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ICD-10 implementation: Is the workforce ready?

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ABSTRACT

After many delays, the U.S. finally implemented ICD-10-CM/PCS on October 1, 2015, bringing the U.S. into line with other industrialized nations, most of which have been using ICD-10 for many years. We outline the benefits and challenges to the preparatory activities of the ICD-10-CM/PCS implementation for the U.S. healthcare industry. To ease the transition, CMS allowed healthcare facilities to submit test claims prior to the implementation date, and delivered feedback on the acceptability of those claims. Early results indicated a relatively smooth transition, although some questions regarding the available data remain. Additional data, especially data concerning outcomes, is required.

INTRODUCTION

The first International Statistical Classification of Diseases (ICD) dates back to the works of botanist and professor Francois Bolssier de Sauvages de la Croix, who in 1771 developed a taxonomy of 2400 diseases, called the *Nosologie methodique,* of which he divided into 10 different classifications (Duchan, 2011). Even though Sauvages de la Croix's method of systematically classifying diseases was studied and revised by many in his field throughout the centuries, statistical analysis using a disease classification system was first used by John Graunt, who a century earlier began his estimation of how many live births ended in death by the age of six years (WHO, 2015a). In 1989, at the recommendation of the American Public Health Association, the United States (U. S.), Mexico, and Canada adopted the Bertillon Classification of Causes of Death, the international standard at that time (Duchan, 2011).

After many years of continued development of the classifications of disease, it was in 1946 that the United Nations charged WHO with the responsibility of the ICD, including all revisions (Topaz, Shafran-Topaz and Bowles, 2013). The International Classification of Diseases, Ninth Revision, (ICD-9) was developed in the late 1970s and adopted by a multitude of countries around the world in the early 1980s. The ICD-9 classification system did not meet the clinical needs of American healthcare providers and facilities, so the National Center for Health Statistics and the Council on Clinical Classifications jointly developed the International Classification of Diseases, Ninth Revision, Clinical Modifications, (ICD-9-CM) (Topaz, Shafran-Topaz and Bowles, 2013). Even before the ninth edition was completed, WHO leaders recognized that a larger classification would be needed in the future so, during 1985-1989 the International Classification of Diseases, Tenth Edition, (ICD-10) was developed and structured and finally published in 1990. While many countries have used the International Classification of Diseases, Tenth Revision, Clinical Modification/Procedural Coding System (ICD-10- CM/PCS) since that time, the U.S. just implemented it on October 1, 2015 after being postponed several times (WHO, 2015b).

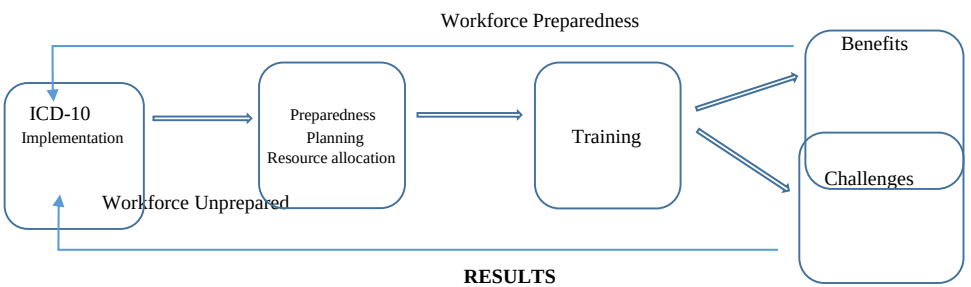
The purpose for transitioning to ICD-10CM/PCS was due to outdated medical terminology with ICD-9, the discovery of new treatments and diseases, the lack of specificity from the ICD-9 code set, as well as its inability to track public health issues (Coustasse and Paul, 2013). The switch to the ICD-10-CM/PCS coding system will affect nearly everyone within the health care system (physicians, researchers, health information technology workers, medical coders, and even policy makers), and will reduce costs, improve quality of care of all patients, and update the way healthcare data are captured to positively affect health care outcomes (Sanders et al., 2012). It allows all providers to speak the same language as those that tell the patient's story by accurately coding the severity and specificity of the disease (CMS, 2014a).

