Use Caution When Entering the Crosswalk: A Warning About Relying on GEMs as Your ICD-10 Solution

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Healthcare practitioners and administrators are increasingly aware of the significant time investment in training and implementation plans that will be required in advance of this October’s mandatory migration to the new ICD-10 coding environment. They are prepared to make these investments because they understand that insufficient preparation in implementing the transition to ICD-10 will result in inaccurate coding, escalating queries, delayed billing and denials of reimbursements.

Many professionals believe that General Equivalence Mapping tools, or GEMs, offer an easy “crosswalk” between ICD-9 and ICD-10. Indeed, if you ask clinicians or administrators how they plan to address the transition to ICD-10, most will include GEMs or similar crosswalks as a key element of their plan.

Unfortunately, many practice managers and hospital administrators are in for a rude awakening in October, for the reality is that, rather than helping, GEMs (in their many iterations and forms) will seriously complicate rather than facilitate transition.

In fact, the very description of GEMs as “crosswalks” is seriously flawed, as they contain numerous shortcomings and deficiencies as a coding translation method, and were not designed for this purpose at all.

A much better approach to the ICD-10 challenge is to understand that migration to the new system is not a coding problem at all. It is actually a clinical documentation problem. Understanding this and adopting solutions that incorporate clinical documentation in their DNA will avoid countless wasted hours and effort.
International Classification of Disease & GEMs

In a world where transportation by air and sea is commonplace and inexpensive, conditions and diseases don't respect borders or boundaries. Epidemiologists studying data from around the world need a way to translate large sets of data. Understanding this need, the World Health Organization (WHO) created the International Classification of Disease (ICD) system as a way to promote international comparability in the collection, classification, processing and presentation of mortality statistics.

With epidemiologists in mind, the CDC and CMS, with the help of AHA and AHIMA, developed GEMs as a general purpose translation tool to convert large sets of data. It's important to remember that GEMs were created for use by the medical research community and not for actual medical record coding. That's why as a coding tool they are of limited usefulness, and are best used in this context primarily as an educational and training tool during the migration period to ICD-10.

The GEMs and EHR ICD-10 Coding Solutions

Because GEMs were made publically available to anyone wishing to use them – payers, providers, medical researchers, informatics professionals and software vendors – they have become ubiquitous ICD-10 solutions inside EHR software. It was logical that EHR’s use this publically available data, but they did so without taking the added step of providing clinical documentation guidance.

EHR solutions that rely on GEMs as a crosswalk between the old and new coding systems make the grave mistake of vastly underestimating the complexity of ICD-10. Additionally, they uniformly confront ICD-10 as a challenge to the backend of the workflow, and assume that queries between coders and physicians to clarify clinical diagnoses and procedures are an acceptable cost of doing business.

Yet ICD-10 queries are projected to make productivity plummet by as much as 15-20%. Much of this unproductive time will be spent answering GEMs-fueled questions from coders in a phenomenon that has been described only somewhat tongue-in-cheek as the “Never-Ending-Coding-Process.”

ICD-10 Transition: A Clinical Documentation Problem

Confronting ICD-10 as a coding problem is a faulty diagnosis that will unnecessarily injure productivity. This is because ICD-10 isn't a coding problem at all; it's a clinical documentation problem. In other words, if patient records are accurately documented at the point-of-care by clinicians, countless hours wasted in unproductive coding conversations at the backend can be avoided.

1 ICD-10 Crosswalk Primer, Workgroup for Electronic Data Interchange (WEDI), October 6, 2010
As CMS states in its recently published brochure of Frequently Asked Questions regarding GEMs: “In coding individual claims, it will be more efficient to work from the medical record documentation and then select the appropriate code(s).”\(^2\)

**ICD-10: A Vast Increase in Codes and Complexity**

With the aim of bringing about more specific diagnoses and improving documentation, ICD-10 increases the number and complexity of disease and procedure codes by several orders of magnitude over ICD-9, which was originally enacted in 1977. ICD-10 represents a stunning 712% increase over the number of codes in ICD-9.

![ICD-9 vs ICD-10 Codes](chart.png)

Given this very large increase, the hope early on was that some method of “mapping” or “crosswalk” would simplify the transition from ICD-9 to 10.

