Strategies for Mitigating the Impact of ICD-10 on Coding Productivity

By Thomas Grove
About the Author

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Thomas provides IT project leadership with a focus on revenue cycle and compliance-related projects such ICD-10, HIPAA, and Meaningful Use. He leads the delivery of clinical projects, including implementation, optimization, and strategic roadmap development.

With 16+ years of experience in healthcare IT, he has an impressive understanding of the implications of compliance requirements and the strategies required for successful implementation of regulatory compliance measures.

Learn more about Thomas and the rest of the Phoenix team on our website.
The transition to ICD-10 diagnosis and procedure codes is the most profound change our industry has ever faced. This change will have a huge impact, affecting several systems and almost all hospital staff.

One of the most significant impacts that healthcare providers need to prepare for is the dramatic decrease in coding productivity.
Unfamiliarity with the new ICD-10 code set and its greatly increased complexity in comparison with ICD-9, will impact the productivity of any staff members who document, determine, record, or use an ICD-10 diagnosis or procedure code. Nowhere will the impact be more obvious than in the HIM department, where coders’ main job function is determining these codes.

Making precise estimates of exactly how large the productivity impact will be on coders is difficult. A simultaneous replacement of diagnosis and procedure codes on this scale has never been attempted.

Fortunately, studies published during Canada’s transition to ICD-10 and more recent efforts in the United States provide a good basis for building a model of these productivity impacts.
Humber River Regional Hospital (HRRH) in Ontario implemented the Canadian version of ICD-10 CM (disease coding only -- 40,000 codes vs. 70,000 in the US) in their three hospital system in 2002.

The results, which are detailed here indicate that coder productivity fell by approximately 50 percent immediately after transition to ICD-10 and improved to a 20 percent decrease at one year.

The authors of the study noted that “it was at least three to six months post-implementation before there was any appreciable improvement in the decreased productivity and almost a year before productivity levels approached pre-ICD-10 levels.”

<table>
<thead>
<tr>
<th></th>
<th>Productivity Baseline ICD-9-CM</th>
<th>Productivity during the first 3 Months ICD-10</th>
<th>Productivity at 1 Year ICD-10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Charts per hour</td>
<td>Charts per hour</td>
<td>Percentage of baseline productivity</td>
</tr>
<tr>
<td>Inpatient</td>
<td>4.62</td>
<td>2.15</td>
<td>47%</td>
</tr>
<tr>
<td>Day Surgery</td>
<td>10.68</td>
<td>3.82</td>
<td>36%</td>
</tr>
<tr>
<td>Emergency</td>
<td>10.37</td>
<td>6.49</td>
<td>63%</td>
</tr>
</tbody>
</table>
The AHIMA ICD-10 Field Testing Project

AHIMA conducted a time study of ICD-10 coding soon after the US versions of the code sets were released. This first study was extremely valuable as it validates the findings of the Canadian model and confirms that the initial impact on coders will be approximately 50 percent.

The following table is based on data extracted from that study and represents the impacts on coding rates for various lines of service.

<table>
<thead>
<tr>
<th>Record Type</th>
<th>ICD-9-CM</th>
<th>ICD-10-CM</th>
<th>Percentage of baseline productivity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Charts per hour</td>
<td>Charts per hour</td>
<td></td>
</tr>
<tr>
<td>Short term acute care inpatient</td>
<td>6.7</td>
<td>3.8</td>
<td>56%</td>
</tr>
<tr>
<td>Short term acute care outpatient</td>
<td>14.4</td>
<td>6.6</td>
<td>46%</td>
</tr>
<tr>
<td>Clinic/Community health center</td>
<td>24.8</td>
<td>11.9</td>
<td>48%</td>
</tr>
<tr>
<td>Physician practice</td>
<td>19.7</td>
<td>9.0</td>
<td>45%</td>
</tr>
<tr>
<td>Free standing ambulatory surgery center</td>
<td>27.0</td>
<td>13.0</td>
<td>48%</td>
</tr>
<tr>
<td>Home health/hospice</td>
<td>5.6</td>
<td>4.5</td>
<td>81%</td>
</tr>
<tr>
<td>Nursing home</td>
<td>8.9</td>
<td>4.6</td>
<td>52%</td>
</tr>
<tr>
<td>Long-term care hospital inpatient</td>
<td>3.3</td>
<td>2.1</td>
<td>63%</td>
</tr>
<tr>
<td>Rehabilitation/facility</td>
<td>12.1</td>
<td>5.5</td>
<td>45%</td>
</tr>
</tbody>
</table>
The HIMSS/WEDI ICD-10 National Pilot Program

Most recently, HIMSS and WEDI released the first results from their national pilot program, an industry-wide effort to provide data and awareness around ICD-10 testing.

