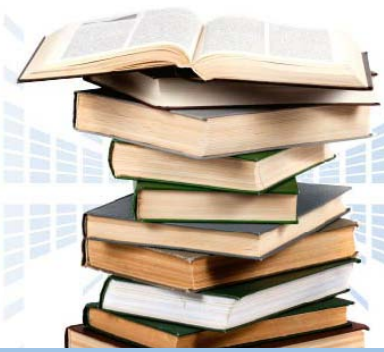


# The Impact of ICD-10 on Coding and Reimbursement for Cardiac Rhythm Management Procedures



## Whitepaper

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### Introduction

U.S. health care providers are mandated to transition from ICD-9 to ICD-10 on October 1, 2013. In preparation for the transition, the Centers for Medicare and Medicaid Services (CMS) and the Centers for Disease Control and Prevention created the General Equivalence Mappings (GEMs) to ensure consistent national data when the US makes the transition. The GEMs function as a translation dictionary between ICD-9-CM and ICD-10-CM/PCS. The GEMs are not intended to be a substitute for correct use of ICD-9-CM and ICD-10-CM/PCS. Rather, the GEMs should be used to look up the applicable codes after a generally equivalent code is located.

In preparation for the transition, a key consideration for providers today includes making adjustments to clinical documentation that prepares the medical record for ICD-10 coding in 2013. To explore this issue, we examined sample Cardiac Rhythm Management procedure scenarios to uncover the issues that may arise with ICD-10 coding and MS-DRG grouping.

### Methodology

Three typical cardiac rhythm management procedure scenarios were coded with ICD-9 diagnosis and procedure codes:

- Initial Pacemaker Insertion;
- Implantable Cardioverter/Defibrillator (ICD) Insertion; and
- Upgrade from ICD to Cardiac Resynchronization Therapy Device (CRT-D).

The relevant ICD-9-CM primary and secondary diagnosis codes and the ICD-9-CM procedure codes for these scenarios were entered into the CMS Medicare Severity Diagnosis Related Grouper (MS-DRG Grouper) to arrive at a 2011 MS-DRG assignment.

A 2-tiered approach was used for mapping ICD-9 codes to ICD-10 codes.

For the first pass, we followed the protocol recommended by CMS during their May 18, 2011 teleconference. In this approach, the GEMS map was used to map the ICD-9 to generally equivalent ICD-10 code(s). The ICD-10 code was then validated by examining the code description. We went beyond the CMS approach by considering the mapping in all three maps (forward, backward and reimbursement) and by reviewing the instructional notes associated with each ICD-10 code.

For the second pass, we performed a key word search of the ICD-10 data set for search terms provided in the clinical scenario, key words from the original ICD-9 code description, and key words provided in the descriptions of the mapped ICD-10 codes. This second approach often yielded more appropriate procedure and diagnosis descriptions than those provided by the maps. After the ICD-10-CM primary and secondary diagnoses codes and the ICD-10-PCS procedure codes were determined, these were entered into the MS-DRG Grouper to arrive at an MS-DRG assignment.

Translation Approach used by CMS	Extended Approach
1. Using GEMs, map from ICD-9-CM Code to generally equivalent ICD-10-CM Code 2. Look up the description of that ICD-10 code to confirm that it looks like a good fit.	1. Using the DESCRIPTION of the diagnosis, determine the appropriate ICD-10 code(s). Reference GEMs to find better search terms when the terminology in I-9 and I-10 is very different.
Resources used by CMS	MediRegs Resources
In their May 18, 2011 presentation, CMS used 2 contractors and an MS Access database to complete their project. They discussed the need for complex SQL joins, and assistance with exporting codes and descriptions from the publically available data.	The MediRegs ICD-10 Explorer tool is a simple interface that integrates ICD-9-CM codes and descriptions, ICD-10-CM codes and descriptions, and all three of the government maps. No SQL, no complicated contracts, no cost beyond a MediRegs Coding Suite subscription

### Findings

#### Mapping from ICD-9 to ICD-10

Several issues arose in translating ICD-9 codes to ICD-10.

It will no longer be possible to capture the multiple components of a cardiac rhythm management device implantation with a single code. Rather, each component of the device system must be coded separately, and when the device is replaced, removal of each component of the device must be separately coded.

For example, 37.94 (Implantation or replacement of automatic cardioverter/defibrillator, total system) maps to a number of codes. Replacement of an AICD generator and lead might

be coded in ICD-10 with removal of the generator (OJPTOPZ) plus insertion of the generator (OJH60P4) and removal of the lead (O2PA3MZ) plus insertion of the lead into the right ventricle(O2HK3ME).

Note that the GEMs present some medically unlikely options for coding. As an example, O2H60ME is among the codes mapped to 37.94. O2H60ME describes open insertion of a defibrillator lead into the right atrium; defibrillator leads are not placed in the right atrium but in the right ventricle, and these leads are typically placed percutaneously. We came across numerous similar examples.

