela
S12151A Other traumatic nondisplaced spondylolisthesis of second cervical vertebra, initial encounter for closed fracture
S12151B Other traumatic nondisplaced spondylolisthesis of second cervical vertebra, initial encounter for open fracture
S12151S Other traumatic nondisplaced spondylolisthesis of second cervical vertebra, sequela
S12190A Other displaced fracture of second cervical vertebra, initial encounter for closed fracture
S12190B Other displaced fracture of second cervical vertebra, initial encounter for open fracture
S12190S Other displaced fracture of second cervical vertebra, sequela
S12191A Other nondisplaced fracture of second cervical vertebra, initial encounter for closed fracture
S12191B Other nondisplaced fracture of second cervical vertebra, initial encounter for open fracture
S12191S Other nondisplaced fracture of second cervical vertebra, sequela
S12200A Unspecified displaced fracture of third cervical vertebra, initial encounter for closed fracture
S12200B Unspecified displaced fracture of third cervical vertebra, initial encounter for open fracture
S12200S Unspecified displaced fracture of third cervical vertebra, sequela
S12201A Unspecified nondisplaced fracture of third cervical vertebra, initial encounter for closed fracture
S12201B Unspecified nondisplaced fracture of third cervical vertebra, initial encounter for open fracture
S12201S Unspecified nondisplaced fracture of third cervical vertebra, sequela
S12230A Unspecified traumatic displaced spondylolisthesis of third cervical vertebra, initial encounter for closed fracture
S12230B Unspecified traumatic displaced spondylolisthesis of third cervical vertebra, initial encounter for open fracture
S12230S Unspecified traumatic displaced spondylolisthesis of third cervical vertebra, sequela
S12231A Unspecified traumatic nondisplaced spondylolisthesis of third cervical vertebra, initial encounter for closed fracture
S12231B Unspecified traumatic nondisplaced spondylolisthesis of third cervical vertebra, initial encounter for open fracture
S12231S Unspecified traumatic nondisplaced spondylolisthesis of third cervical vertebra, sequela
S1224xA Type III traumatic spondylolisthesis of third cervical vertebra, initial encounter for closed fracture
S1224xB Type III traumatic spondylolisthesis of third cervical vertebra, initial encounter for open fracture
S1224xS Type III traumatic spondylolisthesis of third cervical vertebra, sequela
S12250A Other traumatic displaced spondylolisthesis of third cervical vertebra, initial encounter for closed fracture
S12250B Other traumatic displaced spondylolisthesis of third cervical vertebra, initial encounter for open fracture
S12250S Other traumatic displaced spondylolisthesis of third cervical vertebra, sequela
S12251A Other traumatic nondisplaced spondylolisthesis of third cervical vertebra, initial encounter for closed fracture
S12251B Other traumatic nondisplaced spondylolisthesis of third cervical vertebra, initial encounter for open fracture
S12251S Other traumatic nondisplaced spondylolisthesis of third cervical vertebra, sequela

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S12290A Other displaced fracture of third cervical vertebra, initial encounter for closed fracture
S12290B Other displaced fracture of third cervical vertebra, initial encounter for open fracture
S12290S Other displaced fracture of third cervical vertebra, sequela
S12291A Other nondisplaced fracture of third cervical vertebra, initial encounter for closed fracture
S12291B Other nondisplaced fracture of third cervical vertebra, initial encounter for open fracture
S12291S Other nondisplaced fracture of third cervical vertebra, sequela
S12300A Unspecified displaced fracture of fourth cervical vertebra, initial encounter for closed fracture
S12300B Unspecified displaced fracture of fourth cervical vertebra, initial encounter for open fracture
S12300S Unspecified displaced fracture of fourth cervical vertebra, sequela
S12301A Unspecified nondisplaced fracture of fourth cervical vertebra, initial encounter for closed fracture
S12301B Unspecified nondisplaced fracture of fourth cervical vertebra, initial encounter for open fracture
S12301S Unspecified nondisplaced fracture of fourth cervical vertebra, sequela
S12330A Unspecified traumatic displaced spondylolisthesis of fourth cervical vertebra, initial encounter for closed fracture
S12330B Unspecified traumatic displaced spondylolisthesis of fourth cervical vertebra, initial encounter for open fracture
S12330S Unspecified traumatic displaced spondylolisthesis of fourth cervical vertebra, sequela
S12331A Unspecified traumatic nondisplaced spondylolisthesis of fourth cervical vertebra, initial encounter for closed fracture
S12331B Unspecified traumatic nondisplaced spondylolisthesis of fourth cervical vertebra, initial encounter for open fracture
S12331S Unspecified traumatic nondisplaced spondylolisthesis of fourth cervical vertebra, sequela
S1234xA Type III traumatic spondylolisthesis of fourth cervical vertebra, initial encounter for closed fracture
S1234xB Type III traumatic spondylolisthesis of fourth cervical vertebra, initial encounter for open fracture
S1234xS Type III traumatic spondylolisthesis of fourth cervical vertebra, sequela
S12350A Other traumatic displaced spondylolisthesis of fourth cervical vertebra, initial encounter for closed fracture
S12350B Other traumatic displaced spondylolisthesis of fourth cervical vertebra, initial encounter for open fracture
S12350S Other traumatic displaced spondylolisthesis of fourth cervical vertebra, sequela
S12351A Other traumatic nondisplaced spondylolisthesis of fourth cervical vertebra, initial encounter for closed fracture
S12351B Other traumatic nondisplaced spondylolisthesis of fourth cervical vertebra, initial encounter for open fracture
S12351S Other traumatic nondisplaced spondylolisthesis of fourth cervical vertebra, sequela
S12390A Other displaced fracture of fourth cervical vertebra, initial encounter for closed fracture
S12390B Other displaced fracture of fourth cervical vertebra, initial encounter for open fracture
S12390S Other displaced fracture of fourth cervical vertebra, sequela
S12391A Other nondisplaced fracture of fourth cervical vertebra, initial encounter for closed fracture