Although productivity measurement was not a key objective of the study, the authors note that, using ICD-10, coders averaged two medical records per hour, compared to four per hour under ICD-9. This 50 percent decline in initial productivity is consistent with the other two studies, and will be used as the baseline short-term impact for our model.

The results also note that average coder accuracy is only 63 percent.
Coding Productivity Model

Based on these studies we believe that hospitals should plan for a 50 percent reduction in productivity for their current coders in the first three months. Coding productivity should improve, as suggested by the Humber study, leveling out at 80 percent of ICD-9 levels one year after ICD-10 implementation.

The figure below shows this graphically, and indicates two “regions” of productivity impact. The permanent impact region, consisting of the 20 percent impact that is not expected to recover, and the temporary impact region, consisting of the productivity that coders are expected to recover after a year of ICD-10 coding.

If not mitigated, the effects of this coding productivity loss will be catastrophic. Claims will go un-submitted, reimbursements will drop by half, and financial ruin would be only a short distance away. No hospital has the excess coding resources to absorb this impact.
ICD-10 will cause a temporary drop in coding productivity of 50 percent and a permanent drop of 20 percent.

Many hospitals are taking a blended approach to addressing this gap, using technical improvements and other strategies to avoid having to double their coding workforce. Still, there is no doubt that the simultaneous transition to ICD-10 in every hospital and physician practice in the country will produce an extreme strain on the availability of resources.

Even before ICD-10 was introduced, experienced medical coders were in demand. In a Salary Survey conducted for AAPC in 2010, it was found that, while overall unemployment was near 10 percent nationally, unemployment for credentialed coders was significantly lower – between 5.6 and 6.8 percent. Even if the 6.8 percent of presumably available coders are ready and willing to code ICD-10 charts, they won’t come close to meeting the nationwide demands. As a result, hospitals and physician practices risk not having sufficient coding resources on October 1, 2015.
We expect hospitals to see at least three key pressures on their coder staffing levels over the next year.

1. The best trained and most experienced coders will be recruited heavily by the national coding outsourcing firms. Ironically, these same firms will be standing ready to sell you back those resources at a profit.

2. The overall salary of experienced coders will rise significantly as competition heats up for those resources.

3. Some smaller percentage of coders will choose to leave the workforce rather than re-train for ICD-10.

What can hospitals do to recruit and retain coders?
Strategies to Recruit and Retain Coders

Hospitals should consider using a blend of human resource strategies to support recruitment and retention in the coding workforce.

**These strategies include:**

**Improve the perceived quality of the work environment.**

Many hospitals are seeking creative ways to encourage coders to remain in / join their teams. These include introducing work-from-home strategies, offering increased flexibility in shift scheduling, and providing opportunities for increased public recognition of the coding staff and its value to the organization.

**Increase salaries.**

The drive to add coding resources will most certainly cause a general rise in coder salaries nationwide. Healthcare providers in competitive urban environments will probably feel this more, but the proliferation of national coding vendors with work-from-home programs means that even the most rural institutions will see salary pressure.
Implement retention plans.

The coders most in demand will undoubtedly be the most experienced and most highly trained. The very act of training your workforce for ICD-10 makes them all that more attractive to your competitors. Those senior resources already trained as ICD-10 trainers are particularly at risk. Already, many hospitals have trained their supervisor-level coders to be ICD-10 trainers, only to lose them immediately after training, to a competitor.

Some hospitals choose to include a penalty in their retention plans – if you leave the workforce before a certain date, you repay the cost of your ICD-10 training. This is a valid approach, but goes against the concept of improving the coder’s perceptions of your workplace. Also, national coding vendors recognize that many coders are under such provisions, and do not consider paying the penalty as an obstacle, in order to fill their own positions.

