Managing and Mapping Coded ICD-9-CM Data to ICD-10-CM/PCS

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Although the process of dual coding—assigning both ICD-9-CM and ICD-10-CM/PCS codes at the time of coding—is one way to compare equivalence of the codes, it is too resource-intensive to be practical for every instance where both codes are needed. ICD data mapping can supplement the dual coding process by providing a repository of mapped ICD codes for use in specific applications. ICD mapping is complex and requires careful analysis, planning, and coordination within the organization.[1]

Forming the Mapping Team

Coordination and alignment between health information management (HIM), information technology (IT), operational, clinical, and financial departments is necessary to plan for and execute an effective data mapping strategy. Each section of this cross-functional team has a role to play in the mapping project. HIM's role is to define and maintain ICD code maps and to create policies around the use and application of mapped data. IT's role is to lead efforts to define mapping system requirements, lead the vendor selection process, and facilitate implementation and maintenance of the system for the product's life cycle. The operational, clinical, and financial departments are charged with identifying and communicating mapping needs and with contributing to the development of integrated mapping workflows.

Establishing Mapping Strategy

An organization must define and establish its mapping strategy early in the transition process to ICD-10-CM/PCS. Elements to consider in development of an ICD data mapping strategy include:

- Approved applications for mapped ICD data
- Data governance considerations
- Data conversion alternatives
- Resource requirements including staff and technology
- Workflow considerations
- Data considerations

Once the organization establishes their ICD data mapping strategy, the strategy should be presented to all appropriate committees for consideration and approval. Execution of the strategy can begin once approved by the stakeholders.

Identifying Approved Applications for Mapped Data

Identifying and defining the approved applications for mapped ICD data is the most critical and difficult step in defining a mapping strategy. Members of the cross-functional team bring differing viewpoints to the discussion. Use cases for maps are unique to the purpose for the mapping, and what may be perceived as an acceptable use of mapped data to one group may not be acceptable to another. The organization must reach consensus on the acceptable applications for mapped ICD data for each project.

Potential uses of mapped data include:

- Financial applications

    - Using mapped data comparisons to estimate the impact of the transition to ICD-10-CM/PCS on the entity's revenue
    - Performing analysis and/or reporting that requires data both prior to and after ICD-10-CM/PCS implementation
- Translating patient encounter forms or superbills from ICD-9-CM to ICD-10-CM/PCS
- Conducting systems, claims, and workflow testing, leveraging the equivalence and difference in the coded data sets
- Coding applications, such as the translation of a script or order denoting an ICD-9-CM code for a service being provided post-ICD-10-CM/PCS implementation
- Claims submission and adjudication applications, such as if a payer accepts ICD-10-CM/PCS codes but reimburses based on ICD-9-CM codes; the ICD-10-CM/PCS code is needed to submit the claim, while the mapped ICD-9-CM code is needed to validate payment received in the contract payment compliance system
- Clinical applications used for identification of patient populations, research subjects, or health information exchange purposes that span the ICD-10-CM/PCS date line
- Operational applications that require translating workflows involving ICD-9-CM codes to ICD-10-CM/PCS, such as a core measures workflow process triggered by emergency department triage diagnosis expressed as ICD-9-CM codes

Data Governance Considerations

Some ICD maps are dynamic, and applications of mapped data can have far-reaching effects. Stringent data governance standards for ICD data maps are necessary. The entity's mapped ICD data governance policy should address the accessibility, application, integrity, and security of mapped data.[2] Mapped data governance policies should be approved and enforced by the relevant organization committee(s). HIM's role in ensuring the integrity of map definitions and data must be explicitly stated in the policy.

Mapping Resource Requirements

Creating, administering, and maintaining ICD maps requires a multidisciplinary team and a mapping tool sophisticated enough to manage the organization's complexities. Considerable time is needed to establish the mapping strategy, to implement a technical mapping solution, and to define the ICD maps. Take into consideration the ongoing requirements for maintaining the mapping tool and map definitions compared to outsourcing the work to companies with expertise in this work. Also consider resources required to support data mapping needs that cannot be addressed by the mapping tool (i.e., combination code maps or codes without a map definition).

Some organizations may be able to leverage a simple tool, such as a spreadsheet or simple database, to administer their ICD maps. Others will need sophisticated tools capable of electronically integrating with other systems and capable of maintaining multiple custom maps in order to meet the organization's mapping needs. It is imperative that controls are in place to ensure data integrity of mapped data exists, including application security and quality assurance functionality.

