



## ICD Code Crosswalks: No Substitute for ICD-10 Compliance

While crosswalk solutions may appear compelling, their usefulness is significantly limited by implementation complexity and expense, as well as reliance on manual labor.

### Executive Summary

When it comes to converting claims between ICD-9 and ICD-10 code sets, ICD crosswalks are often presented as a sensible, even long-term, solution to achieving ICD-10 compliance. However, a crosswalk-based approach – which involves the automated application of maps to convert claims between ICD-9 and ICD-10 – is fraught with complexity and added expense and can even increase the need for manual review of data and claims.

The challenge is that mapping ICD crosswalks is inexact by definition, as the mapping between ICD-9 and ICD-10 codes is nondeterministic. That is, while applying a forward map to an ICD-9 code generates an ICD-10 code, applying a backward map to the resulting ICD-10 code does not always result in the original ICD-9 code. In fact, the American Medical Association (AMA) indicates that one-to-one matches exist for fewer than 25% of ICD-9 to ICD-10 codes.<sup>1</sup> These types of mismatches negatively impact the business, resulting in reduced auto-adjudication rates, loss of information and increased customer service call volumes, as well as other potential issues.

Crosswalking in either direction, then, is not a substitute for fully implementing ICD-10 and

must be seen as a transitional option of last resort. Where crosswalks seem unavoidable, careful attention must be paid to the true costs of choosing this solution over migration to full ICD-10 compliance. These costs, plus related IT and operational issues, are highlighted in the common crosswalk implementations discussed below.

### The Crosswalk Conundrum

Crosswalks are the automated application of maps to convert between two code sets – in this case, ICD-9 and ICD-10. There are two types of ICD crosswalks that can be used as a transitional approach to achieving ICD-10 compliance:

- **Backward crosswalk:** This type is used to convert ICD-10-based data to ICD-9-based data, to support processing or analytic and reporting needs.
- **Forward crosswalk:** This type is used to convert incoming ICD-9-based claims received on or after the compliance date of Oct. 1, 2014, to ICD-10-based claims so they can be processed natively as ICD-10 claims in systems that are fully ICD-10 compliant.

The challenge that healthcare organizations face with either type of map is that ICD-9 and ICD-10

## ICD-9 to ICD-10 Percentage of Matches

Mapping Categories	ICD-10 to ICD-9	ICD-9 to ICD-10
No Match	1.2%	3.0%
1-to1 exact match	5.0%	24.2%
1-to-1 approximate match with one choice	82.6%	49.1%
1-to-1 approximate match with multiple choices	4.3%	18.7%
1-to-many match with one scenario	6.6%	2.1%
1-to-many match with multiple scenarios	0.2%	2.9%

Figure 1

codes do not always map one-to-one exactly. The AMA findings indicate that there is a great deal of ambiguity to address when attempting to match ICD-10 to ICD-9 and vice versa (see Figure 1). Multiple options arise when creating the maps on which crosswalks are based, resulting in operational issues for all of the most common transitional crosswalk solutions.<sup>2</sup>

### Backward Crosswalk

Backward crosswalks (ICD-10 to ICD-9) are generally performed to address one of two needs:

- System insulation:** In this case, a core system is scheduled to be decommissioned and cannot be completely migrated to an ICD-10 compliant system before the ICD-10 compliance date. It is important to note that when ICD-10 codes are backward-crosswalked to ICD-9 for processing by non-ICD-10 compliant systems, business partners and downstream applications – both custom and commercial-off-the-shelf (COTS) products – will still require the original ICD-10 codes because they will be operating with ICD-10 codes. An organization can realistically insulate only a very small part of its IT landscape from full ICD-10 compliance.
- Longitudinal analytics and reporting:** In this case, a backward crosswalk can support analytic and reporting needs that span the ICD-10 compliance date for when ICD-9 codes (for claims with a date of service before Oct. 1, 2014) need to be compared with ICD-10 codes (for claims with a date of service on or after Oct. 1, 2014). Examples include case management, utilization management or research.

An organization can realistically insulate only a very small part of its IT landscape from full ICD-10 compliance.

Backward crosswalks can support system insulation, longitudinal analytics and reporting for short-term pain relief, but these also introduce significant disadvantages.