S12391B Other nondisplaced fracture of fourth cervical vertebra, initial encounter for open fracture
S12391S Other nondisplaced fracture of fourth cervical vertebra, sequela
S12400A Unspecified displaced fracture of fifth cervical vertebra, initial encounter for closed fracture
S12400B Unspecified displaced fracture of fifth cervical vertebra, initial encounter for open fracture
S12400S Unspecified displaced fracture of fifth cervical vertebra, sequela
S12401A Unspecified nondisplaced fracture of fifth cervical vertebra, initial encounter for closed fracture
S12401B Unspecified nondisplaced fracture of fifth cervical vertebra, initial encounter for open fracture
S12401S Unspecified nondisplaced fracture of fifth cervical vertebra, sequela
S12430A Unspecified traumatic displaced spondylolisthesis of fifth cervical vertebra, initial encounter for closed fracture
S12430B Unspecified traumatic displaced spondylolisthesis of fifth cervical vertebra, initial encounter for open fracture
S12430S Unspecified traumatic displaced spondylolisthesis of fifth cervical vertebra, sequela
S12431A Unspecified traumatic nondisplaced spondylolisthesis of fifth cervical vertebra, initial encounter for closed fracture
S12431B Unspecified traumatic nondisplaced spondylolisthesis of fifth cervical vertebra, initial encounter for open fracture
S12431S Unspecified traumatic nondisplaced spondylolisthesis of fifth cervical vertebra, sequela
S1244xA Type III traumatic spondylolisthesis of fifth cervical vertebra, initial encounter for closed fracture
S1244xB Type III traumatic spondylolisthesis of fifth cervical vertebra, initial encounter for open fracture
S1244xS Type III traumatic spondylolisthesis of fifth cervical vertebra, sequela
S12450A Other traumatic displaced spondylolisthesis of fifth cervical vertebra, initial encounter for closed fracture
S12450B Other traumatic displaced spondylolisthesis of fifth cervical vertebra, initial encounter for open fracture
S12450S Other traumatic displaced spondylolisthesis of fifth cervical vertebra, sequela
S12451A Other traumatic nondisplaced spondylolisthesis of fifth cervical vertebra, initial encounter for closed fracture
S12451B Other traumatic nondisplaced spondylolisthesis of fifth cervical vertebra, initial encounter for open fracture
S12451S Other traumatic nondisplaced spondylolisthesis of fifth cervical vertebra, sequela
S12490A Other displaced fracture of fifth cervical vertebra, initial encounter for closed fracture
S12490B Other displaced fracture of fifth cervical vertebra, initial encounter for open fracture
S12490S Other displaced fracture of fifth cervical vertebra, sequela
S12491A Other nondisplaced fracture of fifth cervical vertebra, initial encounter for closed fracture
S12491B Other nondisplaced fracture of fifth cervical vertebra, initial encounter for open fracture

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S12491S Other nondisplaced fracture of fifth cervical vertebra, sequela
S12500A Unspecified displaced fracture of sixth cervical vertebra, initial encounter for closed fracture
S12500B Unspecified displaced fracture of sixth cervical vertebra, initial encounter for open fracture
S12500S Unspecified displaced fracture of sixth cervical vertebra, sequela
S12501A Unspecified nondisplaced fracture of sixth cervical vertebra, initial encounter for closed fracture
S12501B Unspecified nondisplaced fracture of sixth cervical vertebra, initial encounter for open fracture
S12501S Unspecified nondisplaced fracture of sixth cervical vertebra, sequela
S12530A Unspecified traumatic displaced spondylolisthesis of sixth cervical vertebra, initial encounter for closed fracture
S12530B Unspecified traumatic displaced spondylolisthesis of sixth cervical vertebra, initial encounter for open fracture
S12530S Unspecified traumatic displaced spondylolisthesis of sixth cervical vertebra, sequela
S12531A Unspecified traumatic nondisplaced spondylolisthesis of sixth cervical vertebra, initial encounter for closed fracture
S12531B Unspecified traumatic nondisplaced spondylolisthesis of sixth cervical vertebra, initial encounter for open fracture
S12531S Unspecified traumatic nondisplaced spondylolisthesis of sixth cervical vertebra, sequela
S1254xA Type III traumatic spondylolisthesis of sixth cervical vertebra, initial encounter for closed fracture
S1254xB Type III traumatic spondylolisthesis of sixth cervical vertebra, initial encounter for open fracture
S1254xS Type III traumatic spondylolisthesis of sixth cervical vertebra, sequela
S12550A Other traumatic displaced spondylolisthesis of sixth cervical vertebra, initial encounter for closed fracture
S12550B Other traumatic displaced spondylolisthesis of sixth cervical vertebra, initial encounter for open fracture
S12550S Other traumatic displaced spondylolisthesis of sixth cervical vertebra, sequela
S12551A Other traumatic nondisplaced spondylolisthesis of sixth cervical vertebra, initial encounter for closed fracture
S12551B Other traumatic nondisplaced spondylolisthesis of sixth cervical vertebra, initial encounter for open fracture
S12551S Other traumatic nondisplaced spondylolisthesis of sixth cervical vertebra, sequela
S12590A Other displaced fracture of sixth cervical vertebra, initial encounter for closed fracture
S12590B Other displaced fracture of sixth cervical vertebra, initial encounter for open fracture
S12590S Other displaced fracture of sixth cervical vertebra, sequela
S12591A Other nondisplaced fracture of sixth cervical vertebra, initial encounter for closed fracture
S12591B Other nondisplaced fracture of sixth cervical vertebra, initial encounter for open fracture
S12591S Other nondisplaced fracture of sixth cervical vertebra, sequela
S12600A Unspecified displaced fracture of seventh cervical vertebra, initial encounter for closed fracture
S12600B Unspecified displaced fracture of seventh cervical vertebra, initial encounter for open fracture
S12600S Unspecified displaced fracture of seventh cervical vertebra, sequela
S12601A Unspecified nondisplaced fracture of seventh cervical vertebra, initial encounter for closed fracture
S12601B Unspecified nondisplaced fracture of seventh cervical vertebra, initial encounter for open fracture
S12601S Unspecified nondisplaced fracture of seventh cervical vertebra, sequela