Workflow and Data Considerations

Workflows involving coded data should be considered when formulating the ICD data mapping strategy to avoid data integrity problems. Individuals should:

- Determine workflows impacted by the introduction of mapped data
- Consider the people, process, and technology requirements for the future state workflows inclusive of leveraging mapped ICD data
- Evaluate the impact that future state workflows will have on the mapping tools, data conversion approaches, and governance
- Project the workflow needs and cost of managing and maintaining mapped data

Ensuring that quality coded data exists in both the source and targets of code sets is critical to the mapping process. To begin this process, determine the population of historical ICD-9-CM coded data that will be considered for mapping. This data set is analyzed in each legacy source system to identify and correct erroneous ICD-9-CM code values to the extent possible. Limitations of ICD maps must be discussed and tactics developed to manage these limitations. Examples of limitations of ICD maps include:

- ICD-9-CM codes without mapped ICD-10-CM/PCS codes
- ICD-10-CM/PCS codes without mapped ICD-9-CM codes
- Combination maps where a single code in one code set is expressed as multiple codes in the code set

In addition, many map schemas use the Centers for Medicare and Medicaid Services' General Equivalence Mappings (GEMs) as a foundation. GEMs maps can be effectively used as a starting point but code maps must be validated, customized, and approved for the applications for which the map applies.

Mapped data must be accessible to the data consumer as the need arises. Data storage is a key consideration in the approach to data conversion. Options for data storage include storing mapped data in the source system, in the target system, in a data warehouse, or in another accessible data source.

Another data consideration is that dual codes assigned during the coding or charge capture process should take precedence over ICD mapped data. The rationale for this being that codes abstracted from the medical record at the time of coding will more closely reflect the clinical scenario than will mapped data. Operationalizing this objective may present a challenge in that the team needs to understand which source systems can accept, display, and pass dual codes—and in what circumstances dual codes are applied.

Data Conversion Alternatives

The table below outlines data conversion options an organization may consider for mapping between ICD code sets. The first two alternatives are considered less effective than the last two alternatives, according to mapping experts.

Data Conversion Alternative	Pros	Cons
One time conversion of all ICD-9-CM coded data in legacy systems to ICD-10-CM/PCS codes	• Legacy coded ICD-9-CM data is readily available for use following ICD-10-CM/PCS go-live	• Converting all data is costly and may result in mapped data that is never used • Future changes to ICD-10-CM/PCS will not be reflected in map assignments
Ongoing conversion of all ICD-10-CM/PCS coded data in current system to ICD-9-CM codes	• Mapped coded data is available for all uses following ICD-10-CM/PCS go-live	• Resources expended to facilitate mapping for applied maps that may not be utilized • Future changes to ICD-10-CM/PCS will not be reflected in map assignments

Convert ICD-10-CM/PCS coded data to ICD-9-CM codes for a defined set of circumstances	• Mapped data required for a specific purpose is available following ICD-10-CM/PCS go-live	• May not be able to anticipate data conversion requirements at the time of processing (i.e., insurance plan changed after a conversion process) resulting in a need for additional mapping efforts • Future changes to ICD-10-CM/PCS will not be reflected in map assignments
Convert coded data (ICD-9-CM or ICD-10-CM/PCS) to the alternate code set on demand as the need arises for specific use cases	• Current maps are applied to data for an identified purpose	• Requires flexibility of resources and workflow to apply maps when required

Executing the ICD Data Mapping Strategy

Execution of the data mapping strategy should begin once the strategy is approved. The team should prioritize selecting and implementing a mapping tool so that the arduous work of defining mapping relationships can begin as soon as possible and any associated technical integration work can begin if applicable.

Once the technical solution is in place, begin the work of transitioning dependent workflows, forms, and reports to leverage ICD map definitions in the ICD mapping tool. Publish and communicate policies around the use of and procedures for accessing ICD mapped data to key stakeholders. Train stakeholders on the use of ICD mapped data and how to access mapped data for approved uses.

Notes

1. De, Suman. "8 Steps to Success in ICD-10-CM/PCS Mapping: Best practices to establish precise mapping between old and new ICD code sets." *Journal of AHIMA* 83, no.6 (June 2012): 44-49.
2. Kersten, Sandra. "A Primer on Health Information Governance." AHIMA. 2013.

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