Mapping and crosswalks are attempts to translate diagnosis and procedure codes between ICD-9 and 10. However, the two systems differ so widely that all attempts at translation offer only a series of compromises and subjective choices. This is necessarily so because there is no “mirror image” of one code set in the other.

In fact, it is rare to find two corresponding descriptions in ICD-9 and ICD-10 that are identical in degree of specificity and terminology. It’s easy to understand why, as there would be very little point in changing from the old system to the new one if the differences between them were insignificant. Indeed, the principal benefit of ICD-10 for providers, coders and patients alike lies in its greater specificity and detail that will result in more accurate billing and better descriptions of procedures, complaints and illnesses.

**GEMs are not Accurate Translation Tools**

In describing the GEMs, people often use the metaphor of a dual-language dictionary. For example, in an English-to-Spanish dictionary, one can look up English words and their Spanish translations, just like cross walking from ICD-9 to ICD-10.

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\(^2\) General Equivalence Mappings Frequently Asked Questions, Medicare Learning Network, Department of Health and Human Services, Centers for Medicare & Medicaid Services, April 2013.
But as any native English speaker who spends time in Spain, Mexico or any Spanish speaking country quickly learns, not all Spanish words have a direct English equivalent, especially since the Spanish language spans multiple continents and countries where culture invades the meaning of a word and you can find many different words for the same thing. The same holds true when searching for the Spanish equivalents of many English words.

Context has very important effects on the meanings of words. Having a dictionary at one’s disposal is not the same thing as spending a few years in Spain or Mexico, just as using GEMs is not a substitute for fluency and knowledge of the nuances and vocabularies of ICD-10.

The “National” GEMs

Today, when people talk about mapping and crosswalks between ICD-9 and ICD-10, they are almost always talking about GEMs. This is so commonplace that the terms are becoming synonymous in everyday usage.

There are actually many different GEMs that have been created by a wide variety of both public and private entities. But the best-known GEMs are the “national” GEMs created by CMS, CDC and NCHS in an attempt to impose greater consistency in national data.

CMS has committed to update these GEMs annually for at least three years beyond October 1, 2014. They consist of four downloadable text files freely available at www.cms.gov, that map:

1. CD-10 Diagnosis Codes to ICD-9 Diagnosis Codes
2. ICD-10 Procedure Codes to ICD-9 Procedure Codes
3. ICD-9 Diagnosis Codes to ICD-10 Diagnosis Codes
4. ICD-10 Procedure Codes to ICD-9 Procedure Codes

The source code set is the code set that is the starting point for the map. The target code set is the code set being mapped to. The GEMs allow for four possible translations or links:

1. one-to-none: one source code maps to no target codes
2. one-to-one: one source code maps to one target code
3. one-to-many: one source code maps to multiple target codes
4. many-to-one: multiple source codes map to one target code

CMS also says that the GEMs “are also known as crosswalks as they provide important information linking codes of one system with codes in the other system.”
However, coders and other specialists who plan on using either GEMs or a GEMs-based EHR solution for achieving ICD-10 compliance would do well to keep the a few statistics in mind:

In the “forward” GEMs maps for procedures from ICD-9 to ICD-10:

- There are 445 instances where a single ICD-9 code can map to more than 50 ICD-10 codes
- There are 210 instances where a single ICD-9 can map to more than 100 ICD-10 codes

In the “backward” GEMS maps from ICD-10 to ICD-9:

- There are 6,821 instances in the mappings for diseases where a single ICD-10 code can map back to more than one ICD-9 code
- There are 6,740 instances in the mappings for procedures where a single ICD-10 code can map back to more than one ICD-9 code

On the one hand, ICD-10 will provide clinicians around the world with the ability to communicate detailed clinical findings and create a documentation record that facilitates information sharing and data mining for improved health population management. And without question, ICD-10 creates many opportunities for payers and providers to promote better health while reducing costs.

On the other hand, the numerous instances of many-to-many code relationships between the two sets makes it challenging, to say the least, for healthcare payers and providers to:

- Process transactions
- Analyze businesses
- Maintain compliance with regulatory requirements

Reimbursement Maps

CMS asked 3M to develop “ICD-10 Reimbursement Mappings” in response to non-Medicare industry requests for a standard one-to-one reimbursement crosswalk.