S12630A Unspecified traumatic displaced spondylolisthesis of seventh cervical vertebra, initial encounter for closed fracture
S12630B Unspecified traumatic displaced spondylolisthesis of seventh cervical vertebra, initial encounter for open fracture
S12630S Unspecified traumatic displaced spondylolisthesis of seventh cervical vertebra, sequela
S12631A Unspecified traumatic nondisplaced spondylolisthesis of seventh cervical vertebra, initial encounter for closed fracture
S12631B Unspecified traumatic nondisplaced spondylolisthesis of seventh cervical vertebra, initial encounter for open fracture
S12631S Unspecified traumatic nondisplaced spondylolisthesis of seventh cervical vertebra, sequela
S1264xA Type III traumatic spondylolisthesis of seventh cervical vertebra, initial encounter for closed fracture
S1264xB Type III traumatic spondylolisthesis of seventh cervical vertebra, initial encounter for open fracture
S1264xS Type III traumatic spondylolisthesis of seventh cervical vertebra, sequela
S12650A Other traumatic displaced spondylolisthesis of seventh cervical vertebra, initial encounter for closed fracture
S12650B Other traumatic displaced spondylolisthesis of seventh cervical vertebra, initial encounter for open fracture
S12650S Other traumatic displaced spondylolisthesis of seventh cervical vertebra, sequela
S12651A Other traumatic nondisplaced spondylolisthesis of seventh cervical vertebra, initial encounter for closed fracture
S12651B Other traumatic nondisplaced spondylolisthesis of seventh cervical vertebra, initial encounter for open fracture
S12651S Other traumatic nondisplaced spondylolisthesis of seventh cervical vertebra, sequela
S12690A Other displaced fracture of seventh cervical vertebra, initial encounter for closed fracture
S12690B Other displaced fracture of seventh cervical vertebra, initial encounter for open fracture
S12690S Other displaced fracture of seventh cervical vertebra, sequela
S12691A Other nondisplaced fracture of seventh cervical vertebra, initial encounter for closed fracture
S12691B Other nondisplaced fracture of seventh cervical vertebra, initial encounter for open fracture
S12691S Other nondisplaced fracture of seventh cervical vertebra, sequela
S128xxS Fracture of other parts of neck, sequela
S129xxA Fracture of neck, unspecified, initial encounter
S129xxS Fracture of neck, unspecified, sequela

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S130xxA Traumatic rupture of cervical intervertebral disc, initial encounter
S13100A Subluxation of unspecified cervical vertebrae, initial encounter
S13101A Dislocation of unspecified cervical vertebrae, initial encounter
S13110A Subluxation of C0/C1 cervical vertebrae, initial encounter
S13111A Dislocation of C0/C1 cervical vertebrae, initial encounter
S13120A Subluxation of C1/C2 cervical vertebrae, initial encounter
S13121A Dislocation of C1/C2 cervical vertebrae, initial encounter
S13130A Subluxation of C2/C3 cervical vertebrae, initial encounter
S13131A Dislocation of C2/C3 cervical vertebrae, initial encounter
S13140A Subluxation of C3/C4 cervical vertebrae, initial encounter
S13141A Dislocation of C3/C4 cervical vertebrae, initial encounter
S13150A Subluxation of C4/C5 cervical vertebrae, initial encounter
S13151A Dislocation of C4/C5 cervical vertebrae, initial encounter
S13160A Subluxation of C5/C6 cervical vertebrae, initial encounter
S13161A Dislocation of C5/C6 cervical vertebrae, initial encounter
S13170A Subluxation of C6/C7 cervical vertebrae, initial encounter
S13171A Dislocation of C6/C7 cervical vertebrae, initial encounter
S13180A Subluxation of C7/T1 cervical vertebrae, initial encounter
S13181A Dislocation of C7/T1 cervical vertebrae, initial encounter
S1320xA Dislocation of unspecified parts of neck, initial encounter
S1329xA Dislocation of other parts of neck, initial encounter
S134xxA Sprain of ligaments of cervical spine, initial encounter
S138xxA Sprain of joints and ligaments of other parts of neck, initial encounter
S139xxA Sprain of joints and ligaments of unspecified parts of neck, initial encounter
S161xxA Strain of muscle, fascia and tendon at neck level, initial encounter
S22000A Wedge compression fracture of unspecified thoracic vertebra, initial encounter for closed fracture
S22000B Wedge compression fracture of unspecified thoracic vertebra, initial encounter for open fracture
S22000S Wedge compression fracture of unspecified thoracic vertebra, sequela
S22001A Stable burst fracture of unspecified thoracic vertebra, initial encounter for closed fracture
S22001B Stable burst fracture of unspecified thoracic vertebra, initial encounter for open fracture
S22001S Stable burst fracture of unspecified thoracic vertebra, sequela
S22002A Unstable burst fracture of unspecified thoracic vertebra, initial encounter for closed fracture
S22002B Unstable burst fracture of unspecified thoracic vertebra, initial encounter for open fracture
S22002S Unstable burst fracture of unspecified thoracic vertebra, sequela
S22008A Other fracture of unspecified thoracic vertebra, initial encounter for closed fracture
S22008B Other fracture of unspecified thoracic vertebra, initial encounter for open fracture
S22008S Other fracture of unspecified thoracic vertebra, sequela
S22009A Unspecified fracture of unspecified thoracic vertebra, initial encounter for closed fracture
S22009B Unspecified fracture of unspecified thoracic vertebra, initial encounter for open fracture
S22009S Unspecified fracture of unspecified thoracic vertebra, sequela
S22010A Wedge compression fracture of first thoracic vertebra, initial encounter for closed fracture
S22010B Wedge compression fracture of first thoracic vertebra, initial encounter for open fracture
S22010S Wedge compression fracture of first thoracic vertebra, sequela
S22011A Stable burst fracture of first thoracic vertebra, initial encounter for closed fracture
S22011B Stable burst fracture of first thoracic vertebra, initial encounter for open fracture
S22011S Stable burst fracture of first thoracic vertebra, sequela
S22012A Unstable burst fracture of first thoracic vertebra, initial encounter for closed fracture
S22012B Unstable burst fracture of first thoracic vertebra, initial encounter for open fracture
S22012S Unstable burst fracture of first thoracic vertebra, sequela
S22018A Other fracture of first thoracic vertebra, initial encounter for closed fracture