### System Insulation Crosswalk Issues

When organizations need to perform system insulation, they use crosswalks to replace the incoming ICD-10 codes with ICD-9 codes, based on a backward map. The insulated system communicates with downstream applications and trading partners with the original ICD-10 codes. The ICD-9 codes used in the insulated system must be replaced with the original (not mapped) ICD-10 codes.

Specifically, a crosswalk intercepts incoming (upstream) claims before they reach the system rather than making the system ICD-10 compliant. An adapter intercepts downstream interfaces containing ICD-9 codes and replaces (not a forward crosswalk) the crosswalked ICD-9 claims with the original ICD-10 code.

The advantage of this approach is that it temporarily eliminates the need to remediate the systems identified for insulation. However, it also poses two disadvantages:

- An external viewer application is required to enable internal and external entities – including customer service and appeals/grievances users – to view the original ICD-10 and ICD-9 codes side-by-side. Extensive supportive functions in this external view are often required. For example, a customer service rep will see the original ICD-9 code and the mapped ICD-10 code. Depending on who is making the inquiry, callers will reference either code (original ICD-9 or mapped ICD-10). The service rep will need to be able to work with both codes and understand the map to resolve issues.

## Backward Crosswalk for System Insulation: A Conceptual Architecture

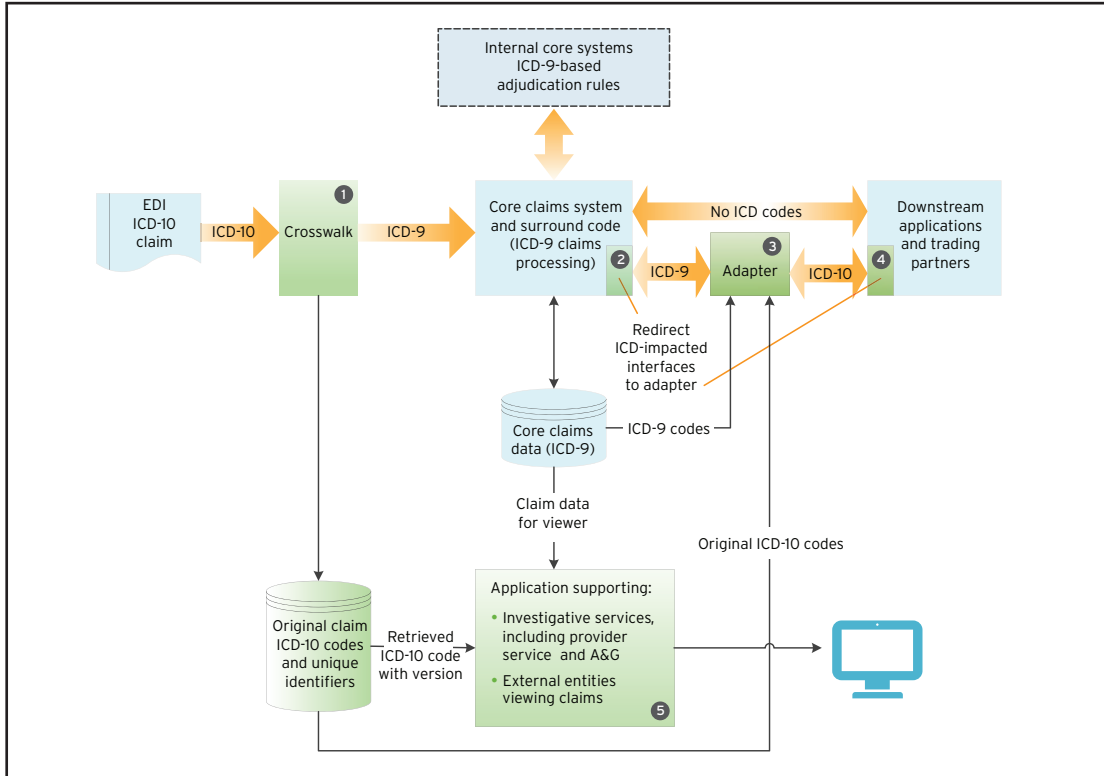


Figure 2

- The ability to edit the ICD code (e.g., downcoding or bundling) is more complex to implement because of the need to simultaneously edit the original ICD-10 code and the crosswalked ICD-9 code, since each have a different system of record.

Figure 2 details the complexity of an effective architecture for crosswalking a noncompliant claims processing system.