Reimbursement maps are a temporary mechanism for mapping ICD-10 codes submitted after October 1, 2014, back to reimbursement equivalent ICD-9 codes, so that the records may continue to be processed by legacy systems expecting ICD-9-CM.

The reimbursement maps were created after the GEMs and used the GEMs as a starting point by selecting the best ICD-9-CM code that can be used for reimbursement purposes for each ICD-10 code.
One difference between the GEMs and the reimbursement maps is that while the GEMs map “forward” and “backward” (for both ICD-9 to ICD-10 and ICD-10 to ICD-9), the reimbursement maps only map back from ICD-10 to ICD-9 (for both procedure and diagnosis codes).

CMS emphatically states that they are NOT using ICD-10 reimbursement maps for any purpose. They are converting their systems and applications to accept ICD-10 codes only.

Importantly, CMS reimbursement maps were created to show equivalent Medicare inpatient reimbursement. Data from Medicare claims and California Inpatient Hospital were used to develop the maps, and therefore may not be appropriate for other client groups and geographical locations. Therefore, achieving equivalent reimbursement under ICD-10 within another health plan would be highly complicated, if not altogether impossible.

As with the GEMs, there are many instances in the reimbursement maps where a single ICD-10 code can map back to more than one ICD-9 code:

• There are 3,684 occurrences in the mappings for diseases where a single ICD-10 code can map back to more than one ICD-9 code
• There are 2,135 instances in the mappings for procedures where a single ICD-10 code can map back to more than one ICD-9 code

In short, reimbursement maps, like GEMs, should not be viewed as a solution to the ICD-10 solution.

Non-CMS GEMs

As mentioned above, when people think of GEMs they tend to think of the “national” GEMs available from CMS. But the reality is that there are actually numerous variations of the “national” GEMs available from a variety of both public and private sources. It’s helpful to pause for a moment to discover why.

As far back as 2007, when the Bush Administration called for the mandatory conversion to ICD-10, there were numerous publically available presentations and whitepapers that all called for the development of national mapping standards.

Efforts by America’s Health Insurance Plans (AHIP) in particular, were notable for early recognition of the key challenges and risks that were even then evident when discussing ICD-9 to ICD-10 crosswalks.

Understanding that having numerous entities, and in particular numerous payers creating their own GEMs was a recipe for widespread confusion, the AHIP effort was an attempt to charter a cross-industry consortium to establish standards necessary to minimize crosswalk impacts across the entire health care and health plan value chain.

Unfortunately, this laudable effort involving multiple payers, players and ICD-10 stakeholders seems to have collapsed. No industry-wide standards that we are aware of were achieved and today there are many GEMs available from a variety of sources, EHR vendors and payers. No one really knows whether they are consistent or what the individual organizing principles and assumptions are that each developer used.
A presentation from United Healthcare sums the situation beautifully. On page 11 of their “ICD-10 Transition Playbook” they do a great job of listing the litany of reasons a single official mapping is required, and that crosswalks are only a temporary solution: They state that “…development of a single “official” mapping between ICD-9 and ICD-10 is a major industry concern,” for the following reasons:

Independent Packaged Software Vendors have and will have different offerings, incorporate a variety of GEMs and approaches to cross walking between the old and new code sets, with predictably wide variations in accuracy and results.

Given this situation, it is easy to imagine how messy things will get once it becomes apparent that medical systems, claims systems and financial systems are also using different GEMs and operating under different translation regimes.

For this reason, it is vitally important for clinicians, administrators, coders and others to be aware that code outputs from their EHR software are very likely to vary from the “National” GEMs.

We strongly urge these professionals to have an in-depth discussion with their EHR sales representative before making any purchase decisions on software applications that are described in marketing literature as “ICD-10” compliant.

Vendors may use GEMs in their data translation algorithms, but any vendor products that rely exclusively on GEMs should be scrupulously examined or possibly even avoided, since they are an incomplete method of translation.
The Impact of ICD-10 on Different Clinical Specialties

A chart from the Journal of American Medicine Information Association (JAMIA) is particularly illustrative. It shows clinical classes from the topmost ICD-9 CM hierarchies and then uses them as the basis to calculate the impact of mapping to ICD-10-CM codes across clinical specialties.

Impact is described along a range from No mapping, through convoluted and on through to Identified code translations.