S22018B Other fracture of first thoracic vertebra, initial encounter for open fracture
S22018S Other fracture of first thoracic vertebra, sequela
S22019A Unspecified fracture of first thoracic vertebra, initial encounter for closed fracture
S22019B Unspecified fracture of first thoracic vertebra, initial encounter for open fracture
S22019S Unspecified fracture of first thoracic vertebra, sequela
S22020A Wedge compression fracture of second thoracic vertebra, initial encounter for closed fracture
S22020B Wedge compression fracture of second thoracic vertebra, initial encounter for open fracture
S22020S Wedge compression fracture of second thoracic vertebra, sequela
S22021A Stable burst fracture of second thoracic vertebra, initial encounter for closed fracture
S22021B Stable burst fracture of second thoracic vertebra, initial encounter for open fracture

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S22021S Stable burst fracture of second thoracic vertebra, sequela
S22022A Unstable burst fracture of second thoracic vertebra, initial encounter for closed fracture
S22022B Unstable burst fracture of second thoracic vertebra, initial encounter for open fracture
S22022S Unstable burst fracture of second thoracic vertebra, sequela
S22028A Other fracture of second thoracic vertebra, initial encounter for closed fracture
S22028B Other fracture of second thoracic vertebra, initial encounter for open fracture
S22028S Other fracture of second thoracic vertebra, sequela
S22029A Unspecified fracture of second thoracic vertebra, initial encounter for closed fracture
S22029B Unspecified fracture of second thoracic vertebra, initial encounter for open fracture
S22029S Unspecified fracture of second thoracic vertebra, sequela
S22030A Wedge compression fracture of third thoracic vertebra, initial encounter for closed fracture
S22030B Wedge compression fracture of third thoracic vertebra, initial encounter for open fracture
S22030S Wedge compression fracture of third thoracic vertebra, sequela
S22031A Stable burst fracture of third thoracic vertebra, initial encounter for closed fracture
S22031B Stable burst fracture of third thoracic vertebra, initial encounter for open fracture
S22031S Stable burst fracture of third thoracic vertebra, sequela
S22032A Unstable burst fracture of third thoracic vertebra, initial encounter for closed fracture
S22032B Unstable burst fracture of third thoracic vertebra, initial encounter for open fracture
S22032S Unstable burst fracture of third thoracic vertebra, sequela
S22038A Other fracture of third thoracic vertebra, initial encounter for closed fracture
S22038B Other fracture of third thoracic vertebra, initial encounter for open fracture
S22038S Other fracture of third thoracic vertebra, sequela
S22039A Unspecified fracture of third thoracic vertebra, initial encounter for closed fracture
S22039B Unspecified fracture of third thoracic vertebra, initial encounter for open fracture
S22039S Unspecified fracture of third thoracic vertebra, sequela
S22040A Wedge compression fracture of fourth thoracic vertebra, initial encounter for closed fracture
S22040B Wedge compression fracture of fourth thoracic vertebra, initial encounter for open fracture
S22040S Wedge compression fracture of fourth thoracic vertebra, sequela
S22041A Stable burst fracture of fourth thoracic vertebra, initial encounter for closed fracture
S22041B Stable burst fracture of fourth thoracic vertebra, initial encounter for open fracture
S22041S Stable burst fracture of fourth thoracic vertebra, sequela
S22042A Unstable burst fracture of fourth thoracic vertebra, initial encounter for closed fracture
S22042B Unstable burst fracture of fourth thoracic vertebra, initial encounter for open fracture
S22042S Unstable burst fracture of fourth thoracic vertebra, sequela
S22048A Other fracture of fourth thoracic vertebra, initial encounter for closed fracture
S22048B Other fracture of fourth thoracic vertebra, initial encounter for open fracture
S22048S Other fracture of fourth thoracic vertebra, sequela
S22049A Unspecified fracture of fourth thoracic vertebra, initial encounter for closed fracture
S22049B Unspecified fracture of fourth thoracic vertebra, initial encounter for open fracture
S22049S Unspecified fracture of fourth thoracic vertebra, sequela
S22050A Wedge compression fracture of T5-T6 vertebra, initial encounter for closed fracture
S22050B Wedge compression fracture of T5-T6 vertebra, initial encounter for open fracture
S22050S Wedge compression fracture of T5-T6 vertebra, sequela
S22051A Stable burst fracture of T5-T6 vertebra, initial encounter for closed fracture
S22051B Stable burst fracture of T5-T6 vertebra, initial encounter for open fracture
S22051S Stable burst fracture of T5-T6 vertebra, sequela
S22052A Unstable burst fracture of T5-T6 vertebra, initial encounter for closed fracture
S22052B Unstable burst fracture of T5-T6 vertebra, initial encounter for open fracture
S22052S Unstable burst fracture of T5-T6 vertebra, sequela
S22058A Other fracture of T5-T6 vertebra, initial encounter for closed fracture
S22058B Other fracture of T5-T6 vertebra, initial encounter for open fracture
S22058S Other fracture of T5-T6 vertebra, sequela
S22059A Unspecified fracture of T5-T6 vertebra, initial encounter for closed fracture
S22059B Unspecified fracture of T5-T6 vertebra, initial encounter for open fracture
S22059S Unspecified fracture of T5-T6 vertebra, sequela
S22060A Wedge compression fracture of T7-T8 vertebra, initial encounter for closed fracture
S22060B Wedge compression fracture of T7-T8 vertebra, initial encounter for open fracture
S22060S Wedge compression fracture of T7-T8 vertebra, sequela
S22061A Stable burst fracture of T7-T8 vertebra, initial encounter for closed fracture
S22061B Stable burst fracture of T7-T8 vertebra, initial encounter for open fracture

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S22061S Stable burst fracture of T7-T8 vertebra, sequela
S22062A Unstable burst fracture of T7-T8 vertebra, initial encounter for closed fracture
S22062B Unstable burst fracture of T7-T8 vertebra, initial encounter for open fracture
S22062S Unstable burst fracture of T7-T8 vertebra, sequela
S22068A Other fracture of T7-T8 thoracic vertebra, initial encounter for closed fracture
