Using an Analytical Approach to Weather ICD-10 and Value-based Reimbursement Transitions

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Executive Summary

Healthcare finance leaders are facing major potential disruptors including the changeover from ICD-9 to ICD-10 and the continued adoption of new pay-for-value models like bundled payments. These changes will have differing impacts on every health provider organization, and mitigating these changes will be a priority for all. RelayHealth data from more than 2,000 hospitals and 200,000 physicians has provided some key insights.

Data has the potential to either drown or propel the provider. This paper outlines a four-step, data-centric Risk Assessment and Mitigation Framework designed to help providers prepare for and succeed during upcoming health reform events. The steps include risk assessment to determine areas of focus, prioritization based on risk and tractability, tracking of implementation and ongoing performance, and comparing transition success to others.

Since the risk level associated with these industry changes is high, hospitals that want to withstand the disruptions with minimal lost revenue and confusion should begin forming teams to carry out each step. Providers should also evaluate their current data systems’ capability to provide the necessary risk-assessment analysis and comparative analysis. Both ICD-10 and bundled payments examples will be used to show the flexibility of this approach.

Financial Storm Brewing

Hospital executives have been feeling the winds of change for several years, but many now realize the magnitude of what is on the horizon. With the ICD-10 changeover set for October 2015 and new payment methods gathering force, there is a potential for a perfect storm. The shift in payment models, ICD-10, and other government policy changes may present substantial, concurrent risks to hospitals’ operations, cash flow and patient care reimbursements.

As with any storm, those who recognize its potential and prepare in earnest will do more than ride it out—they may emerge with minimal damage and well-positioned to take advantage of the opportunities the storm’s passing will bring.

No one knows the precise timeline for new payment models to dominate, but those who believe they have years to get ready may want to reconsider. Looking back, both PPOs and high-deductible health plans became a meaningful part of the reimbursement mix within a five year window. Research shows the next shift has begun, with at least 11% of hospital payments now predicated on value orientation and 220 existing CMS-shared-saving ACOs, the majority of which are led by physicians. In addition to improving care quality, a goal of these models is ultimately to reduce cost of care. The unprepared may experience diminished patient revenue.

According to The Advisory Board Company, more than 95% of the best possible matches between ICD-9 and ICD-10 codes will be inexact. Imprecise coding represents the potential loss of hundreds or thousands of dollars per procedure.

Assess Risk | Prioritize | Track | Compare
For example, below are ICD-9 and ICD-10 coding scenarios for a 35 year-old male patient with pancreatitis. The ICD-9 diagnosis code 277.89 can map to ICD-10 codes E803 or E889. Coding that line incorrectly could lead to a reimbursement difference of more than $1,505.

<table>
<thead>
<tr>
<th>Code Set</th>
<th>Diagnosis Codes</th>
<th>Grouping &amp; Reimbursement</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICD-9-CM</td>
<td>5770 - Acute pancreatitis 277.89 - Other specific metabolic disorders 2512 - Hypoglycemia NOS</td>
<td>DRG 439 Disorders of pancreas exc. malignancy w CC Paid $5,136.41</td>
</tr>
<tr>
<td>ICD-10-CM</td>
<td>K850 - Acute pancreatitis E803 - Other specific metabolic disorders E162 - Hypoglycemia NOS</td>
<td>DRG 439 Paid $5,136.41</td>
</tr>
<tr>
<td>ICD-10-CM</td>
<td>K850 - Idiopathic acute pancreatitis E889 - Metabolic disorder, unspecified E162 - Hypoglycemia</td>
<td>DRG 440 Disorders of pancreas exc. malignancy w/o CC/MCC Paid $4,186.20</td>
</tr>
</tbody>
</table>

Nor can hospitals expect strong support from payers during an ICD-10 transition. In an April 2013 survey of 548 payers by RelayHealth, 74% of payers said they had not identified what types of ICD-10 testing they will allow, and 67% did not have a timeline for beginning ICD-10 testing. Only 3% of payers were planning to offer unlimited testing to all their providers, and 20% were planning to test with only a small number of providers, citing lack of people and system resources. Recently, Medicare contractors have announced that they will not be testing directly with providers, trading partners, vendors, billing services, or clearinghouses prior to the changeover date5.

Fortunately, the data systems hospitals developed to help them improve the business side of patient care and overall performance can now be used to help mitigate these risks. Specifically, as hospitals transitioned to electronic recordkeeping and electronic health transactions, they accumulated a wealth of data that many leverage to help them improve the financial side of their organizations. That data forms the foundation of a straightforward Risk Assessment and Mitigation Framework aimed at easing financially related disruptions like ICD-10, bundled payments and ACOs.