Note that the proportion of convoluted (pink bars) motifs indicates that hematology and oncology are poised for easy transition to ICD-10, while obstetrics, psychiatry and emergency medicine, like orthopedics, will be the among the most challenged.

A striking 42% of disease code mappings remain convoluted, which will have an impact across all specialties. And some clinical specialties will be affected disproportionately, with convoluted mappings as high as 62%.

However, this high occurrence of convoluted mappings is only a problem for those who approach ICD-10 as a backend coding problem. For those focused on clinical documentation at the frontend, code selection is much easier and crosswalks are not necessary at all.

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Additional Limitations

It’s important to understand that we at ICDLogic do not denigrate the value of the GEMs. They are a useful starting point for the translation of applications, programs and systems from the language of ICD-9 to that of ICD-10, and for understanding the relationships between the two code sets.

But we do maintain that the GEMS are not finite crosswalks because they contain numerous instances of mappings where human intervention and judgment – based on analysis of the clinical documentation – is required to complete many of the links.

Additionally, the GEMs do not provide the “includes” and “excludes” information that a clinical documentation codebook does, nor do they provide guidelines for coding. Therefore, when using the GEMs, coding guidelines and codebooks must be consulted simultaneously to ensure that all of the details are available when making decisions on code sets. GEMs are in no way a substitute for coding guidelines and codebooks.

The use of GEMs may pose significant issues with data integrity. Users need to understand this clearly. Crosswalks should only be considered as a first step in understanding the differences between ICD-9 and 10, and not as a coding solution, since some critical information included in the ICD-10 codes may be lost through cross walking.

Also, the lack of exact match between ICD-9 and ICD-10 codes could lead to incorrect decisions. These issues may be less severe with some uses and more severe with others.

Only about 12% of the GEM mappings from ICD-9 to ICD-10 procedure codes offer a “one-to-one” match. Given the specificity of the ICD-10-PCS code set this makes the creation of a crosswalk for procedure codes in this direction extremely difficult.

In some cases one code could crosswalk to one or more of several hundred possible codes, with no way to determine which one is the most accurate match.

There are no “Not Otherwise Specified” codes in ICD-10-PCS. And some translations require mapping to clusters of codes for accurate translations. If clinical equivalency is the most important factor there are some cases where your data may not mean the same thing in ICD-10 that it did in ICD-9 when a clinically equivalent match does not exist.

In contrast to the procedure codes, approximately 50% of the GEM mappings from ICD-9 to ICD-10 diagnosis codes offer a “one-to-one” match (5% of which are exact matches, the other 45% are approximate matches). This makes cross walking for diagnosis codes in this direction easier than for procedure codes, but there are still many cases where one code could convert to one or more of several hundred possible codes.

Finally, remember that CMS will not maintain the GEMs indefinitely.
A Smarter Approach to ICD-10 Implementation

ICD-10 implementation is going to be an expensive proposition for many providers. If you need to purchase new hardware or software, start planning for costs now. Nachimson Advisors estimates that the switch could cost up to several hundred thousand dollars for small physician practices and over $8 million for a large practices of 100 or more physicians.4

In many cases, education and training programs are only now being developed. Because of the volume of information to be absorbed by busy professionals, it needs to be presented in small modules. Now is the time to get started.

A key factor in reducing exposure is getting physicians to change the way they document in order to meet the new requirements involved in ICD-10. Detail is key, as more specific codes demand clear notes.

This last point reinforces our firm belief that solutions that focus on CDI offer the easiest, least disruptive and most effective path to successful ICD-10 implementation.

Conclusion

The key to successful implementation of ICD-10 is, without question, accurate, complete, and specific clinical documentation.

Because accurate documentation enables the selection of the most specific applicable code available, human eyes are needed to ensure that an ICD-10 code actually matches the patient’s situation. And we think that those should be the eyes of the clinician who diagnoses a condition or performs a procedure.

The term “crosswalk” is comforting. It conjures up images of clean white lines clearly marking boundaries within which it is safe for us to remain.

But please be advised: GEMs are not really crosswalks at all between ICD-9 and ICD-10. They are instead reference mappings intended to help the user navigate the complexity of meaning from one code set to the other.

And because the necessary clinical information is not always or even usually available, cross walking becomes a difficult task that can result in many imperfections that lead to time-consuming queries from coders to clinicians that eat into productivity.