S22068B Other fracture of T7-T8 thoracic vertebra, initial encounter for open fracture
S22068S Other fracture of T7-T8 thoracic vertebra, sequela
S22069A Unspecified fracture of T7-T8 vertebra, initial encounter for closed fracture
S22069B Unspecified fracture of T7-T8 vertebra, initial encounter for open fracture
S22069S Unspecified fracture of T7-T8 vertebra, sequela
S22070A Wedge compression fracture of T9-T10 vertebra, initial encounter for closed fracture
S22070B Wedge compression fracture of T9-T10 vertebra, initial encounter for open fracture
S22070S Wedge compression fracture of T9-T10 vertebra, sequela
S22071A Stable burst fracture of T9-T10 vertebra, initial encounter for closed fracture
S22071B Stable burst fracture of T9-T10 vertebra, initial encounter for open fracture
S22071S Stable burst fracture of T9-T10 vertebra, sequela
S22072A Unstable burst fracture of T9-T10 vertebra, initial encounter for closed fracture
S22072B Unstable burst fracture of T9-T10 vertebra, initial encounter for open fracture
S22072S Unstable burst fracture of T9-T10 vertebra, sequela
S22078A Other fracture of T9-T10 vertebra, initial encounter for closed fracture
S22078B Other fracture of T9-T10 vertebra, initial encounter for open fracture
S22078S Other fracture of T9-T10 vertebra, sequela
S22079A Unspecified fracture of T9-T10 vertebra, initial encounter for closed fracture
S22079B Unspecified fracture of T9-T10 vertebra, initial encounter for open fracture
S22079S Unspecified fracture of T9-T10 vertebra, sequela
S22080A Wedge compression fracture of T11-T12 vertebra, initial encounter for closed fracture
S22080B Wedge compression fracture of T11-T12 vertebra, initial encounter for open fracture
S22080S Wedge compression fracture of T11-T12 vertebra, sequela
S22081A Stable burst fracture of T11-T12 vertebra, initial encounter for closed fracture
S22081B Stable burst fracture of T11-T12 vertebra, initial encounter for open fracture
S22081S Stable burst fracture of T11-T12 vertebra, sequela
S22082A Unstable burst fracture of T11-T12 vertebra, initial encounter for closed fracture
S22082B Unstable burst fracture of T11-T12 vertebra, initial encounter for open fracture
S22082S Unstable burst fracture of T11-T12 vertebra, sequela
S22088A Other fracture of T11-T12 vertebra, initial encounter for closed fracture
S22088B Other fracture of T11-T12 vertebra, initial encounter for open fracture
S22088S Other fracture of T11-T12 vertebra, sequela
S22089A Unspecified fracture of T11-T12 vertebra, initial encounter for closed fracture
S22089B Unspecified fracture of T11-T12 vertebra, initial encounter for open fracture
S22089S Unspecified fracture of T11-T12 vertebra, sequela
S2220xS Unspecified fracture of sternum, sequela
S2221xS Fracture of manubrium, sequela
S2222xS Fracture of body of sternum, sequela
S2223xS Sternal manubrial dissociation, sequela
S2224xS Fracture of xiphoid process, sequela
S2231xS Fracture of rib, right side, sequela
S2232xS Fracture of rib, left side, sequela
S2239xS Fracture of rib, unspecified side, sequela
S2241xS Multiple fractures of ribs, right side, sequela
S2242xS Multiple fractures of ribs, left side, sequela
S2243xS Multiple fractures of ribs, bilateral, sequela
S2249xS Multiple fractures of ribs, unspecified side, sequela
S2251xS Flail chest, right side, sequela
S2252xS Flail chest, left side, sequela
S2253xS Flail chest, bilateral, sequela
S2259xS Flail chest, unspecified side, sequela
S229xxS Fracture of bony thorax, part unspecified, sequela
S230xxA Traumatic rupture of thoracic intervertebral disc, initial encounter
S23100A Subluxation of unspecified thoracic vertebra, initial encounter
S23101A Dislocation of unspecified thoracic vertebra, initial encounter

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S23110A Subluxation of T1/T2 thoracic vertebra, initial encounter
S23111A Dislocation of T1/T2 thoracic vertebra, initial encounter
S23120A Subluxation of T2-T3 thoracic vertebra, initial encounter
S23121A Dislocation of T2-T3 thoracic vertebra, initial encounter
S23122A Subluxation of T3/T4 thoracic vertebra, initial encounter
S23123A Dislocation of T3/T4 thoracic vertebra, initial encounter
S23130A Subluxation of T4/T5 thoracic vertebra, initial encounter
S23131A Dislocation of T4-T5 thoracic vertebra, initial encounter
S23132A Subluxation of T5/T6 thoracic vertebra, initial encounter
S23133A Dislocation of T5/T6 thoracic vertebra, initial encounter
S23140A Subluxation of T6/T7 thoracic vertebra, initial encounter
S23141A Dislocation of T6-T7 thoracic vertebra, initial encounter
S23142A Subluxation of T7-T8 thoracic vertebra, initial encounter
S23143A Dislocation of T7/T8 thoracic vertebra, initial encounter
S23150A Subluxation of T8/T9 thoracic vertebra, initial encounter
S23151A Dislocation of T8/T9 thoracic vertebra, initial encounter
S23152A Subluxation of T9/T10 thoracic vertebra, initial encounter
S23153A Dislocation of T9/T10 thoracic vertebra, initial encounter
S23160A Subluxation of T10/T11 thoracic vertebra, initial encounter
S23161A Dislocation of T10/T11 thoracic vertebra, initial encounter
S23162A Subluxation of T11/T12 thoracic vertebra, initial encounter
S23163A Dislocation of T11/T12 thoracic vertebra, initial encounter
S23170A Subluxation of T12/L1 thoracic vertebra, initial encounter
S23171A Dislocation of T12/L1 thoracic vertebra, initial encounter
S2320xA Dislocation of unspecified part of thorax, initial encounter
S2329xA Dislocation of other parts of thorax, initial encounter
S233xxA Sprain of ligaments of thoracic spine, initial encounter
S238xxA Sprain of other parts of thorax, initial encounter
S239xxA Sprain of unspecified parts of thorax, initial encounter
S32000A Wedge compression fracture of unspecified lumbar vertebra, initial encounter for closed fracture
S32000B Wedge compression fracture of unspecified lumbar vertebra, initial encounter for open fracture
S32000S Wedge compression fracture of unspecified lumbar vertebra, sequela
S32001A Stable burst fracture of unspecified lumbar vertebra, initial encounter for closed fracture
S32001B Stable burst fracture of unspecified lumbar vertebra, initial encounter for open fracture
S32001S Stable burst fracture of unspecified lumbar vertebra, sequela
S32002A Unstable burst fracture of unspecified lumbar vertebra, initial encounter for closed fracture
