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WEDI SNIP ICD-10 Workgroup
ICD-10 Crosswalks Sub Workgroup

White Paper

Redefining Policies, Rules and Categories in ICD-10

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*Partnering for Electronic Delivery
of Information in Healthcare*

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This document is based on the 2011 versions of the ICD-9-CM, volumes 1, 2, and 3 and ICD-10-CM and ICD-10-PCS code sets and related General Equivalency Maps (GEM).

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1. Introduction

This White Paper is the second in a series focused on the challenges and approaches to the process of translating codes between ICD-9 and ICD-10. Specifically this white paper focuses on the methods and issues related to redefining policies, rules and categories that use groups of diagnostic or inpatient hospital procedure codes in algorithms or categories of analysis.

Unlike crosswalking, which represents the specification for the conversion of one code in one standard to one or more codes in the corresponding standard, the process of redefining policies, rules and categories to be consistent with ICD-10 is based on groups of codes as part of a definition of some intent. The process of redefinition is not only about translating codes to ICD-10 but also about accurately representing the intent and purpose of rules, policies and categories based on ICD-10 codes.

Note – For the purpose of this paper, term “ICD-9” will refer generally to ICD-9-CM including both diagnosis and procedure codes and “ICD-10” will refer generally to ICD-10-CM as well as ICD-10-PCS. Where appropriate the specific types of codes will be called out by their more detailed description.

2. The Business Challenges

2.1. Medical Policies

Medical policies provide guidance on the types of services that are deemed appropriate under defined conditions. These policies provide guidance in defining the rules and processes for coverage of services, and appropriateness. The definition and use of these policies varies significantly across organizations. Most policies reference a defined set of services that are deemed either allowed, pending for review or denied based on the type of condition that is associated with the service.

All of the existing policies that reference ICD-9 diagnostic or procedure code will need to be examined and revised to accurately represent the intent of that policy using ICD-10-CM and ICD-10-PCS.

2.2. Processing rules

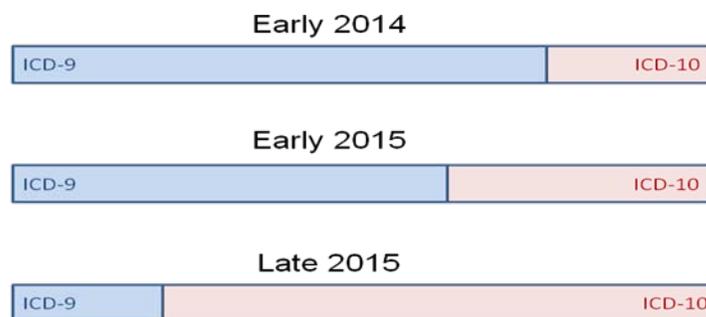
Adjudication and other rules defined to process claims according to coverage or payment requirements may use ICD-9 diagnosis or procedure codes. These rules generally focus on payment amounts, quality metrics, fraud and abuse, and a variety of other business processes in the processing of claims for payment. Though many of these rules may be driven by defined medical policies, some are not and relate only to coverage based upon other criteria. Similar to medical policies, these rules will need to be examined and revised to accurately represent the intent of that policy using ICD-10-CM and ICD-10-PCS. Those processing rules that are dependent on medical policies should stay in synch with the intent of higher level medical policies.

2.3. Analytic Categories

Health care analytics relies on the aggregation of codes to represent some intended category of analysis to meet some business or knowledge objective.

Analysis of patterns of diseases or institutional procedures requires the grouping of codes that represent the intent of those categories. These categories could represent a very few codes or thousands of codes depending on the level of definition and purpose of the category. To assure accurate comparison of categories in different reporting models, the codes representing these categories should be consistent in meaning.

A larger challenge for analytics is the reporting of information where the nature of the patient's condition is described with ICD-9 codes and ICD-10 codes within the same historical set of data. The following graphic depicts the hypothetical content of a 3-year data set over time crossing the ICD-10 implementation date.



During this period of time, when there is a substantial set of data defined in ICD-9 in the historical data set that is part of any analysis, reporting will need to be limited to the level of detail supported by both code standards. Only after the historical data set used in analysis is predominately populated by ICD-10 codes, can the more detailed level of analysis supported by ICD-10 be considered.