To continue with this metaphor, even after you find a designated crosswalk across a busy street, and the light signals it’s safe to cross, you still need to use your eyes and ears to judge when it’s safe.

In short, it’s the human element that makes crossing a busy street safe. And it’s a human element of recording the correct clinical documentation at the frontend of the workflow that makes choosing the appropriate ICD-10 codes a safe proposition.

In spite of this, there are healthcare payers and providers who are planning to rely on the GEMs as their primary means of ICD-10 compliance, at least during the period just before and after the implementation date, and primarily for reimbursement purposes.

It is critically important for these organizations to understand that the GEMs were not designed to be clinically correct. Achieving clinically correct coding will require analysis of the clinical documentation for each patient.

**Cypher™: A Clinical Documentation Tool Designed for use at the Point-of-Care**

That's why ICDLogic developed Cypher, a Computer Assisted Physician Documentation (CAPD) clinical workflow tool designed for the frontend of each episode of care.

In three easy steps, Cypher™ helps educate physicians to document correctly and generate an accurate ICD-10 code, and its corresponding ICD-9 and SNOMED codes, without ever having to select a code.

A clean user interface that's “easy on the eyes and easy on the mind” helps the physician navigate through a series of clinical documentation prompts to arrive at an accurate code for any condition or procedure, and provides space to capture SOAP and other progress notes that are the foundation of sound clinical documentation.

Cypher™ can be organized by clinical specialty and creates an electronic Superbill specific to the individual physician who uses it. What truly sets Cypher™ apart are the Clinical Documentation Improvement MonographsSM that power it. These clickable, guidance, education and reference tools created by physicians, CDI professionals, coders and medical editors are the algorithms that power Cypher™.

Finally, Cypher™ can be used as a stand alone workflow tool or integrated into EHR systems already in use.

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**About the Authors**

Jones is the VP of Content Development at ICDLogic and has helped to design the Clinical Documentation Improvement Monographs™ that power their CAPD software, Cypher™. She is also principal of Lolita M. Jones Consulting Services (LMJCS), founded in October 1998 in Fort Washington, MD. In April 2013, Ms. Jones launched a new monthly newsletter titled ICD-10-PCS Solutions (MedLearn, Inc., Minneapolis, MN), and in 2011 she wrote the ICD-10-CM/PCS Implementation Action Plan, and the ICD-10 Competency Assessment for Coders, ICD-10-CM & ICD-10-PCS (HCPro, Marblehead, MA).
Stanley Nachimson is principal of Nachimson Advisors, a health IT consulting firm dedicated to finding innovative uses for health information technology and encouraging its adoption. The firm serves a number of clients, including, the Cooperative Exchange, EHNAC, No World Borders, Erickson, ICDLogic, and the American Osteopathic Association. Stanley is focusing on assisting health care providers, vendors, and plans with their ICD-10 and other regulatory implementations, and is the director of the NCHICA-WEDI Timeline Initiative. He serves on the Board of Advisors for the Lott QA Group, an innovative health care IT testing company. Stanley is the author of the authoritative paper on the cost of ICD-10 for physician practices, and is co-chairing the HIMSS ICD-10 Task Force and the WEDI ICD-10 Testing Workgroup.

Stanley served for over 30 years in the US Department of Health and Human Services in a variety of statistical, management, and health technology positions. His last ten years prior to his 2007 retirement were spent in developing HIPAA policy, regulations, and implementation planning and monitoring, beginning CMS's work on Personal Health Records, and serving as the CMS liaison with several industry organizations, including WEDI and HITSP. He brings a wealth of experience and information regarding the use of standards and technology in the health care industry.

About ICDLogic

Established in 2012, ICDLogic is a New York City-based technology company founded by healthcare information and technology experts who know how to build smart information-driven applications for physicians. ICDLogic has extensive experience in healthcare regulatory information, billing and coding, and understand the semantic ontologies behind ICD-9, ICD-10, SNOMED CT, MeSH. We also understand the importance of Clinical Documentation Improvement (CDI) and its impact on DRGs, coding, reimbursement, and health revenue compliance. Most importantly, we understand the need for intuitive user interfaces that make information-rich applications that are easy to use by doctors and other clinicians.

ICDLogic's mission is to provide easy-to-use clinical documentation tools for physicians so they can spend more time with patients and less time on compliance education and busywork.