S32002B Unstable burst fracture of unspecified lumbar vertebra, initial encounter for open fracture
S32002S Unstable burst fracture of unspecified lumbar vertebra, sequela
S32008A Other fracture of unspecified lumbar vertebra, initial encounter for closed fracture
S32008B Other fracture of unspecified lumbar vertebra, initial encounter for open fracture
S32008S Other fracture of unspecified lumbar vertebra, sequela
S32009A Unspecified fracture of unspecified lumbar vertebra, initial encounter for closed fracture
S32009B Unspecified fracture of unspecified lumbar vertebra, initial encounter for open fracture
S32009S Unspecified fracture of unspecified lumbar vertebra, sequela
S32010A Wedge compression fracture of first lumbar vertebra, initial encounter for closed fracture
S32010B Wedge compression fracture of first lumbar vertebra, initial encounter for open fracture
S32010S Wedge compression fracture of first lumbar vertebra, sequela
S32011A Stable burst fracture of first lumbar vertebra, initial encounter for closed fracture
S32011B Stable burst fracture of first lumbar vertebra, initial encounter for open fracture
S32011S Stable burst fracture of first lumbar vertebra, sequela
S32012A Unstable burst fracture of first lumbar vertebra, initial encounter for closed fracture
S32012B Unstable burst fracture of first lumbar vertebra, initial encounter for open fracture
S32012S Unstable burst fracture of first lumbar vertebra, sequela
S32018A Other fracture of first lumbar vertebra, initial encounter for closed fracture
S32018B Other fracture of first lumbar vertebra, initial encounter for open fracture
S32018S Other fracture of first lumbar vertebra, sequela
S32019A Unspecified fracture of first lumbar vertebra, initial encounter for closed fracture
S32019B Unspecified fracture of first lumbar vertebra, initial encounter for open fracture
S32019S Unspecified fracture of first lumbar vertebra, sequela
S32020A Wedge compression fracture of second lumbar vertebra, initial encounter for closed fracture

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S32020B Wedge compression fracture of second lumbar vertebra, initial encounter for open fracture
S32020S Wedge compression fracture of second lumbar vertebra, sequela
S32021A Stable burst fracture of second lumbar vertebra, initial encounter for closed fracture
S32021B Stable burst fracture of second lumbar vertebra, initial encounter for open fracture
S32021S Stable burst fracture of second lumbar vertebra, sequela
S32022A Unstable burst fracture of second lumbar vertebra, initial encounter for closed fracture
S32022B Unstable burst fracture of second lumbar vertebra, initial encounter for open fracture
S32022S Unstable burst fracture of second lumbar vertebra, sequela
S32028A Other fracture of second lumbar vertebra, initial encounter for closed fracture
S32028B Other fracture of second lumbar vertebra, initial encounter for open fracture
S32028S Other fracture of second lumbar vertebra, sequela
S32029A Unspecified fracture of second lumbar vertebra, initial encounter for closed fracture
S32029B Unspecified fracture of second lumbar vertebra, initial encounter for open fracture
S32029S Unspecified fracture of second lumbar vertebra, sequela
S32030A Wedge compression fracture of third lumbar vertebra, initial encounter for closed fracture
S32030B Wedge compression fracture of third lumbar vertebra, initial encounter for open fracture
S32030S Wedge compression fracture of third lumbar vertebra, sequela
S32031A Stable burst fracture of third lumbar vertebra, initial encounter for closed fracture
S32031B Stable burst fracture of third lumbar vertebra, initial encounter for open fracture
S32031S Stable burst fracture of third lumbar vertebra, sequela
S32032A Unstable burst fracture of third lumbar vertebra, initial encounter for closed fracture
S32032B Unstable burst fracture of third lumbar vertebra, initial encounter for open fracture
S32032S Unstable burst fracture of third lumbar vertebra, sequela
S32038A Other fracture of third lumbar vertebra, initial encounter for closed fracture
S32038B Other fracture of third lumbar vertebra, initial encounter for open fracture
S32038S Other fracture of third lumbar vertebra, sequela
S32039A Unspecified fracture of third lumbar vertebra, initial encounter for closed fracture
S32039B Unspecified fracture of third lumbar vertebra, initial encounter for open fracture
S32039S Unspecified fracture of third lumbar vertebra, sequela
S32040A Wedge compression fracture of fourth lumbar vertebra, initial encounter for closed fracture
S32040B Wedge compression fracture of fourth lumbar vertebra, initial encounter for open fracture
S32040S Wedge compression fracture of fourth lumbar vertebra, sequela
S32041A Stable burst fracture of fourth lumbar vertebra, initial encounter for closed fracture
S32041B Stable burst fracture of fourth lumbar vertebra, initial encounter for open fracture
S32041S Stable burst fracture of fourth lumbar vertebra, sequela
S32042A Unstable burst fracture of fourth lumbar vertebra, initial encounter for closed fracture
S32042B Unstable burst fracture of fourth lumbar vertebra, initial encounter for open fracture
S32042S Unstable burst fracture of fourth lumbar vertebra, sequela
S32048A Other fracture of fourth lumbar vertebra, initial encounter for closed fracture
S32048B Other fracture of fourth lumbar vertebra, initial encounter for open fracture
S32048S Other fracture of fourth lumbar vertebra, sequela
S32049A Unspecified fracture of fourth lumbar vertebra, initial encounter for closed fracture
S32049B Unspecified fracture of fourth lumbar vertebra, initial encounter for open fracture
S32049S Unspecified fracture of fourth lumbar vertebra, sequela
S32050A Wedge compression fracture of fifth lumbar vertebra, initial encounter for closed fracture
S32050B Wedge compression fracture of fifth lumbar vertebra, initial encounter for open fracture
S32050S Wedge compression fracture of fifth lumbar vertebra, sequela
S32051A Stable burst fracture of fifth lumbar vertebra, initial encounter for closed fracture
S32051B Stable burst fracture of fifth lumbar vertebra, initial encounter for open fracture
S32051S Stable burst fracture of fifth lumbar vertebra, sequela