2.4. Defining Populations

Diagnosis code grouping may also be used to define groups of patients for identification and assignment to various programs in a health plan. Case management programs, for example, may wish to identify patients with certain diseases to enroll them in a plan's case management program. Patients are identified as claims are submitted with specific codes. Other programs, such as education programs, disease management, special payment models, and even fraud, waste or abuse identification will also use code groupings. The current program rules for identifying conditions using ICD-9 codes will have to be updated for ICD-10 diagnoses and procedures.

3. The Goal of Redefinition

3.1. Assuring accuracy and continuity of processing

After October 1, 2013, payers will continue to receive valid claims that include both ICD-9 and ICD-10 codes based on the date of service or discharge date. This “run out” of claims will be, at a minimum, aligned with the timely filing limits set for each health plan or line of business. The ability to process claims that include either ICD-9 or ICD-10 in a consistent way during this period of time should remain an important part of the claims adjudication strategy. Additionally any historical analysis will occur based on data that includes both code sets as illustrated above. (2.3)

To assure accuracy and continuity of processing, the intent of policies and processing rules should be clearly defined and the appropriate aggregation of codes that represent the intent should be configured to support that intent. The goal of the transition is not to translate ICD-9 to ICD-10 codes, but rather to assure that processing accuracy will continue regardless of the code set used.

3.2. Assuring accurate reporting and decision-making

Most diagnosis-related analysis is based on the reporting where groups of codes are aggregated to a category. These codes represent some higher level condition such as Diabetes, Pneumonia or Fractures of the Spine. Accuracy of analytics is dependent on assuring that the codes that represent these categories include all of the codes that are appropriate and none of the codes that are inappropriate to the intent of the policy, rule or category of analysis. Any reporting or decision support tools must be examined to determine the use of diagnosis or procedure code grouping, and appropriate updating using groups of ICD-10 codes. In a variety of provider related reports, ICD-10 codes may be used for the definition of provider groups or for the attribution of measures to providers.

4. Redefining Intent

4.1. Review of existing policies, rules and categories

The transition to ICD-10 provides an opportunity to improve existing documentation of policies, rules and categories to assure that the intent is clearly stated and the definitions assure consistent interpretation. In a review of a number of existing policies, there appears to be considerable room for improvement in a number of cases. Documentation that leaves too much room for interpretation results in uncertain application in downstream processes. In a number of reviews of currently published policies, the intent of the policy appears contradictory with some codes defined as applicable to the policy when the documented intent of the policy would indicate otherwise.

Example: In a review of an existing policy related to the appropriate use of external electrical field bone growth stimulators, ICD-9 procedure codes included codes related to implantable stimulators even though the policy clearly did not intend to address

implantable stimulators. Additionally, the same policy used codes related to “malunion” as conditions under which the use of these stimulators was considered appropriate while the policy clearly stated that the intent was related to conditions of “nonunion”. In this case, if the policy intent was not reviewed and the existing codes were simply translated through the use of crosswalks, hundreds of new ICD-10 codes would be included in the policy that were clearly outside of the policy intent.

Failure to correct issues or clarify intent will result in the replication of these errors in an ICD-10 environment both internally and externally.

4.2. Redefining to support ICD-10

As noted above, based on a review of existing policies, rules and categories, updated documentation should provide the clearly defined intent to assure that policy implementation downstream meets that intent. It will be helpful, when redefining the intent, to virtually test with those who will be using this documentation to see if their interpretation is consistent with the intent of the responsible author(s).

ICD-10 also provides significant opportunities to refine existing policies, rules and categories to leverage the increased detail including factors related to risk, severity, complications, comorbidities, etiology and other important factors. By using these additional concepts, the precision of processing or analytic intent can be greatly improved.

4.3. Configuration to assure proper application intent

The first step in system configuration to implement policy-related processing is to clearly and accurately define the intent of those policies. The identification of codes required to process or report correctly requires research of ICD-10 code options to assure that all intended codes are included and inappropriate codes are excluded depending on the nature of the rule or category. This requires a clear communication between those authoring policies and those researching codes and configuring systems to assure that system configuration is accurate. This will mean that medical management and business analysts review the proposed codes for configuration to assure that goals are met and any unintended consequences are avoided.

5. Methods of Re-definition

There are two methods which can be used to redefine code groups in ICD-10:

- **Mapping** - Identifying a group of codes in one standard by mapping from an existing group from a different standard. *For the purposes of this paper we will use GEM as the mapping model for code group mapping. Other mapping methods might be used.*
- **Native Redefinition** – Researching for a group of codes to represent some intent independent of the existing standard group of codes. This approach may however use GEM or other mapping approach as a methodology to support that research but would not rely on a crosswalk as the definitive method.