With a continuous expansion of health information technology, advancement of health care delivery, and a more detailed coding system, medical information sharing on both a national and international basis can advance with greater ease than ever before (Johns et al., 2013). The ability to share data on a global level will better prepare a nation for times of imposed threat, bioterrorism, national disasters, or outbreaks of epidemic measures due to the specificity and uniformity of the information (Johns et al., 2013).

The purpose of this research was to explore the impact of ICD-10-CM/PCS on the U.S. healthcare workforce to determine if it was adequately prepared for the October 1, 2015 implementation of ICD-10 CM/PCS in regards to preparedness planning, resource allocation, and training.

The conceptual framework for this research is illustrated in Figure 1 (see below). The authors posited that the workforce was prepared for the October 1, 2015, ICD-10 implementation based on sufficient preparation, training, and resource allocation. The benefits of having the deadlines for implementation pushed back for approximately three years were that it allowed for additional training hours and time for facilities to customize their implementation strategies. Conversely, the costs associated with additional training and customizing implementation strategy has posed challenges to hospitals and physician practices industry wide. Coders were mandated to be certified on the ICD-10-CM/PCS coding system due to the complexity and specificity of the classification system. This placed additional pressure on employers in regard to budgeting and allocating adequate resources.

Figure 1: Research Framework: ICD-10-CM/PCS Implementation: Is the Workforce Ready? (adapted from Yao, Chao-Hsien and Li, 2010)



RESULTS

The complexity of the ICD-10-CM/PCS system was illustrated by ASTRO (2015) in a comparison to the ICD-9-CM system. It outlined that the number of codes have increased from approximately 14,000 to approximately 68,000 with code structure and digit changes from 3-5 characters to 3-7 characters. Other positive changes included laterality, specificity (better descriptions) and greater capacity to add codes (see Table 1, below).

Table 1: ICD-9-CM and ICD-10-CM/PCS Coding Comparison

Comparison	ICD-9-CM	ICD-10-CM/PCS
Number of codes	Approximately 14,000	Approximately 68,000
Laterality	Lacks laterality	Has laterality (i.e. right vs left) for better specificity
Code Structure (length)	3-5 Character	3-7 Characters
Code Structure- Type of digits	Digit 1-alpha or numeric Digit 2-5 – numeric	Digit 1- alpha Digit 2-3- numeric Digit 4-7 – alpha or numeric
Capacity to add codes	Limited space for adding new codes	Space for adding new codes

Source: ASTRO (2015)

In a survey conducted by the Professional Association of Health Care Office Management, it was reported that the average cost for ICD-10 related expenses for physician practices with six or fewer direct care providers (physicians, physician assistants, and nurse practitioners) was $8,167 with each provider spending $3,430 in 2014 (Blanchette, Averill and Bowman, 2015) (see Table 2, below). The average time utilized by the workforce was 45.5 hours per job title (physicians, non-physician providers, support staff, and management). Based on the survey, the outlay for ICD-10-CM/PCS implementation was seen to be notably lower than initially outlined as $22,560-$105,506 (Sand and Elison-Bowers, 2013).

Table 2: Survey of ICD-10 Implementation Costs in Small Physician Office

Number of Providers	Practice Average Expenditures	Per Provider Average Expenditures
1	$4,372	$4,372
2	$6,620	$3,310
3	$9,641	$3,214
4	$13,541	$3,385
5	$11,960	$2,392
6	$11,028	$1,838
Total	$8,167	$3,430

Source: Blanchette, Averill, & Bowman (2015)

Jackson and Muckerman (2012) conducted a survey that consisted of 20 multiple-choice and true/false questions for ICD-10-CM and ICD-10-PCS. Questions referenced prior knowledge of ICD-9-CM and previous ICD-10-CM/PCS training. Their survey determined that a majority of those sampled indicated awareness at high levels among individuals in management directly responsible for the execution of the transition, but a majority also reported there was no engagement of staff and clinicians to garner understanding of ICD-10-CM/PCS, although this was intended for the future. A second survey from Jackson and Muckerman (2012) measured challenges, common trends, and comparative ideas for implementation. Training was identified as the most significant hurdle of the transition with intense face-to-face training across the work force being the most important and costly component of implementation related to reduced productivity. The participants forecasted a 25% productivity decrease within the first six months of transition with an estimated need for up to 80 hours of intense training for coders (Jackson and Muckerman, 2012) (see Table 3, below).