The language of ICD-10 may present some challenges for coders. For example:

- Whereas ICD-9 described the implantation of devices, ICD-10 uses the term “insertion.”
- ICD-10 uses different terminology, such as lead or electrode, to refer to the same device during different operations.
- The term “cardiac electrode” does not appear in ICD-10-PCS, although it does appear in ICD-10-CM.
- Physician documentation is sometimes inconsistent with the language of ICD-10, most likely because the language of CPT is not consistent with the language of ICD-10. For instance, the CPT descriptor for the removal of a cardiac lead uses different terminology than ICD-10:  
-CPT 33244: Removal of single or dual chamber pacing cardioverter-defibrillator electrode(s); by transvenous extraction

-Note that CPT refers to cardiac leads as “electrodes” and does not include the term “percutaneous” in the descriptor, although transvenous extraction is a percutaneous procedure.

-In contrast, the ICD-10-PCS code for this procedure is removal, percutaneous, cardiac lead.

- Consistency in physician documentation will be critical to accurate coding in ICD-10. The challenge is for the physician to provide documentation that allows both the hospital coder and the physician coder to accurately code procedures, since the language of the two coding systems differs.

#### MS-DRG Grouping

Two of the three case scenarios that were translated from ICD-9 to ICD-10 were grouped to appropriate and identical MS-DRGs. However, there appear to be some issues in translating the MS-DRG grouping from ICD-9 to ICD-10. For a pacemaker insertion grouped with ICD-9, the discharge is grouped to MS-DRG 224: Permanent cardiac pacemaker implant w/o CC/MCC. However, when we translated the ICD-9 codes to ICD-10 and input them into the grouper, the discharge was assigned to MS-DRG 310, Cardiac arrhythmia & conduction disorders w/o CC/MCC. We anticipate that other issues with grouping may potentially arise. Obviously, this will have a significant impact on hospital payment if these issues are not corrected prior to 2013.

#### Discussion

Due to the complexity and intricacies of ICD-10 coding as compared with ICD-9, mass machine conversion to ICD-10 is unlikely. Even with great electronic tools at the provider's disposal, ultimately ICD-10 codes must be manually validated based on documentation in the medical record. It will not be possible to utilize a mapping tool that attempts to convert claims

Example Code Translation and Mapping		
Sample Clinical Scenario	2011 ICD-9 Coding/ Grouping	2011 ICD-10 Coding/Grouping
<p><b>Initial Pacemaker Insertion</b></p> <p>A 65-year male presented to the emergency room after suddenly losing consciousness while at home. Physical examination was normal except for a pulse rate of 34 bpm and a blood pressure of 70/40 mm Hg. An electrocardiogram demonstrated complete heart block with an atrial rate of 108 bpm and a ventricular rate of 34 bpm with a wide QRS. Insertion of a permanent dual-chamber pacemaker system to provide dual chamber physiologic pacing is indicated.</p>	<p><b>Admitting/Principal Dx:</b></p> <p><b>426.0</b> Atrioventricular block, complete</p> <p><b>Procedures:</b></p> <p><b>37.72</b> Initial insertion of transvenous leads [electrodes] into atrium and ventricle</p> <p><b>37.83</b> Initial insertion of dual-chamber device</p> <p><b>MS-DRG Group:</b></p> <p><b>244</b> Permanent cardiac pacemaker implant w/o CC/MCC [Weight 02.0398]</p>	<p><b>Admitting/Principal Dx:</b></p> <p><b>I44.2</b> Atrioventricular block, complete</p> <p><b>Procedures:</b></p> <p><b>O2HK3MA</b> Insertion of Pacemaker Lead into Right Ventricle, Percutaneous Approach</p> <p><b>O2H63MA</b> Insertion of Pacemaker Lead into Right Atrium, Percutaneous Approach</p> <p><b>OJH60P2</b> Insertion of Dual Chamber Pacemaker into Chest Subcutaneous Tissue and Fascia, Open Approach</p> <p><b>MS-DRG Group:</b></p> <p><b>310</b> Cardiac arrhythmia &amp; conduction disorders w/o CC/MCC [Weight 0.5709]</p>
	<p><b>Mapping Issues:</b></p> <p><b>426.0</b> maps to <b>I44.2</b> Atrioventricular block, complete in all 3 maps. Key word search for complete heart block confirms this diagnosis.</p> <p><b>37.72</b> maps only in I9 to I10 GEM to multiple PCS codes, all in the O2H series.</p> <p><b>37.83</b> maps the same in all 3 government maps to four codes in the OJH series.</p>	

en masse. Potential issues with MS-DRG grouping are yet to be uncovered pending the release of the 2012 code set and grouper.

#### Solutions

Wolters Kluwer Law & Business has developed ICD-10, MS-DRG and translation tools for the Coding Suite product line that will streamline the process of GEMs utilization, allowing the user to expediently zero in on appropriate codes, and understand MS-DRG grouping and payment logic in the new ICD-10 landscape. For this project, we utilized the current ICD-10 Explorer as well as a beta-version of the MS-DRG Grouper, which includes 2011 ICD-10 code grouping logic. The ICD-10 Explorer allowed us to enter the ICD-9 code(s) from the clinical scenario and to instantly map each code

through GEMs. It also allowed key-word search of ICD-10 codes directly, which is helpful to find adjacent ICD-10 codes that GEMs may have missed. The ICD-10 code search results include coding guidelines, synonyms and instructional notes to ensure proper ICD-10 code selection. The MS-DRG Grouper (we were testing the beta version) includes a toggle to allow you to enter either ICD-9 or ICD-10 codes. MediRegs is currently working on a prototype that allows an easy back-and-forth between codes in entered into the MS-DRG grouper to the ICD-10 Explorer. This enhancement will make doing translations like the ones described above a simple task.