A more positive strategy to consider is paying coders a retention bonus. Many employees consider the loss of a bonus to be a stronger motivation than a penalty. The possibility of a bonus will likely improve perceptions of loyalty, and a competitor for your staff is probably less likely to provide matching of potential bonuses as a hiring incentive.
The same strategies that improve work/life and employee perception, are effective during recruitment. **Employers have always recognized that current, happy employees are one of the best sources of leads for new hires.**

By focusing on improving the quality of work and the work environment for existing employees, and providing recruitment bonuses to current employees, hospitals can maximize the value of this important internal resource.

Now that you have your coders in place, how do you minimize the decrease in coding productivity?
How to Minimize the Decline in Coding Productivity

Training

Training is central to any hospital’s plan to maintain adequate coding productivity after the ICD-10 transition.

AHIMA recommends that hospitals dedicate at least 50 hours for inpatient coder training.

This recommendation includes:

• 16 hours of training on ICD-10-CM
• 24 hours on ICD-10-PCS
• 10 hours on additional practice

Note that these estimates assume that coders have existing knowledge of anatomy, physiology, pathophysiology, pharmacology, and medical terminology to correctly apply codes using ICD-10-CM and ICD-10-PCS.

Unfortunately, many hospitals are finding that even their best trained coders have not worked with some of the background concepts in the detail required for ICD-10 since their formal coding training. To mitigate this, these hospitals are including refresher courses in these areas – typically an additional 12 – 24 hours of background review prior to beginning formal ICD-10 training efforts. This total of 75 hours is consistent with a number of other recommendations and vendor training programs we’ve reviewed, and would provide a good basis for beginning your coder training plan.
Formal Training Approaches

There are a variety of ways that a hospital can approach formal training for coders.

These include:

• **Hiring a trainer to provide formal classroom training.** Instructor-led training tends to provide a very productive training environment, because of the interactive nature of the training. The key disadvantage is that once the trainer leaves, the hospital lacks resources to train additional coders, or to get coding questions answered as coders begin to practice coding in ICD-10.

• **Using an online coder training program.** Many hospitals have chosen to use online training programs, as they offer significant flexibility – coders can train on separate schedules, and thus avoid the impact of all the coders being unavailable at the same time for classroom training.

• **Hiring or training a dedicated ICD-10 trainer.** For departments that are large enough to dedicate resources, hiring or developing a dedicated trainer represents the most flexible option, as multiple coding sessions can be offered to break up the impact on the staff, and the trainer remains as a dedicated resource to work with the staff.

Many hospitals are choosing a blended approach, using combinations of one or more of these methods to best suit the needs of their workforces.
**Practice Coding Approaches**

To ensure that coders are ready to code productively, hospitals should ensure that coders have opportunities to practice ICD-10 coding before the transition date.

There are many approaches to practice coding.

- Some hospitals have chosen a formal dual-coding strategy where some portion of each day’s charts is coded in both ICD-9 and ICD-10. This has the advantage of minimizing the coder’s time per chart, because they are already familiar with the contents after the ICD-9 coding, but requires significant oversight by a trainer / quality analyst to ensure that the ICD-10 coding is correct.

- Others are choosing specific charts to be coded by all coders. This decreases the number of charts that have to be coded in ICD-10 to serve as the answer key for quality measurements, and provides more realistic time estimates of actual ICD-10 coding.

- Still others are using practice charts provided by their coder training vendor. This will probably prove to be the easiest process to manage, although using unfamiliar charts will provide an additional barrier to the coder’s timely and correct coding.

Many hospitals estimate that practice coding performed before the transition date will speed their coders progress from the 50 percent initial productivity decrease to the 20 percent permanent loss. They anticipate that this will offset some of the costs of the practice coding program, particularly where expensive contracted resources are used to make up for the productivity drop.
Eliminate Non Coding Work

In many coding shops, coders do additional work as part of the handling of a chart that isn’t actually coding. Since the coder is often the only user to touch a chart between discharge and billing, the coder is often asked to perform various other tasks as well, such as identifying physicians and other forms of data abstraction.

Such extraneous tasks take time away from the core activity of coding. While it may be more efficient in terms of total time per chart for one person to do all of the chart activity, the abstraction tasks can be performed by a trained data entry person who is not a scarce resource in the post ICD-10 world.