S32052A Unstable burst fracture of fifth lumbar vertebra, initial encounter for closed fracture
S32052B Unstable burst fracture of fifth lumbar vertebra, initial encounter for open fracture
S32052S Unstable burst fracture of fifth lumbar vertebra, sequela
S32058A Other fracture of fifth lumbar vertebra, initial encounter for closed fracture
S32058B Other fracture of fifth lumbar vertebra, initial encounter for open fracture
S32058S Other fracture of fifth lumbar vertebra, sequela
S32059A Unspecified fracture of fifth lumbar vertebra, initial encounter for closed fracture
S32059B Unspecified fracture of fifth lumbar vertebra, initial encounter for open fracture
S32059S Unspecified fracture of fifth lumbar vertebra, sequela
S3210xA Unspecified fracture of sacrum, initial encounter for closed fracture

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S3210xB Unspecified fracture of sacrum, initial encounter for open fracture
S3210xS Unspecified fracture of sacrum, sequela
S32110A Nondisplaced Zone I fracture of sacrum, initial encounter for closed fracture
S32110B Nondisplaced Zone I fracture of sacrum, initial encounter for open fracture
S32110S Nondisplaced Zone I fracture of sacrum, sequela
S32111A Minimally displaced Zone I fracture of sacrum, initial encounter for closed fracture
S32111B Minimally displaced Zone I fracture of sacrum, initial encounter for open fracture
S32111S Minimally displaced Zone I fracture of sacrum, sequela
S32112A Severely displaced Zone I fracture of sacrum, initial encounter for closed fracture
S32112B Severely displaced Zone I fracture of sacrum, initial encounter for open fracture
S32112S Severely displaced Zone I fracture of sacrum, sequela
S32119A Unspecified Zone I fracture of sacrum, initial encounter for closed fracture
S32119B Unspecified Zone I fracture of sacrum, initial encounter for open fracture
S32119S Unspecified Zone I fracture of sacrum, sequela
S32120A Nondisplaced Zone II fracture of sacrum, initial encounter for closed fracture
S32120B Nondisplaced Zone II fracture of sacrum, initial encounter for open fracture
S32120S Nondisplaced Zone II fracture of sacrum, sequela
S32121A Minimally displaced Zone II fracture of sacrum, initial encounter for closed fracture
S32121B Minimally displaced Zone II fracture of sacrum, initial encounter for open fracture
S32121S Minimally displaced Zone II fracture of sacrum, sequela
S32122A Severely displaced Zone II fracture of sacrum, initial encounter for closed fracture
S32122B Severely displaced Zone II fracture of sacrum, initial encounter for open fracture
S32122S Severely displaced Zone II fracture of sacrum, sequela
S32129A Unspecified Zone II fracture of sacrum, initial encounter for closed fracture
S32129B Unspecified Zone II fracture of sacrum, initial encounter for open fracture
S32129S Unspecified Zone II fracture of sacrum, sequela
S32130A Nondisplaced Zone III fracture of sacrum, initial encounter for closed fracture
S32130B Nondisplaced Zone III fracture of sacrum, initial encounter for open fracture
S32130S Nondisplaced Zone III fracture of sacrum, sequela
S32131A Minimally displaced Zone III fracture of sacrum, initial encounter for closed fracture
S32131B Minimally displaced Zone III fracture of sacrum, initial encounter for open fracture
S32131S Minimally displaced Zone III fracture of sacrum, sequela
S32132A Severely displaced Zone III fracture of sacrum, initial encounter for closed fracture
S32132B Severely displaced Zone III fracture of sacrum, initial encounter for open fracture
S32132S Severely displaced Zone III fracture of sacrum, sequela
S32139A Unspecified Zone III fracture of sacrum, initial encounter for closed fracture
S32139B Unspecified Zone III fracture of sacrum, initial encounter for open fracture
S32139S Unspecified Zone III fracture of sacrum, sequela
S3214xA Type 1 fracture of sacrum, initial encounter for closed fracture
S3214xB Type 1 fracture of sacrum, initial encounter for open fracture
S3214xS Type 1 fracture of sacrum, sequela
S3215xA Type 2 fracture of sacrum, initial encounter for closed fracture
S3215xB Type 2 fracture of sacrum, initial encounter for open fracture
S3215xS Type 2 fracture of sacrum, sequela
S3216xA Type 3 fracture of sacrum, initial encounter for closed fracture
S3216xB Type 3 fracture of sacrum, initial encounter for open fracture
S3216xS Type 3 fracture of sacrum, sequela
S3217xA Type 4 fracture of sacrum, initial encounter for closed fracture
S3217xB Type 4 fracture of sacrum, initial encounter for open fracture
S3217xS Type 4 fracture of sacrum, sequela
S3219xA Other fracture of sacrum, initial encounter for closed fracture
S3219xB Other fracture of sacrum, initial encounter for open fracture
S3219xS Other fracture of sacrum, sequela
S322xxA Fracture of coccyx, initial encounter for closed fracture
S322xxB Fracture of coccyx, initial encounter for open fracture
S322xxS Fracture of coccyx, sequela
S32301S Unspecified fracture of ilium, right side, sequela
S32302S Unspecified fracture of ilium, left side, sequela
S32309S Unspecified fracture of ilium, unspecified side, sequela
S32311S Displaced avulsion fracture of ilium, right side, sequela

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S32312S Displaced avulsion fracture of ilium, left side, sequela
S32313S Displaced avulsion fracture of ilium, unspecified side, sequela
S32314S Nondisplaced avulsion fracture of ilium, right side, sequela
S32315S Nondisplaced avulsion fracture of ilium, left side, sequela
S32316S Nondisplaced avulsion fracture of ilium, unspecified side, sequela
S32391S Other fracture of ilium, right side, sequela
S32392S Other fracture of ilium, left side, sequela
S32399S Other fracture of ilium, unspecified side, sequela
S32401S Unspecified fracture of acetabulum, right side, sequela
S32402S Unspecified fracture of acetabulum, left side, sequela
S32409S Unspecified fracture of acetabulum, unspecified side, sequela
S32411S Displaced fracture of anterior wall of acetabulum, right side, sequela
S32412S Displaced fracture of anterior wall of acetabulum, left side, sequela
S32413S Displaced fracture of anterior wall of acetabulum, unspecified side, sequela
S32414S Nondisplaced fracture of anterior wall of acetabulum, right side, sequela
S32415S Nondisplaced fracture of anterior wall of acetabulum, left side, sequela
