Unlocking the Benefits of ICD-10 through Data Analytics

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By Crystal Ewing

The reality of the ICD-10-CM/PCS implementation and the fact that it was, by all measures, a success, is the payoff of years of hard work. It's the product of lessons learned from the implementation of 5010 and the outcome of diligence on the part of healthcare professionals, providers, and vendors. According to the World Health Organization (among other proponents), ICD-10 will bring with it a host of benefits.

But will it, really? That all comes down to how the healthcare industry uses the data, and how effectively healthcare professionals measure and maximize the benefits as they realize them. To ground this discussion in the context of data analytics, let's lay out what is really being said when talking about ICD-10.

More Abundant, Granular Healthcare Data Fosters Analytics

ICD-10 dramatically increases the volume, variety, and specificity of healthcare data. Whereas before, much of the detail about a patient's condition, regimen of care, and outcome of that care was masked by general or unspecified codes, these elements and insights are now standardized and clarified on claims.

Healthcare claims were already one of the best sources of healthcare information thanks to the close attention paid to them by payers and providers alike—but ICD-10's specificity has made claims an even richer source of data. This change brings with it certain challenges—specifically, managing and extracting actionable information from increasingly massive data sets. These challenges, however, are ones that other industries have long since found effective ways to address. Now the capabilities of data mining and predictive analytics are making their way into healthcare. It's not that this kind of technology is "brand new" in healthcare. Rather, it's that healthcare data is becoming even better suited to mining and analyzing by using sophisticated forms of applied mathematics and machine learning. Technology can be brought to bear on the data in a way that wasn't possible before, because now so much more information is available in a standardized and specific form.

Free-text/unstandardized data analysis will continue to play an important role in analytics, and will become more powerful as those tools continue to become more sophisticated. Right now there is an incredible amount of value that healthcare professionals can extract from the usage of the ICD-10 code set. This is partly because ICD-10's specificity is so strongly rooted in clinical documentation—it effectively tells the story of the patient's condition, the provider's decisions and actions, and the outcome of those decisions in a way that ICD-9 was never able to.

As we move toward fee-for-value payment models, all of healthcare has to change, and ICD-10 is the foundation of that change. Now let's zoom in and look at how to build on that foundation.

Population Health Management with ICD-10 Finally Improving Clinical Outcomes

Obviously every doctor in America is different in certain ways. A common characteristic, at least among the good ones, is that doctors are extremely, intensely intellectually curious about what really works for their patients. The thrill of discovery—in addition to the joy of helping others—is what drew many of them to medicine in the first place. This is why they welcome hearing about new pharmaceuticals; why they're open to exploring the benefits of at least some forms of alternative medicine; and why they love to talk to each other.

Paired with this intellectual curiosity is the rigor that all good scientists embody—and it's why some attempts at population health management or clinical-quality improvement haven't taken off or have been difficult for healthcare leaders to drive effectively. If there isn't data to support making a change in physician or clinician behavior, these professionals won't make that change. Why should they?

ICD-10 changes that. It paints a richer, more accurate picture of patients' conditions and outcomes. So instead of a provider thinking, "Well, those other patients aren't like my patients," they can instead focus their research and decision-making on data from patients they know are like their patients.

Under ICD-9, some of the most widespread chronic conditions such as hypertension, hypercholesterolemia, and diabetes were often recorded/reported with an unspecified code. The true picture of these patients' health wasn't reflected in the data. ICD-9 effectively represented patients as more similar than they actually were. It called itself into question by being too general, and it made data-based population health and clinical quality improvement decisions more fraught because many of the most important details of the patient's condition were unspecified at the code level.

Hospital Readmissions Reduced by ICD-10-based Analytics

Why are some patients readmitted—but not others? That's a trick question, because how can a researcher ever know why patients readmit if they aren't even sure (at the data level) what conditions people are really suffering from?

Now with the additional granularity of ICD-10 and the data-mining capabilities to uncover and correlate other data points such as care history, demographic information, and comorbid conditions, researchers and analysts can better see what's really driving readmissions because they can better "see" the patient in the data.

That's great news for hospitals who are financially penalized for unplanned readmissions. But more importantly, it's great news for patients because it will help their physicians make even better decisions about the timing of discharge as well as post-discharge care.

The same thing is true of cost and utilization—healthcare professionals can see more clearly what's driving costs and where system utilization can be improved. They can now better see the details contributing to those costs and what's driving that utilization through more specific ICD-10 claims data.

Data Isn't Valuable Without the Right Technology

Having more information isn't helpful if you can't make sense of it—and having a wealth of information can actually be unhelpful if you're forced to manually analyze and prioritize it as it floods in. Data analytics powered by machine learning and applied mathematics is the key to unlocking the benefits of ICD-10. These capabilities enable healthcare professionals to determine, for themselves and their organizations, just how valuable the benefits of ICD-10 can be.

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