Documenter Training

One activity that eats up a coder’s time is documenting queries to the physician or other documenter. If coders can’t find a specific piece of information needed to code the chart, they search the entire chart for that piece of data before querying the physician. As a result, time is spent reviewing the chart, drafting the query, reading the response to the query, and re-reading the chart and completing the coding.

An effect of training documenting physicians is that, once they understand the data elements required for coding, they are likely to put them in the same place on the chart every time, speeding the coder’s review. Providers who have been well trained to improve their documentation to meet ICD-10 standards will greatly improve the efficiency of coders.
Resource Availability

For coders to work at their highest efficiency, they need quality reference tools. The volume of this reference documentation will increase because of the much greater number of codes under ICD-10, as compared to ICD-9. HIM departments should evaluate electronic reference applications for coding use. Many internet-based resources are available that provide the coder with code search tools that replace paper codebooks, as well as reference material on anatomy and physiology and other guidance tools like Coding Clinic articles. These tools usually aren’t free, but most are reasonably priced.

Provide a Central Resource for Coder Questions

Many hospital-based coders consult one another when they need a coding question answered. After the ICD-10 transition, however, other coders are probably just as inexperienced with the new code set. Asking questions this way is likely to waste time, taking coders away from their coding.

Hospitals should provide an official channel for coders to ask ICD-10 coding questions. This ensures that only the coder with the question is diverted from actual coding. Limiting the coder questions to a single source also provides the hospital with data about the most common questions. This single source can be used to provide education for all coders.

It’s not difficult to see how the above concept is basically a coding help desk. Consider that, once the coding help desk is created, it will be beneficial to enable questions from billers, schedulers, and others within the organization. Also consider offering access to the coding help desk to affiliated physicians offices as part of the organization’s physician engagement strategy.
ICD-10 and Computer Assisted Coding

Computer Assisted Coding (CAC) applications are about to experience an influx of growth. According to a HIMSS Analytics report, profiling 25 support service applications, CAC shows to have the highest growth potential. *Note: the HIMSS Analytics report is only available to HIMSS Analytics members.

This growth is almost certainly in response to the projected productivity impact of ICD-10. As the implementation deadline gets closer, many healthcare organizations are examining Computer Assisted Coding Technology (CAC). Given the increased interest, it’s important that hospitals truly understand how CAC works and set realistic expectations for how the technology will impact coding productivity.

CAC uses computer software to generate a set of medical codes for review, validation, and use by the coder, based upon provider clinical documentation. The integration of CAC technology into the coding shop is a complex process that ultimately involves using CAC tools to review all of the electronic documentation in a patient’s chart before the chart is seen by a coder, and providing the coder with proposed codes to work with when finalizing the coding of the chart. The general idea is that the computer does the more “tedious” work of reviewing many pages of documentation. The coder is then free to spend more time making the careful judgments about which diagnoses are appropriate to code and in what sequence to accurately represent a clinical visit.
It should be made clear that, while CAC provides technological assistance in the uniform assignment of valid codes and descriptions, it does not replace the role of coders.

CAC support frees the coder to focus on the review and validation of the CAC output, and other high-value tasks such as ensuring compliance with correct coding initiatives, CMS and other payer specific policies, and local coding rules prior to code acceptance and billing.

Because of these benefits to both the facility and the coder, AHIMA has recommended broad adoption of CAC technology.
How Does CAC Work?

CAC software applications process clinical information from electronic documents and generate codes for validation by medical professionals.

Generally, this is done using some form of Natural Language Processing, which employs complex algorithms to recognize language patterns, generate codes, and enable querying electronic text.

The logic can be very complex. Imagine the following clinical scenarios:

- The patient has long-standing CHF, which does not appear to have changed in severity.
- The patient has new-onset CHF.
- The patient does not have any signs of CHF.
- The patient will be referred to the CHF for follow-up. (Where the CHF is the coronary health facility)

Each of these four scenarios uses the term CHF (which in the first three cases is a reference to congestive heart failure), but the interpretation of the scenarios is significantly different.
Benefits of CAC

CAC as an ICD-10 training tool

Most CAC products analyze the clinical language contained within the chart for both ICD-9 and ICD-10 codes, and the coder has the option to review those recommended codes side by side. This presents the coders with feedback about potential ICD-10 codes, even before the transition date.