S32416S Nondisplaced fracture of anterior wall of acetabulum, unspecified side, sequela
S32421S Displaced fracture of posterior wall of acetabulum, right side, sequela
S32422S Displaced fracture of posterior wall of acetabulum, left side, sequela
S32423S Displaced fracture of posterior wall of acetabulum, unspecified side, sequela
S32424S Nondisplaced fracture of posterior wall of acetabulum, right side, sequela
S32425S Nondisplaced fracture of posterior wall of acetabulum, left side, sequela
S32426S Nondisplaced fracture of posterior wall of acetabulum, unspecified side, sequela
S32431S Displaced fracture of anterior column [iliopubic] of acetabulum, right side, sequela
S32432S Displaced fracture of anterior column [iliopubic] of acetabulum, left side, sequela
S32433S Displaced fracture of anterior column [iliopubic] of acetabulum, unspecified side, sequela
S32434S Nondisplaced fracture of anterior column [iliopubic] of acetabulum, right side, sequela
S32435S Nondisplaced fracture of anterior column [iliopubic] of acetabulum, left side, sequela
S32436S Nondisplaced fracture of anterior column [iliopubic] of acetabulum, unspecified side, sequela
S32441S Displaced fracture of posterior column [ilioischial] of acetabulum, right side, sequela
S32442S Displaced fracture of posterior column [ilioischial] of acetabulum, left side, sequela
S32443S Displaced fracture of posterior column [ilioischial] of acetabulum, unspecified side, sequela
S32444S Nondisplaced fracture of posterior column [ilioischial] of acetabulum, right side, sequela
S32445S Nondisplaced fracture of posterior column [ilioischial] of acetabulum, left side, sequela
S32446S Nondisplaced fracture of posterior column [ilioischial] of acetabulum, unspecified side, sequela
S32451S Displaced transverse fracture of acetabulum, right side, sequela
S32452S Displaced transverse fracture of acetabulum, left side, sequela
S32453S Displaced transverse fracture of acetabulum, unspecified side, sequela
S32454S Nondisplaced transverse fracture of acetabulum, right side, sequela
S32455S Nondisplaced transverse fracture of acetabulum, left side, sequela
S32456S Nondisplaced transverse fracture of acetabulum, unspecified side, sequela
S32461S Displaced associated transverse-posterior fracture of acetabulum, right side, sequela
S32462S Displaced associated transverse-posterior fracture of acetabulum, left side, sequela
S32463S Displaced associated transverse-posterior fracture of acetabulum, unspecified side, sequela
S32464S Nondisplaced associated transverse-posterior fracture of acetabulum, right side, sequela
S32465S Nondisplaced associated transverse-posterior fracture of acetabulum, left side, sequela
S32466S Nondisplaced associated transverse-posterior fracture of acetabulum, unspecified side, sequela
S32471S Displaced fracture of medial wall of acetabulum, right side, sequela
S32472S Displaced fracture of medial wall of acetabulum, left side, sequela
S32473S Displaced fracture of medial wall of acetabulum, unspecified side, sequela
S32474S Nondisplaced fracture of medial wall of acetabulum, right side, sequela
S32475S Nondisplaced fracture of medial wall of acetabulum, left side, sequela
S32476S Nondisplaced fracture of medial wall of acetabulum, unspecified side, sequela
S32481S Displaced dome fracture of acetabulum, right side, sequela
S32482S Displaced dome fracture of acetabulum, left side, sequela
S32483S Displaced dome fracture of acetabulum, unspecified side, sequela
S32484S Nondisplaced dome fracture of acetabulum, right side, sequela
S32485S Nondisplaced dome fracture of acetabulum, left side, sequela
S32486S Nondisplaced dome fracture of acetabulum, unspecified side, sequela
S32491S Other fracture of acetabulum, right side, sequela

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S32492S Other fracture of acetabulum, left side, sequela
S32499S Other fracture of acetabulum, unspecified side, sequela
S3250xS Fracture of pubis, sequela
S32511S Fracture of right superior rim of pubis, sequela
S32512S Fracture of left superior rim of pubis, sequela
S32519S Fracture of unspecified superior rim of pubis, sequela
S3259xS Other fracture of pubis, sequela
S32601S Unspecified fracture of ischium, right side, sequela
S32602S Unspecified fracture of ischium, left side, sequela
S32609S Unspecified fracture of ischium, unspecified side, sequela
S32611S Displaced avulsion fracture of ischium, right side, sequela
S32612S Displaced avulsion fracture of ischium, left side, sequela
S32613S Displaced avulsion fracture of ischium, unspecified side, sequela
S32614S Nondisplaced avulsion fracture of ischium, right side, sequela
S32615S Nondisplaced avulsion fracture of ischium, left side, sequela
S32616S Nondisplaced avulsion fracture of ischium, unspecified side, sequela
S32691S Other fracture of ischium, right side, sequela
S32692S Other fracture of ischium, left side, sequela
S32699S Other fracture of ischium, unspecified side, sequela
S32810S Multiple fractures of pelvis with stable disruption of pelvic circle, sequela
S32811S Multiple fractures of pelvis with unstable disruption of pelvic circle, sequela
S3289xS Fracture of other parts of pelvis, sequela
S329xxS Fracture of unspecified parts of lumbosacral spine and pelvis, sequela
S330xxA Traumatic rupture of lumbar intervertebral disc, initial encounter
S33100A Subluxation of unspecified lumbar vertebra, initial encounter
S33101A Dislocation of unspecified lumbar vertebra, initial encounter
S33110A Subluxation of L1/L2 lumbar vertebra, initial encounter
S33111A Dislocation of L1/L2 lumbar vertebra, initial encounter
S33120A Subluxation of L2/L3 lumbar vertebra, initial encounter
S33121A Dislocation of L2/L3 lumbar vertebra, initial encounter
S33130A Subluxation of L3/L4 lumbar vertebra, initial encounter
S33131A Dislocation of L3/L4 lumbar vertebra, initial encounter
S33140A Subluxation of L4/L5 lumbar vertebra, initial encounter
S33141A Dislocation of L4/L5 lumbar vertebra, initial encounter
S332xxA Dislocation of sacroiliac and sacrococcygeal joint, initial encounter
S335xxA Sprain of ligaments of lumbar spine, initial encounter
S336xxA Sprain of sacroiliac joint, initial encounter
S338xxA Sprain of other parts of lumbar spine and pelvis, initial encounter
S339xxA Sprain of unspecified parts of lumbar spine and pelvis, initial encounter