Table 3: Matrix of Findings of Lessons Learned During Healthcare Provider Transition to ICD-10-CM/PCS

	Geisinger Health System	Kindred Healthcare	Tenet Healthcare Corporation	Urban Health System (Anonymous)	Integrated Health System (anonymous)	Pediatric Healthcare Facility (Anonymous)
Reported high levels of awareness among executive leadership, project managers, and individuals directly responsible for the transition.	X		X	X	X	X
Had not engaged clinicians and staff in order to raise		X	X	X	X	X

awareness, but planned to do so in the future.						
Reported being in the early stages of assessments, or having conducted only high-level impact assessments, but expected to drill down into this process in the coming year.		X	X	X	X	X
Budgeted significant funds for the conversion effort in 2010.					X	
Planned to budget funds in the near future, or budgeted minimal funds in 2010 for expenses such as train-the-trainer courses.	X	X	X			
Engaged in crosswalking or reimbursement testing activities.	X					
Regarded training as the most significant and costly component of the transition.		X		X		X
Expressed confidence that vendors would be ready for the transition.	X					X
Expressed concern that vendors would not be ready for the transition.					X	
Challenges						
Noted difficulty creating a sense of urgency within the organizations.		X		X		
Believed government might push the 5010 and ICD-10-CM/PCS conversion deadlines back.				X		
Reported a need to raise awareness among physicians.		X	X	X	X	
Anticipated difficulty staffing for the transition and backfilling coder positions to accommodate for productivity losses.		X			X	X

Cultivate a sense of urgency around ICD-10-CM/PCS preparation.			X		X	
ICD-10-CM/PCS developments.						
Be prepared for increased workforce needs.		X			X	X

Source: Jackson & Muckerman, (2012)

Houser et al. (2013) surveyed 43 hospital administrators and HIM directors, and found that only 15% of the facilities had begun planning for ICD-10-CM/PCS implementation prior to 2011, 53% actually started strategizing in 2011, 25% began in 2012, and the remaining 5% were uncertain. The key objectives were to identify each organization's plan for staff training, and to measure the perceived transition barriers and challenges. All participants in this latter survey agreed that training their current coders and hiring additional coders was a critical step to eliminate an anticipated decrease in productivity.

The survey highlighted a 4-phase hierarchy responsibility model. Phase 1 covered training with 96% believing that the responsibilities lie with senior executives, 90% with the HIM leadership, and 81% with IT senior directors and personnel. Phase 2 included implementation preparedness (including coder training) with coding staff accounting for 90%, of billing personnel and financial managers at 72% and HIM key personnel at 70% (phase 3 was "go-live" readiness and phase 4 follow up post implementation) (Houser et al., 2013).

After September 30, 2015, claims processing systems at CMS were unable to process ICD-9 codes for physician and hospital services due to the ramifications that dual coding would have on the various risk adjustment programs that participate with CMS, as well as the negative impact it would have on their methods of quality reporting (Canady, 2015). It is anticipated that once all healthcare providers understand that they will be reimbursed at a higher level for using ICD-10-CM/PCS codes, the choice to use them will be simple (Canady, 2015).

The implementation of ICD-10 will affect everyone who is involved in patient care and services. Physicians must be more diligent in their documentation to ensure that correct codes are used; administrators will need to oversee the launch of ICD-10 in their facilities, and the education of staff; scribes must be educated to get the necessary information from the patients; registration staff will be faced with new forms and new requirements for precertification of insurance (AAPC, 2010)

AGS Health in New York, like many providers, has been concerned that the switch to ICD-10-CM/PCS could seriously impact their cash flow. To mitigate any problems, AGS have been training their employees to submit their claims on time and in the correct format, and they have also hired an additional 300 coders over that past three months to provide additional coding support for the potential loss of productivity (Sandler, 2015).