1. Incoming ICD-10 coded claims are crosswalked to ICD-9 using either custom software or a COTS tool.
2. The original ICD codes for the crosswalked incoming claims are persisted to a data store, to be used to feed systems downstream from the core claims system. The data store will need to persist the following:
  - Incoming ICD-10 codes.
  - Unique identifiers for the claim because the claim ID is typically generated inside the claims processing system.
3. A custom adapter intercepts the claims processing system downstream, accessing interfaces containing crosswalked ICD-9 codes.

It then replaces the crosswalked ICD-9 codes with the original ICD-10 code before passing it to the downstream recipient, such as an application or business partner, or before sending data back to the claims processing system (in the case of downstream inbound interfaces). In some cases, such as data stores for reporting purposes that require both original and crosswalked claims to be accessible, the ICD-10 code can be added to the interface; this enables both the crosswalked ICD-9 code and original ICD-10 code to be passed to the downstream recipient.

The adapter has two distinct parts:

- A shell that hosts all of the interface-specific adapters and provides required support and common functionality.
  - A collection of adapters, each supporting one of the ICD interfaces and hosted within the adapter shell.
4. Modifications to the claims processing system (configuration and/or code), downstream applications and trading partners (as needed) to direct ICD-affected interfaces to the adapter rather than the ultimate destination.

5. An application external to the claims processing system is required to support:
  - Investigative needs of stakeholders, by displaying both original ICD-10 codes and crosswalked ICD-9 codes to support provider service representatives and appeals/grievances users. The application will query both the data store persisting the incoming ICD-10 (item 2) and the claims processing system data store to display both the original and crosswalked codes to meet investigative efforts and other needs.
  - External entities viewing claims processing system claims that require access to original incoming ICD-10 code.
  - Requirements for synchronizing edits to ICD-9 and ICD-10 codes, if relying on individuals' editing codes is not adequate. An extension to the applications is required to achieve this function.

#### Longitudinal Analytics and Reporting Crosswalk Challenges

Healthcare entities frequently have longitudinal analytic and reporting needs in areas such as case management, utilization management and research that draw on ICD codes accumulated over a period of time. Filling these needs is challenging, particularly when the time period extends from ICD-9 usage to beyond the ICD-10 compliance date because these analytics and reports will have both ICD-9 and ICD-10 codes that cannot

be directly compared. A possible solution to the longitudinal problem is to implement a crosswalk that maps ICD codes in the subset of data needed for longitudinal reporting to a common basis—initially ICD-9 and subsequently ICD-10, once the volume of ICD-10 data is sufficient. This ICD-standardized subset of data is stored in a data mart and used as the basis for longitudinal analytic and reporting needs.

The issues with inexact matching of codes on ICD maps limit the usefulness of this approach. A careful, case-by-case assessment should be made to determine whether the crosswalk approach will meet the specific business needs. When a crosswalk is deployed, it is very possible that additional effort will be required for a lengthy period of time to manually interpret reports containing a mix of ICD-9 and ICD-10 data. For longitudinal reporting, this crosswalk does not always work; in fact, it may be necessary to manually contend with the mix of ICD-9 and ICD-10 codes for longitudinal reporting in these cases.

Figure 3 shows a conceptual architecture of a crosswalk supporting longitudinal analytics and reporting spanning the ICD-10 compliance date. The elements of the solution are highlighted and numbered to convey workflow sequence.

1. ICD-10 based data is selected from the data warehouse (or other data stores) and crosswalked to ICD-9 using either custom software or a COTS tool.