The Risk Assessment and Mitigation Framework can be used to help guide hospitals through the ICD-10 transition. The figure below illustrates the supporting data for each step. Later in the paper, the Risk Assessment and Mitigation Framework will be used as a guide to help hospitals navigate the transition to new payment models.
The Risk Assessment and Mitigation Framework

1. **Assess Risk**: combine historic data with risk model(s) to determine areas of focus within each hospital

2. **Prioritize**: evaluate and prioritize based on risk, impact and tractability

3. **Track**: monitor implementation and ongoing performance

4. **Compare**: measure transition success using comparative peer analysis

Using an Analytical Approach

Assess Risk

A core function of the ICD-10 risk assessment team will be determining the levels of coding difficulty. Although there is no universal solution for coders to transform ICD-9 codes to ICD-10 codes, there are ways to facilitate risk assessment and preparation. For example, RelayHealth products map ICD-10 equivalence information to provider utilization data as a foundation for a clinical assessment of documentation factors described above.

For some procedures, providers will be able to use the General Equivalency Mapping (GEM) files created by 3M (at the request of CMS) to create crosswalks—specifications that state which code in ICD-9 corresponds with a code or codes in ICD-10.

For groups of codes that change significantly from ICD-9 to ICD-10, providers will, in some cases, be able to use GEM files to create equivalent aggregations—a definition of ICD-10 codes that represent a medical concept.

At the very least, the risk assessment team will need to group every code used by organizations into categories like easy, medium or difficult to map. Some organizations may require more levels of granularity (a scale of one to five, for example).

Using historical utilization data, the team will need to identify the code groups that correspond to (1) the procedures performed most often in organizations and (2) procedures that drive significant patient revenue. Again, providers should create priority groups, with category buckets for at least high-volume or low-volume and high revenue or low revenue.

Coding difficulty can then be overlaid onto the two main areas of risk—high volume and high revenue—illustrated here as quadrants (see graphic to the right). This will give the group its initial focus areas: high-volume procedures that are difficult to map and high-revenue procedures that are difficult to map (upper right). A secondary focus area might be high-volume and high-revenue procedures that are easier to map (right).

When viewed as a whole, the transition from ICD-9 to ICD-10 codes can seem overwhelming, even to those who have already begun. Examined more carefully, there are large groups of codes that require only a handful of documentation factors. Many ICD-10 codes explode from permutations around a condition that specify the how (e.g., cause of condition), when (e.g., first or second trimester of pregnancy), or where (e.g., left, right, or both eyes) the diagnosis arose, in addition to the more precise “what” (e.g., type of fracture). Many of these concepts are currently documented by physicians, but consistency will be important to coders as they make the transition.

Similarly, when broken down into four segments, the risk mitigation process comes into focus with clear responsibilities for stakeholders. The data-intensive risk assessment piece will involve analytics experts, physicians or clinicians and department managers. Prioritization should be conducted by managers and senior leaders. Tracking functions should be developed by a team of cross-functional managers (e.g., HIM, billing, IT) and physicians, which can then be transitioned to a panel that reviews comparative analyses on an ongoing basis.
It is important to recognize that each hospital in a healthcare system may have widely different areas of risk during the transition. Although the billing function is likely centralized, focus areas must be determined hospital by hospital. For example, suppose that the codes for orthopedic procedures fall into the high-volume, “difficult” category in terms of mapping for a hospital system. This fact will have disproportionate impact on implementation for the health system’s urban general hospital versus its specialized cardiac center, which needs to focus on a narrow set of high impact codes.

Hospitals should also assess their data systems’ ability to provide this system-wide information, as well as the human resources necessary to perform the analysis. Some organizations may need to add analytics capabilities to their systems and/or hire an outside service for this phase.

At a minimum, hospitals will need an analytics tool that can incorporate both sets of codes and the factors describing complexity. Ideally, the tool also will be able to integrate the organization’s historical utilization and reimbursement data.

Prioritize

With the highest-risk areas identified, a team composed of managers and senior leaders (operational and clinical) can begin the prioritization process by tagging these areas by department (emergency medicine, orthopedics, etc.).

The organization can then consider its internal dynamics, rearranging the priority list based on factors such as department size, tractability of physicians, and/or level of complexity expected in terms of clinical documentation. When departments have a comparable volume of high priority procedures, this prioritization step will inform deployment of support resources. This adds a fourth dimension to the risk assessment chart shown to the right.