5.1. Mapping - General Equivalency Mapping (GEM) or other mapping tools

GEM files and other mapping files provide a tool to support identifying codes that might be considered as a replacement for a group of existing codes. As noted, for the purpose of this discussion and mapping examples, we will use GEM for illustration.

To appropriately use GEM for this purpose, both the ICD-9 to ICD-10 (forward GEM map) as well as the ICD-10 to ICD-9 (backward GEM map) must be used to identify codes to include in the “equivalent group” based on all GEM-identified codes.

The GEM ICD-9 to ICD-10 map does not contain all possible ICD-10 codes and the ICD-10 to ICD-9 map does not contain all possible ICD-9 codes. To fully identify the equivalent group of ICD-10 codes according to this method, the unique codes from both forward and backward mapping must be considered.

This process includes the following approach:

I. Map a group of ICD-9 codes to a group of ICD-10 codes:

- The GEM 9-to-10 map must be used with the ICD-9 codes defined as “source” codes.
- Additionally the GEM 10-to-9 map must be used with the ICD-9 codes defined as the “target” codes.

II. Map a group of ICD-10 codes to a group of ICD-9 codes:

- The GEM 10-to-9 map must be used with the ICD-10 codes defined as “source” codes.
- Additionally the GEM 9-to-10 map must be used with the ICD-10 codes defined as the “target” codes.

As will be illustrated in examples below, the use of these files may provide support in identifying candidate codes to consider in the redefinition of policies, rules and categories, but cannot provide a complete solution to the goals of accurate definition of intent or the opportunity to leverage advantages of the increased precision offered by ICD-10. The GEMs are a reference and a great starting place. Reference data related to the purpose in conjunction with subject matter experts about the application purpose are critical to the decision making process. Consideration of clinical concepts beyond the scope of the GEMs will provide a more comprehensive approach for accurate conversions of applications.

5.2. Native Redefinition

Native redefinition refers to the process of directly researching the appropriate codes that apply to policies, rules or categories based on the standard definitions in code documentation. Standard code definitions include the descriptions associated with the codes as well as any definition implied by parent-child or other contextual relationships.

Example: In this example, the description for code M10.019 is; “Idiopathic Gout, Left Shoulder” however in looking at a Parent level at the 3-character category and 4-

character sub-category, there is additional information that may apply to this code and would need to be considered.

M10 Gout

- Acute gout
- Gout attack
- Gout flare
- Gout NOS
- Podagra

Use additional code to identify:

- Autonomic neuropathy in diseases classified elsewhere (G99.0)
- Calculus of urinary tract in diseases classified elsewhere (N22)
- Cardiomyopathy in diseases classified elsewhere (I43)
- Disorders of external ear in diseases classified elsewhere (H61.1-, H62.8-)
- Disorders of iris and ciliary body in diseases classified elsewhere (H22)
- Glomerular disorders in diseases classified elsewhere (N08)

Excludes1: chronic gout (M1a-)

M10.0 Idiopathic gout

- Gouty bursitis
- Primary gout

Native redefinition may use a variety of mapping tools to validate or prompt for other research, but does not rely on mapping models as the definitive approach. The goal of ‘native redefinition’ is to define the intent of the policy, rule or category in ICD-10 independent of the codes that were originally used in ICD-9. There are distinct advantages to directly researching codes to define appropriate aggregations as will be discussed subsequently.

Native redefinition is similar to the process of immersion in a new language where you begin to both speak and think in the new language. Just relying on a translator (mapping) may result in significant errors in interpretation due to the way the new language expresses concepts.

6. Code Aggregation Examples

6.1. Respiratory Tuberculosis

In this example, the intent is to define those codes that represent respiratory tuberculosis defined as conditions associated with tuberculosis that refer to some part of the respiratory system. The intent in this example is also to exclude any codes that do not explicitly refer to the respiratory system such as codes that refer to tuberculosis of the spine or unspecified codes. Based on these criteria, the following analysis reveals the results of definition using the following methods.

Native Definition based on ICD-10 codes(7 Codes)

Native Definition based on ICD-9 codes(109 Codes)

GEM based mapping:

In this example, the group of seven ICD-10 codes above is converted to an “equivalent” group of ICD-9 codes based on the GEM forward and backward mapping of the ICD-10 codes.