### Backward Crosswalk to Support Longitudinal Analytics and Reporting: A Conceptual Architecture

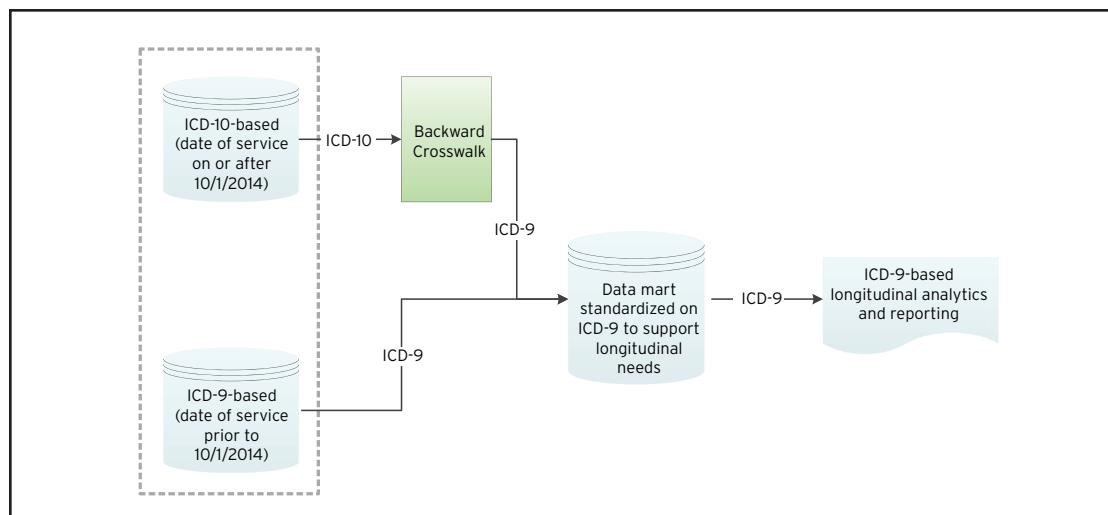


Figure 3

2. ICD-9 based data is loaded into a data mart that supports longitudinal analytic and reporting needs from the crosswalk and directly from the data warehouse.
3. Analytics and reports are developed to use the ICD-9 standardized data mart to meet longitudinal analytic and reporting needs.

While this solution shows the backward crosswalk initially used after the compliance date, a transition to an ICD-10-based data mart and ICD-10-based analytics and reports would be made when the volume of native ICD-10 data is significant compared with ICD-9 history.

### Forward Crosswalk Concerns

Forward crosswalks (ICD-9 to ICD-10) are generally created to address two needs:

- **Noncompliant partners:** The organization wants to accept and process transactions from partners that are noncompliant as of Oct. 1, 2014.
- **Longitudinal analytics and reporting:** The organization needs to support analytic and reporting activities that span the ICD-10 compliance date, where ICD-9 codes (for claims with a date of service before Oct. 1, 2014) need to be compared with ICD-10 codes (for claims with a date of service on or after Oct. 1, 2014) This is typical in such areas as case management, utilization management or research.

The following subsection explores the challenges of using forward crosswalks to manage noncompliant claims received after the ICD-10 deadline. As describe earlier, the longitudinal analytics and reporting approach with a forward crosswalk is similar to using a backward crosswalk, with a transition made once the volume of ICD-10-based data is significant compared with the volume of ICD-9-based data.

## Noncompliant Partners

Organizations are developing strategies for dealing with noncompliant partners, primarily providers that will not be ICD-10 compliant on Oct. 1, 2014. Noncompliance is a particular issue with smaller providers in rural areas because of the cost of compliance and lack of resources. Four broad approaches exist for dealing with noncompliant providers:

- **Deny the claim:** This is often not an option because of the need to preserve relations with providers and the potential impact to networks caused by losing providers.
- **Provider outreach:** This involves working with providers to help them become ICD-10 compliant, using mechanisms such as superbills to make compliance easier.
- **Third-party recoding:** Organizations can identify and partner with other organizations that can recode provider claims in ICD-10 on their behalf. Leveraging volume across all non-compliant providers will help reduce costs.
- **Crosswalk incoming claims from ICD-9 to ICD-10:** Forward crosswalks are used to upcode ICD-9-based claims to ICD-10.

Two crosswalk approaches are explored. The first scenario shown in the conceptual architecture depicted in Figure 4 crosswalks the claims submitted by noncompliant providers as soon as the payer receives them.

1. Noncompliant provider submits a claim on or after Oct. 1, 2014, using ICD-9 codes.
2. Claims are crosswalked, adding ICD-10 codes based on the ICD-9 codes.
3. The core claims system processes the upcoded claim as if it were a native ICD-10 claim.
4. Downstream systems and partners work with the upcoded ICD-10 claim in the same way as any other ICD-10 based claim.