Recognizing the concerns of providers, that codes and payments may be incorrect, for the first year after implementation the CMS have relaxed their reimbursement rules, and will not deny payment if the first three characters of the code are correct, that is, if the code is at least from the right family of ICD-10-CM/PCS codes (Fassbender, 2015). Medicare may still deny claims for other current policy reasons, and private insurers, Medicare Advantage and Medicaid have not yet committed themselves to the same level of leniency (ASHA Leader, 2015).

CMS has allowed Medicaid payment services in four states, California, Maryland, Louisiana and Montana, to convert provider submitted ICD-10-CM/PCS codes into ICD-9 codes for payment (Conn, 2015). Concerns have been identified about the accuracy and timeliness of payments for treatment of Medicaid patients. This so-called "crosswalk" solution will affect about 20% of the 15 million Medicaid patients in the four states; the remaining patients are covered by capitated Medicaid plans, where individual services are not billed separately (Conn, 2015).

A long-term study using Hospital Discharge Data raised concerns about the initial quality of data after the switch to ICD-10-CM/PCS, because of expected coding errors (Andrews, 2015). Concerns were also expressed about the ability to produce accurate multi-year reports when both ICD-9 and ICD-10-CM/PCS codes will have been

recorded concurrently (Andrews, 2015). However, there are plans to minimize the problem of data consistency with previous years by using General Equivalence Mapping tables supplied by CMS, which has allowed conversion of ICD-9 codes to ICD-10-CM/PCS and vice versa (Andrews, 2015). Unfortunately, because of the greater number and specificity of ICD-10-CM/PCS codes, one study found that 23% of codes mapped in this way were clinically incorrect (Krive et al. 2015).

Physicians are still the big "unknown" in the equation, with little research available to suggest how ready they will be to code their diagnoses in ICD-10-CM/PCS. (Manchikanti et al. 2015). Many physician-penned articles are still fighting against the implementation, even in 2015, condemning the ICD-10-CM/PCS codes as overly specific, and therefore more time-consuming for them to use (Manchikanti et al., 2015). It has been suggested that claim-acceptance rates by Medicare will fall from the current 97% to 81%, which would cause insurmountable cash flow problems for some practices (Ray and Norbeck, 2015). As late as June 2015, one third of a surveyed group of physicians were either unsure if the October 1st 2015 implementation date would be delayed again, or believed that it would be delayed (Ray and Norbeck, 2015)

In June 2015, with less than four months away from implementation, only 50% of providers had conducted test transactions with payers, 66% had not completed internal testing, and 83% had not completed external testing (iHealthBeat, 2015). One bright note was that the latest round of testing by CMS, in April 2015, showed an improvement from 81% claim acceptance to 88% compared to the previous round of testing in January 2015 (Handleman, 2015). Only 3% of claims were denied because of ICD-10 errors: 3% of these claims were denied because they had invalid ICD-0 codes, another 3% were denied due to invalid ICD-10 codes, and 13% were denied foe non ICD-10 errors (CMS, 2015b). CMS has issued guidelines (CMS, 2015c) to assist providers with how to evaluate the key performance indicators associated with assessing their progress in transitioning from ICD-9 to ICD-10, and private companies (e.g., Medical Coding.net, Optum360Coding.net, Jet.com) have begun making available their own readiness assessment tools as well. Anecdotal accounts have described the transition from ICD-9 to ICD-10 as uneventful, even characterizing it as similar to Y2K (Eramo, 2016), but hard data regarding the success or failure of the transition appears unavailable to data; e.g. the Workgroup for Electronic Data Interchange launched a survey in an effort to quantify the success of the transition (Anonymous, 2016), and in a letter to the Secretary of HHS characterized the transition as having gone very well, although admitting that the sample size was small, which they attributed to "organizations [having] moved well beyond the implementation process and have settled into ongoing operations under ICD-10" (Narcisi, 2016, p. 6).