The 2012 data set will be available in October (with a code freeze through the 2013 implementation date); we anticipate improvements in the 2012 PCS medical device descriptions that may mitigate some of the issues discussed in this paper. Please look forward to a more detailed white paper when the 2012 codes and MS-DRG grouper are available.

## About Wolters Kluwer Law & Business

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## Appendix

In the 2011 data set, there are the 47 possible devices in the MedSurg section. Some have qualifiers to define specifically what type of device they are. This table illustrates the need for physicians and coders to use consistent clinical terminology for medical devices.

Cardio Devices	Leads & Stents	Others
<p><b>P Cardiac Rhythm Related Device</b></p> <ul style="list-style-type: none"> <li>0 Pacemaker, Single Chamber</li> <li>1 Pacemaker, Single Chamber Rate Responsive</li> <li>2 Pacemaker, Dual Chamber</li> <li>3 Cardiac Resynchronization Pacemaker Pulse Generator</li> <li>4 Defibrillator Generator</li> <li><b>5 Cardiac Resynchronization Defibrillator Pulse Generator</b></li> <li>A Contractility Modulation Device</li> <li>Y Other Cardiac Rhythm Related Device</li> <li>Z No Qualifier</li> </ul> <p>Q Implantable Heart Assist System</p> <p>R External Heart Assist System</p> <ul style="list-style-type: none"> <li>S Biventricular</li> <li>Z No Qualifier</li> </ul> <p>M Stimulator Generator</p> <ul style="list-style-type: none"> <li>6 Single Array</li> <li>7 Dual Array</li> <li>8 Single Array Rechargeable</li> <li>9 Dual Array Rechargeable</li> <li>Z No Qualifier</li> </ul>	<ul style="list-style-type: none"> <li>4 Drug-eluting Intraluminal Device</li> <li>4 Coronary Vein</li> <li>6 Bifurcation</li> <li>T Ductus Arteriosus</li> <li>Z No Qualifier</li> </ul> <p>B Bioactive Intraluminal Device</p> <p>C Extraluminal Device</p> <ul style="list-style-type: none"> <li>C Hemorrhoidal Plexus</li> <li>T Ductus Arteriosus</li> <li>Z No Qualifier</li> </ul> <p>D Intraluminal Device</p> <ul style="list-style-type: none"> <li>3 Duodenum</li> <li>4 Coronary Vein</li> <li>4 Stomach</li> <li>5 Hepatic Duct, Right</li> <li>6 Bifurcation</li> <li>6 Esophagus</li> <li>6 Hepatic Duct, Left</li> <li>7 Hepatic Duct, Caudate</li> <li>8 Cystic Duct</li> <li>9 Common Bile Duct</li> </ul> <p>B Small Intestine</p> <p>C Hemorrhoidal Plexus</p> <p>C Large Intestine</p> <p>T Ductus Arteriosus</p> <p>Y Lower Vein</p> <p>Z No Qualifier</p> <p>M Cardiac Lead</p> <ul style="list-style-type: none"> <li>A Pacemaker Lead</li> <li>E Defibrillator Lead</li> <li>Z No Qualifier</li> </ul> <p>M Diaphragmatic Pacemaker Lead</p> <p>M Stimulator Lead</p>	<ul style="list-style-type: none"> <li>0 Drainage Device</li> <li>1 Radioactive Element</li> <li>2 Monitoring Device</li> <li>3 Infusion Device</li> <li>3 Interbody Fusion Device</li> <li>4 Internal Fixation Device</li> <li>5 External Fixation Device</li> <li>6 Intramedullary Fixation Device</li> <li>7 Autologous Tissue Substitute</li> <li>8 Spacer</li> <li>8 Zooplastic Tissue</li> <li>9 Autologous Venous Tissue</li> <li>9 Liner</li> <li>A Autologous Arterial Tissue</li> <li>B Airway</li> <li>B Resurfacing Device</li> <li>E Endotracheal Airway</li> <li>F Tracheostomy Device</li> <li>G Endobronchial Valve</li> <li>G Pessary</li> <li>H Contraceptive Device</li> <li>J Synthetic Substitute</li> <li>K Nonautologous Tissue Substitute</li> <li>L Artificial Sphincter</li> <li>M Bone Growth Stimulator</li> <li>M Neurostimulator Lead</li> <li>N Neurostimulator Generator</li> <li>N Tissue Expander</li> <li>S Hearing Device</li> <li>T Radioactive Intraluminal Device</li> <li>U Feeding Device</li> <li>V Infusion Pump</li> <li>W Reservoir</li> <li>X Vascular Access Device</li> <li>Y Other Device</li> <li>Z No Device</li> </ul>