Assigning a priority level to every procedure or procedure group will allow providers to determine precisely where to place resources in terms of training coders, billers, clinicians and physicians. In other words, providers must first marshal resources to get right what matters most in terms of operational and financial impact.

Track

As mentioned above, the payer community may not find it feasible to make full testing available to all hospitals. With participating payers, those areas previously identified as patient revenue priorities can be used to optimize test scenarios. However, hospitals may need to create an internal testing function with a special task force in the payer role.

The objective is to implement a system that will effectively monitor post-implementation performance. It is critical to test the entire process, from physician documentation to coding to claim management. For example, metrics could be collected for every stage of the process, requiring each physician to submit a predetermined number of test reports weekly with ICD-10 supporting documentation. Weekly feedback reports would showcase successfully coded claims and flag errors to highlight areas for improvement.

Similarly, each coder could be tracked to quantify incorrectly coded ICD-10 test claims, as well as variance in reimbursement on each claim. Under ICD-10, documentation and coding may appear accurate but be incomplete, thus not “correct” for appropriate reimbursement. Identifying these occurrences provides opportunity for future process correction.
To do this efficiently, hospitals may want to run their test system in parallel with the operating system. In addition, setting trigger thresholds in the business intelligence software will alert them of certain occurrences, such as when reimbursement for a certain procedure is lower than historically expected. Providers will also need to set up reports that allow them to drill down into the root causes for errors by type, department, and user.

**Compare**

Being able to measure financial markers (charge trend, days in A/R, claim denials, etc.) against hospital peers is essential to running a high-performing financial services division. Comparative analytics, as opposed to internal tracking, can reveal the degree of competitiveness and expose best practice standards. It becomes even more critical during times of disruption for which there is no organizational history to compare performance.

Most provider organizations expect an impact due to the ICD-10 changeover, and measuring the impact internally will be straightforward. What is vital is the ability to compare metrics with hospitals of similar type and size as the transition occurs. Many organizations may experience a decrease in efficiency, but it is important to know whether the decrease is less than average, average or better than average.

After the ICD-10 transition, organizations may also want the ability to easily drill down into the areas where they are experiencing the most payment delays or denials. Strong comparative analytics are the key to finding the root causes of revenue cycle issues. For example, Oregon’s Silverton Hospital recently used data from its analytic system to see which departments had long claim submission deadlines compared to an impartial set of peer hospitals. A corresponding data set helped physicians in those areas see the financial impact of the delays on the overall revenue cycle, inspiring immediate process changes with broad support.

Optimal comparative analysis tools provide access to comprehensive outside data that is updated frequently (at least weekly, preferably daily for some measures). The data cohort must be large enough to allow organizations to compare themselves to several very similar organizations in terms of size, specialties and patient mix. It must also be detailed enough to allow teams to isolate the precise areas (departments, procedure groups and codes) where issues are occurring.

Many organizations will implement more sophisticated risk assessment reporting and comparative analytic systems to help ease the ICD-10 transition, and such systems will continue to prove their worth as providers transition to new payment models. Progressive providers will pivot quickly from ICD-10 compliance to using the increased detail of ICD-10 data for analytics to help enhance both care quality and financial performance under payment reform.

**New Payment Models**

There are significant opportunities for hospitals that prepare early and earnestly to optimize the transition to new payment models. The Risk Assessment and Mitigation Framework still applies with some contrasts to the ICD-10 example. All of the new models along the payment continuum (below) involve shifting risk to the provider. The farther right on the continuum, the greater the risk incurred by complex reimbursement for patients undergoing high cost or chronic treatment.

The chart below illustrates the prominent payment variations currently in play: from high-deductible plans that incrementally add patient “cost shopping” to pay-for-performance incentives that use historical utilization, quality metrics, and reimbursement to reward or penalize outliers. Bundled payment and population management scenarios inherently involve quality management. They invoke incentives for self-policing by provider organizations that must coordinate aggregate sets of clinical care, rather than episodic treatment and billing à la carte.
Because it sits toward the right-hand side of the risk continuum, has some familiar fundamentals, and is being piloted by dozens of provider organizations, the CMS Bundled Payments for Care Improvement Initiative (BPCI) will be used as an example.

As with the ICD-10 transition, moving to bundled payments will involve two analytical steps that likely will be new territory for hospital finance divisions:

- Individualizing risk to the hospital, physician or ancillary level by disease
- Measuring transition success using comparative analysis

The chart below shows the data involved in preparing for bundled payments, in which CMS sets a target price for a care episode (e.g., a pacemaker implant or a joint replacement), rather than paying, less discriminatingly, for all services associated with the episode.