- **GEM ICD-10 to ICD-9 Backward map(9 Codes)**
- **GEM ICD-9 to ICD-10 Forward map(127 Codes)**

In this example, there are 7 ICD-10 codes and 109 ICD-9 codes that meet the criteria established above based on direct research of the codes sets. If we use the GEM forward and backward method to identify the “equivalent” ICD-9 codes based on the identified ICD-10 codes, we arrive at 127 unique ICD-9 codes. This is obviously more than the ICD-9 codes identified by direct research. Further analysis reveals that the ICD-9 codes identified by GEM that are not identified by direct (native) definition represent codes that are not specifically related to the respiratory system. In this example, our original intent is not met by a GEM translation of the defined group of ICD-10 codes since it includes codes that did not meet the defined criteria.

6.2. Potential Median Nerve Injury

In this example, a rule is used to evaluate incoming claims where a condition of potential median nerve injury (including carpal tunnel syndrome or other median nerve compression) might result in consideration for coordination of benefits with industrial insurance or some third-party liability. Based on these criteria the following analysis reveals the results of definition using the following methods.

Native Redefinition based on ICD-9 codes(3 Codes)

Native Redefinition based on ICD-10 codes(33 Codes)

GEM based mapping:

In this example, the group of 3 ICD-9 codes above is converted to an “equivalent” group of ICD-10 codes based on the GEM forward and backward mapping of the ICD-9 codes.

- **GEM ICD-9 to ICD-10 Forward map (5 Codes)**
- **GEM ICD-10 to ICD-9 Backward map (15 Codes)**

Based on this example, there are 3 ICD-9 codes and 33 ICD-10 codes that meet the criteria established above based on direct research of the codes sets. If we use the GEM forward and backward method to identify the “equivalent” ICD-10 codes based on the identified ICD-9 codes, we arrive at 15 unique ICD-10 codes. This is obviously less than the ICD-10 codes identified by direct research. Further analysis reveals that the ICD-10 codes that are not identified by GEM but are identified by direct (native) definition represent codes that are within the scope of the criteria identified above. In this case, if we just recreated the group of codes based on a mapping of the old (ICD-9) codes using the GEMs, we would miss half of the codes that we intended to include in the rule for identification of potential median nerve injuries. The GEMs are a great starting point and should be used in conjunction with full clinical concepts for the purpose or intent.

6.3. Fractures of the Radius

In this example, a grouping of codes representing a category of analysis is desired to identify the volume and cost of claims related to fractures of the radius. The intent is to include all possible codes that represent conditions where a fracture of the radius might be included in the definition of the code. In this case, all fractures that included the concept of “radius and/or ulna” and “forearm” are to be included in the criteria. Based on these criteria the following analysis reveals the results of definition using the following methods.

Native Definition ICD-9 codes(33 Codes)

Native Definition ICD-10 codes(1818 Codes)

GEM based mapping:

In this example, the group of 33 ICD-9 codes above is converted to an “equivalent” group of ICD-10 codes based on the GEM forward and backward mapping of the ICD-9 codes.

- **GEM ICD-9 to ICD-10 Forward map (51 Codes)**
- **GEM ICD-10 to ICD-9 Backward map (336 Codes)**

In this example, there are 33 ICD-9 codes and 1818 ICD-10 codes that meet the criteria established above based on direct research of the codes sets. If we use the GEM forward and backward method to identify the “equivalent” ICD-10 codes based on the identified ICD-9 codes, we arrive at 349 unique ICD-10 codes. This is obviously less than the ICD-10 codes identified by direct “native” research. Further analysis reveals that the ICD-10 codes that are not identified by GEM but are identified by direct (native) definition represent codes that are within the scope of the criteria identified above. In this case, if we just recreated the group of codes based on a mapping of the old codes, we would not include 1469 of the codes that we intended to include in the group of codes for categorization of fractures potentially involving the radius.

7. The Case for Native Redefinition

There are a number of reasons to consider redefining groups of codes that represent the “intent” of the policy, category or rule based on direct research of the code standard(s) to identify all codes that relate to this intent. This assumes the intent of the policy, rule or category is clearly defined by the appropriate criteria. The process is highly dependent upon content experts in conjunction with understanding of GEMs, translation approaches/process).

Mapping, using both forward and backward mapping approaches is an important part of the research in native redefinition of the codes to meet the intent in ICD-10 by providing confirmation, validation and enhancement of direct research. As illustrated in the examples above however, crosswalking should not be used as the only method to redefine groups or categories of codes for any purpose.