## Pre-Processing Forward Crosswalk to Support Noncompliant Providers

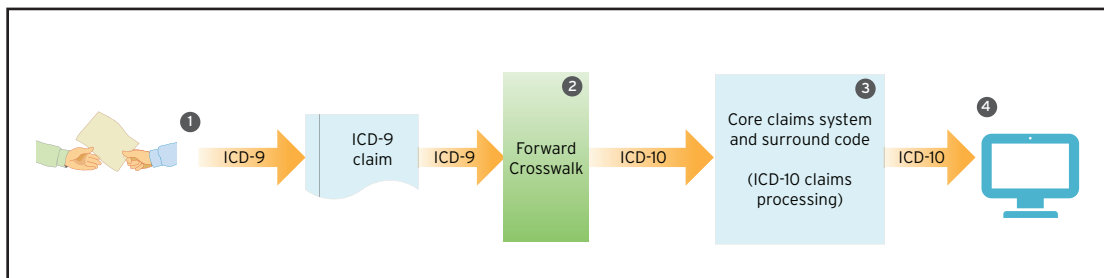


Figure 4

## Post-Processing Forward Crosswalk to Support Noncompliant Providers

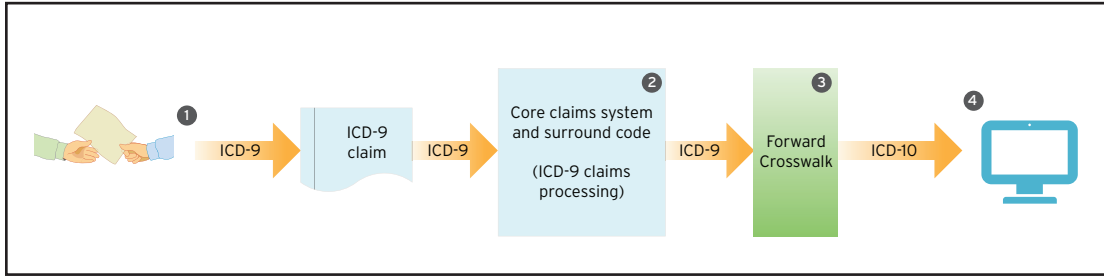


Figure 5

In addition to the complexity and cost of implementing this solution, the following significant issues limit its application.

- The inexact nature of the map might be suitable for claims adjudication; however, it is likely to be problematic for some internal and external downstream uses.
- Legal implications may exist because this approach essentially changes the claim.
- Payers face the possibility of future litigation if providers feel at some point that the payer-controlled map is used for the financial benefit of the payer. Even if the litigation is groundless, it will consume resources and generate negative publicity.
- Policies, rules and contracts with ICD codes will have to be maintained and configured within systems for both ICD-9 and ICD-10 after the compliance date. By forgoing a forward crosswalk and instead using provider outreach, superbills and third-party re-coders to address noncompliant provider claims, the ICD-9 based policies, rules and contracts are no longer needed beyond the compliance date because all ICD-9-based claims will have a date of service before then.

The scenario shown in Figure 5 depicts noncompliant claims processed as ICD-9 claims and then crosswalks them, post-processing, before sending them to downstream systems and business partners.

1. Noncompliant provider submits a claim on or after Oct. 1, 2014, using ICD-9 codes.
2. The core claims system processes the claim natively, using ICD-9 codes.
3. Processed claims are crosswalked, adding ICD-10 codes based on the ICD-9 codes.

4. Downstream systems and partners work with the upcoded ICD-10 claim the same way as any other ICD-10 based claim.

In addition to the issues mentioned for the pre-processing crosswalk approach (as shown in Figure 4), this alternative has two additional challenges:

- Crosswalk implementation becomes more complex because numerous downstream interfaces with systems and partners that are ICD-10-compatible need to be addressed. Multiple crosswalks might need to be implemented.
- Claims adjustment from downstream systems, stakeholders and partners becomes increasingly complex. The adjustment will be made in ICD-10, but it must then be applied to a claim processed natively using ICD-9.

### Reconsidering the Value of Crosswalks

Forward and backward ICD crosswalks are not a substitute for fully implementing ICD-10. While crosswalk solutions may appear compelling, their true usefulness is significantly limited by the many problems with implementation complexity and expense. Further, crosswalk solutions all too often involve additional manual labor.

Organizations need to carefully analyze the specific situation and evaluate the alternatives to determine whether a crosswalk solution is the optimal and effective way to meet business objectives. Often, implementing native ICD-10 compliance is the far more effective solution, resulting in cleaner, more comprehensive data and streamlined processes for managing the transition to ICD-10.

## Footnotes

- <sup>1</sup> IT governance objectives are the stated governance purposes to be achieved for an IT process.
- <sup>2</sup> IT governance control practices are the actionable activities to achieve an IT governance objective.

## About the Author

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