CMS will use historic reimbursement data to set a target price for each bundle a provider participates in (see concept graphed as a normal distribution on page 8). There are both all-inclusive prospective payment and fee-for-service models, but essentially, providers that utilize less costly services for the episode can receive a share of CMS gains; those that use more costly services for the same episode are “penalized.”

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**Assess Risk**
- Claim volume & reimbursement history across providers, settings
- Upside or downside to target by condition

**Prioritize**
- Factors by condition:
  - Revenue neutrality
  - Institutional specialty excellence areas

**Track**
- Variance of episodes to target pricing
- Utilization anomalies by provider
- Quality trends
- Gain sharing

**Compare**
- Third-party data for subset of Track metrics:
  - Episode variance to target
  - Quality trends

Illustration of data required at each stage of assessment: Bundled Payments
CMS will use historic reimbursement data to set a target price for each bundle a provider participates in (see concept graphed as a normal distribution, below). There are both all-inclusive prospective payment and fee-for-service models, but essentially, providers that utilize less costly services for the episode can receive a share of CMS gains; those that use more costly services for the same episode are “penalized.”

In practice, the penalty scenario will be either a single prospective payment less than the sum of fee-for-service payments or a reconciliation adjustment that takes back from fee-for-service payments for the condition episode. Of course, within a condition, there is variance in target price for co-morbidity and clinical complications involved in the episode. Note that in addition to hitting cost targets, care must be effective—the provider must meet quality metrics to achieve a gain share.

Hospitals may need to perform complex analyses to determine where their condition-associated services mix falls along the curve. They may need to examine claims from various hospital departments, specialists, skilled nursing facilities, and other providers to determine their total “cost” of each episode in order to compare it with CMS’s target price. A comprehensive analysis would ideally do this for the 48 condition bundles created by CMS, for each of the four models of payment, and for the 30-, 60- or 90-day condition follow-up timeframes. Potentially, the analysis could incorporate several hundred BPCI scenarios (like the one to the right) for the hospital alone, thousands when incorporating non-hospital providers participating in the episode.

The main objective will be to identify all areas where a hospital’s episodes, on average, fall into a fee-for-service pricing aggregate higher than CMS’s target price for the bundle.

Once the risk assessment is complete, hospitals will be able to prioritize their participation in condition areas likely to be patient revenue neutral—with achievable rewards for outperforming. A secondary target could be areas where provider groups have an unappealing profile for conditions they specialize in to determine whether there are idiosyncratic factors to negotiate with CMS or whether performance improvement is called for. This exercise will also inform their participation in commercial payers’ bundling programs.

As they move into bundled reimbursements, hospitals will need to track data across all providers and aggregate it into reports that enable them to see overall trends and drill down into problem areas to find root causes. This will drive opportunities to enhance care plans with evidence-based medicine and optimize utilization or remove cost where appropriate. It also will be important to track the relative contribution across providers participating in the bundled service offering for divvying bundled payment, gain sharing and reconciling reimbursement.

Finally, hospitals should use comparative data to show how provider groups are performing compared to their peers, both historically under fee for service and in bundled payment scenarios. This will be critically important as each hospital considers which bundles to continue to participate in.
Conclusion

A survey of more than 300 health information management professionals in the June 2013 issue of the Journal of AHIMA found that 25% of respondents had yet to form an ICD-10 steering committee, and more than half were still in the early stages of ICD-10 implementation.

As disheartening as these figures are, and as daunting a task as ICD-10 implementation is, savvy healthcare professionals know that solid preparation is possible, especially with the right tools and methodologies. And preparation goes a long way toward mitigating risk, turning a potentially difficult situation into an opportunity.

Key data within hospital systems provides the means to predicting which ICD-10 issues represent the greatest risk and need to be addressed first. Organizations that successfully harness these information tools within a guiding framework to weather the ICD-10 storm will have a significant advantage over their peers and be better prepared as new payment models loom on the horizon.

Fortunately, state-of-the-art risk assessment and optimization intelligence is developing alongside health reform and increased data access. Similarly, there is growing recognition of the benefits of comparative analysis over classic benchmarking as healthcare competition and cooperation extend beyond traditional boundaries. Progressive organizations continually will assess their capabilities in both areas as the reform landscape and technologies evolve.

Although payment reform does not have a hard deadline like ICD-10, patterns can develop rapidly in the managed care landscape. With multiple storms brewing, the smart use of data within a simple process framework could be the difference between stacking sandbags at the last minute and strategically relocating well in advance of landfall.
Notes