The following represents some of the advantages of “native redefinition” of existing policies, rules and categories, as opposed to only using a mapping approach:

- There is an opportunity to be certain that the “intent” of the original policy, category or rule is clearly defined and articulated so that the proper codes can be selected.
- Merely mapping existing codes will reproduce existing errors where errors in definition currently exist.
- Mapping may result in the inclusion or exclusion of codes that don’t match the intent (as noted in the examples above).
- New concepts supported by ICD-10 may result in a refinement or change in the policy, category or rule.
- Reporting on data sets in ICD-9 to data sets in ICD-10 is more likely to be comparable if the codes from each data set are aggregated directly to the same intent.

8. Testing the Result of Redefinition

Assuming that the intent of policies, rules and category definitions have been updated to be clear and concise with all contradictions and errors removed, there are still substantial areas of risk that could result in processing and reporting that is not consistent with the original intent.

- The definition of the codes that identify the related claims may be incomplete or include codes that did not fit the intended criteria.
- System configuration of codes could have missed codes or added codes as part of the load process.
- The system implementation could have errors in processing codes that result in improper application of codes that have been defined.
- Correction or clarification of the policy intent as a part of the remediation policy may result in changes that are different than just redefining code groups. This may also result in unintended consequences in downstream processing. Additionally there may be impacts on downstream systems
- Assuming accurate definition, configuration and system implementation, the result of the application of the policy or rule thought consistent with the original intent, resulted in unintended actions that might have undesired financial or clinical impacts.

Test plans and test cases related to remediated policies, rules and analytic categories must include the proper content to assure that the risk of unintended consequences is avoided. The following steps should be considered to mitigate this risk.

1. Clinical and business authors of policies, rules and categories should perform a baseline reasonableness assessment of all code sets to assure that they are consistent with the intent.

2. Create a test plan that includes system component testing as well as both internal and external end-to-end testing.
3. Identify clinical and business scenarios that will include all of the potential touch points of policies, rules and categories.
4. Create test cases that specifically define the expected result from each scenario.
5. Based on the test case identification, create “test claims” that include ICD-9 and ICD-10 codes to support permutations of each scenario.
6. Run these test claims through remediated systems and compare to the expected results.
7. Once known errors in definition and processing have been corrected, analyze existing and anticipated claims data models to attempt to predict impacts assuming some anticipated level of provider claim submission given the new ICD-10 codes.
8. Consider redefining policies, rules or categories based on undesirable impacts identified through the testing process.
9. Request submission of test claims with ICD-10 codes based on predefined clinical scenarios in collaboration with providers to test submission challenges as well as to gauge the types of ICD-10 code that might be submitted given the same clinical test scenario.

This collaborative testing gives the provider some assurance about new submission and potential processing changes, and gives the payer an opportunity to be aware of and potentially correct improper coding practices.

9. Definitions

Backward map – Mapping that proceeds from a newer code set to an older code set. (ICD-10 to ICD-9)

Crosswalk (noun) –The specification for the translation of one code within the source code set to one or more codes within the target code set without human intervention. Crosswalk may also be referred to as “map”.

Crosswalk (verb) – The act of translating one code within the source code set to one or more codes within the target code set without human intervention. Crosswalk may also be referred to as “matching” or “mapping”.

Forward map – Mapping that proceeds from an older code set to a newer code set. (ICD-9 to ICD-10)

General Equivalency Mappings (GEMs) – A set of files developed on behalf of the Centers for Medicare & Medicaid Services (CMS) and National Center for Health Statistics (NCHS) to aid in data mapping and the creation of crosswalks between ICD-9 and ICD-10. These files include proposed generally equivalent mapping of ICD-9 and ICD-10 diagnosis and inpatient hospital procedure codes bi-directionally. These files include all plausible translations.

Because all plausible translations are included, there are many instances where human intervention is necessary in order to make decisions on which translations to use.

Native Redefinition – The process of identifying the proper group of codes to represent some intended concept(s) by direct research of the appropriate code standard independent of how the groups of codes were previously defined in a different code standard.

Source Code Set – Code set of origin within the mapping, the code set being mapped “from.”

Target Code Set – Destination code set within the mapping, the code set being mapped “to”

Translation – Translation is the end process of assuring that the information in one code set (e.g., language) represents as accurately as possible the information in another code set (e.g., language).

10. Acknowledgements

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