Productivity

As mentioned previously, CAC is being evaluated specifically as a tool to address coding productivity, and there are numerous case studies suggesting that productivity may increase from 10 to 15, or even 20 percent after the implementation of CAC tools. Of particular note is that the tool seems to most benefit slower coders.

Accuracy

Many facilities are considering CAC as a tool to help mitigate the risk for increased coding errors because of unfamiliarity with the new codes.

Case Mix

One thing that CAC does well is identification of secondary diagnoses, some of which may be mentioned in only one place in the chart. Because the CAC technology does so well at identifying complicated conditions and secondary diagnoses, many facilities see an improvement in their case mix index after implementing CAC.
Practical Considerations for CAC

New Technology

CAC applications are still an evolving technology. Although research and development in the technology has been going on for years, it is only in the last three years, with the proliferation of new EMRs created by the federal Meaningful Use incentive program, that the technology has been deployed broadly.

Cost

CAC technology is relatively expensive. Hardware, Initial licensing fees, ongoing maintenance fees, and needed IT support can easily run over $500,000 / year for a health system of 1,000 beds. And, even though smaller hospitals generally pay less in licensing fees for the software, the per-chart cost is often higher.

Many hospitals find that the ROI on CAC projects is actually very reasonable, because of the expected increases in case mix and decreases in overtime, use of outsourced coders, and higher coder productivity. CAC vendors have a variety of pricing strategies available to help address the burden of the up-front costs, so the forward-looking hospital should not see cost as an absolute barrier until analysis has been performed.
Electronic Record Availability

To reap maximum benefit from CAC, it is important that most of the clinical record be available electronically. Many organizations have not yet implemented EMRs in all of their facilities, or have only partial implementations (such as progress notes not being available). Organizations need to evaluate their particular EMR configuration in order to determine if they can fully realize the benefits of the technology.

Timing

The advantages of CAC technology and the realities of coder productivity under ICD-10 have caused a dramatic increase in hospitals wanting to implement the technology, and most large CAC vendors prefer a three to six month implementation cycle once staffing and hardware are available. As a result, most facilities who haven’t made the decision to implement CAC yet will probably not be able to do so before October 1, 2015.

Bottom Line

The decision to implement CAC technology is not a simple one. Facilities need to do a complete analysis of the potential cost savings and case mix benefits before committing to CAC as part of their coding strategy, and the strategic implications of the implementation must not be overlooked.
In Summary: Where to Go from Here

One of the biggest challenges the industry faces is that every provider in the United States will be making the transition to ICD-10 on the same day and will face the same coding productivity challenges.

The foundation for your plan to address productivity must begin with a strong training effort for your existing workforce. It won’t solve your productivity problem – all of the 50 percent decrease examples noted in recent studies started with trained coders – but if your existing workforce isn’t able to begin coding to the expected throughput, all of the rest of your efforts to meet coding targets will still fall short.

Begin recruiting now, if you haven’t already started. Train coders early on to provide plenty of practice time before October 1, 2015. Use carefully considered recruitment and retention strategies to address the overall coding resource shortage.

Many health care providers are turning outside the organization to coding outsourcing vendors. Although many of the organizations that are US based are reaching their projected capacity, there are many that utilize off-shore resources for a portion of their coding. Both types of companies can provide an alternative to full-time hires when properly managed.
Many organizations are evaluating the relatively new computer assisted coding (CAC) technology as a solution to meeting their coding productivity needs. CAC presents a viable resource to support coding accuracy and throughput, but remember, it doesn’t replace live coding staff. Note that hospitals that aren’t well along in the CAC purchase and installation pipeline will probably not be able to deploy it by October, 2015.

Finally, consider revamping your coding workflow to eliminate non-coding work. Ensure that your physicians are fully trained to provide coders with the level of documentation they need to code charts in ICD-10. Provide coders with appropriate reference materials, as well as one knowledgeable central resource to answer their inevitable questions.
Phoenix Can Help

As knowledge leaders in ICD-10, Phoenix consultants deal with complex issues such as finding solutions to coding productivity challenges with hospitals and other healthcare providers.

If you have questions, or want to discuss how we can help you with your particular ICD-10 implementation challenges, request a meeting or simply give us a call at the number below.

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Request a Meeting