DISCUSSION

The purpose of this literature review was to examine the readiness of healthcare workforce for the transition from ICD-9 to ICD-10-MC/PCS in regards to costs, training, and additional staffing. The results of this review indicated that the transition went smoothly overall, which is not particularly surprising considering the many delays in implementing the transition to ICD-10 (Coustasse and Paul, 2013). Early results (e.g., Jackson and Muckermanm 2012) identified varying levels of preparedness among providers regarding ICD-10-CM/PCS implementation. While there were high levels of awareness for the transition in leadership roles, many providers had not raised awareness among their clinicians and support staff. But, out of six respondents, three saw an urgent need to increase their workforce for up to two years after the transition to offset the anticipated financial impact. With an estimated 25% reduction in medical coding productivity, one respondent committed to hiring ten additional coders for the 12,000 physicians on staff.

In an effort to offset loss of productivity and preparedness for the transition, some facilities had medical coders dual coding (ICD-9 and ICD-10-CM/PCS). Others, however, waited until a few weeks prior to implementation to even begin training their staff, concerned that any training that was provided prior to then would be forgotten. Despite the fact that coding problems would cause billing errors and cash flow problems, by June 2015, only half of health care providers nationwide had tested ICD-10-CM/PCS transactions with payers, to ensure that these transactions would be paid at the expected amount, and in a timely fashion.

With cost playing a crucial role, it was reported in June 2014 that coversion cost for ICD-10-CM/PCS for small physician offices were much lower at $1,960 -$5,900 (per practice) than the 2008 estimate of $22,560 -$105,506 (per practice). These lower cost could possibly be from vendor response to the ICD-10-CM/PCS transition. Nominal cost or free educational materials, software programs, and billing tools are mentioned as possible indicators of the

overall reduction in implementation costs (Kravis et al., 2014) with many vendors including the ICD-10-CM/PCS cost in their annual maintenance fees. Other savings included a $1.8 billion for Medicare, due to providers failing to document and bill at the highest level possibly for their services (Kravis et al., 2014).

There is still little published research about the readiness of physicians of the ICD-10-CM/PCS transition. What we do know is that the American Medical Association remain firmly opposed to the change, and that many physicians were ambivalent or antagonistic towards it. Because of this, many physicians penned articles that demonstrated a certain bias, and some publications have been biased in the articles they commissioned and published. Bias in favor of the conversion to ICD-10-CM/PMS would likely be found in those articles published by entities with a stake in the conversion, such as CMS. All of the authors have been involved in some way with ICD-10-CM/PCS implementation, so author bias could be expected.

Since the October 1, 2015 deadline has passed, providers now stand the risk of delays in their reimbursement if bills submitted are not complainant with the ICD-10-CM/PCS format. Even a small increase in the percentage of bills returned to the provider for ICD-10-CM/PCS noncompliance, or rejected, could seriously impact cash flow. In an industry which is known for low profit-margins, some hospitals may find themselves at risk to survive the transition period. Providers must be in close contact with lenders so that they have a plan of survival through the transition period if cash flow is negatively affected. In addition, a contingency plan to cover employee wages during the transition should be in place for possible negative impact.

Hospitals should expect to provide extra help to physicians in the first few months after implementation, as physician frustration could derail all preparations previous put in place. If that happens all the training of coders, and hiring of extra staff, will come to naught. Since the rollout of ICD-10-CM/PCS was October 1, 2015, more research is needed because these is no data available for comparison and practical implication as this time.

The above concerns notwithstanding, it now appears that the transition from ICD-9 to ICD-10 went much more smoothly than many expected, perhaps due to the many delays which occurred between announcement of the anticipated transition and its actual occurrence. However, additional data on the success of the transition will be necessary to determine if the early results reflect a trend or are reflective of fact that CMS and other payers are being deliberately lenient regarding the coder readiness and claims volume during the transition (Veazie, 2016). The true measure of the transition from ICD-9 to ICD-10 will be when reimbursement data becomes available, and that has not yet come to pass.

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