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Public Health Policy Opinion

The Disastrous but Preventable Consequences of ICD-10

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The historical Health Insurance Portability and Accountability Act of 1996, also known as HIPAA, or Kennedy-Kassebaum Act, named after 2 of its leading sponsors, was enacted by the United States Congress, controlled by Republicans, and signed by President Bill Clinton, a Democrat, in 1996 (1). As the name indicates, Title I of HIPAA protects health insurance coverage for workers and their families when they change or lose their jobs; however, it extends much further in scope and practice. Title II of HIPAA, also known as the administrative simplification provisions, requires the establishment of national standards for electronic health care transactions, and national identifiers for providers, health insurance plans, and employers, which also includes regulations of health care fraud and abuse. This law inconspicuously included a provision in reference to diagnosis and procedure codes. A January 2009 Department of Health and Human Services (HHS) final ruling states that the health care providers and other entities using the International Classification of Diseases (ICD-9) diagnosis and procedure codes must convert from using ICD-9 to ICD-10 on October 1, 2013 (2). This is based on HIPAA, which essentially states to update ICD-9 diagnosis and procedure codes, without explicitly stating to convert from using ICD-9 to ICD-10. Since then, multiple manuscripts have been written, along with lobbying efforts by multiple organizations, including the American Society of Interventional Pain Physicians (ASIPP) and the American Medical Association (AMA) to indefinitely delay the implementation of ICD-10-CM until appropriate necessity is proven and the consequences, both intended and unintended, are established (3-8). Multiple reasons have been described. Important reasons for delaying the implementation of the new ICD-10 coding system as described in Health Affairs (5) were the ICD-10-CM conversion will be expensive, arduous, disruptive, and of limited direct clinical benefit. Others (3,4) have described lack of proof of necessity to implement and lack of study of negative implications. Consequently, in August 2012, the HHS ruled that ICD-10 implementation deadline would be postponed until October 1, 2014 (9). Now the clock is ticking, leaving physicians only 8 or 9 months for implementation of this ruling.

ICD-10 is one of the major regulations impacting physicians in 2014, which also include cuts related to the sustainable growth rate (SGR). (3-5,10-14). This rule will affect physicians generally with specific challenges for interventional pain physicians who are already reeling from multiple other issues including draconian cuts with specific impact. The cost of HIPAA has been underestimated, costing practices billions of dollars in implementation over the years. For hospitals alone, HIPAA rules are costing $8.3 billion a year (15). The majority of the health care and IT professionals in organizations that ranged from fewer than 100 beds to more than 500 felt that HIPAA compliance requirements can be a significant barrier to providing effective patient care, which reduces time available for patient care (according to 85% of respondents), makes access to electronic patient information difficult (79%), and restricts the use of electronic communications (56%). The overall total cost of HIPAA was estimated to be over one trillion dollars; however, costs continue to escalate. One such small provision in HIPAA,

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namely ICD, with expected implementation starting October 1, 2014, is expected to cost $83,290 to $2.7 million based on the size of the practice. Further, cash flow disruptions may range from $50,000 for very small practices and $1 million to $15 million for mid size and large practice (16,17). A new ICD-10 study confirms that the Centers for Medicare and Medicaid Services (CMS) underestimates costs and time required in implementing a complex new code set, even though CMS had acknowledged cash flow and other issues (18-20). A study (16) conducted by multiple organizations, including the American Academy of Dermatology (AAD), American Association of Neurological Surgeons (AANS), American Association of Orthopaedic Surgeons (AAOS), American College of Physicians (ACP), AMA, American Society of Anesthesiology (ASA), and Medical Group Management Association (MGMA), along with multiple other groups, showed that a typical small practice composed of 3 physicians and 2 impacted administrative staff will face a total cost impact of the ICD-10 mandate of $83,290; however, a typical medium practice, comprised of 10 providers, one full-time coder, and 6 other administrative staff (which fits administration of 10 interventional pain physicians with one or 2 practitioners and a large number of ancillary staff) faces a total cost impact of the ICD-10 mandate of $285,195. For larger practices with 100 providers, the cost impact of ICD-10 will be $2.7 million (16). What is most surprising is that as the October 1, 2014, deadline for ICD-10 compliance approaches, the results of a cost study (21) were released and the results were communicated to Secretary of HHS (22). This study shows that the cost for a small physician practice could be more than $225,000 while a typical large physician practice could expect to spend as much as $8 million on implementation. Table 1 shows estimated costs to implement the ICD-10 code set comparing 2008 estimated costs with 2014 estimated costs. The markedly higher implementation costs for ICD-10 place a crushing burden on physicians, straining vital resources needed to invest in new health care delivery models and well-developed technology that promotes care coordination with real value to patients as per the AMA president in a news release. The current cost estimates appear to be higher now due to the need for testing, and the potential for increased payment disruption. This study (21) also notes specialty practices will see the highest ICD-10 implementation cost, especially in productivity losses and payment disruptions because of their high revenues and per-hour rates, this includes interventional pain management.

CMS also has announced that cash flow disruptions may last for 6 months or longer (18-20). CMS also has acknowledged that they will not be performing any impact assessments. In addition, there will be ongoing costs of implementation and compliance with unexpected costs of audits, defense, and fines. The ICD-10 implementation guide for small and medium practices released by CMS (20,23) provided a document for small and medium practices which shows step by step from planning phase, communication and awareness phase, assessment phase, implementation phase, and transition phase to final implementation. However, they failed to describe either cost or cash flow issues or numerous major disadvantages of the proposed system, all these with large cuts for interventional pain management physicians and a questionable SGR fix for the future (11-13).

The benefits of ICD-10 have been touted by CMS and various other organizations, including IT professionals and hospitals on the basis of the idea that ICD-10 will improve operational processes across the health care industry, update the terminology and disease classification, increase flexibility for future updates, enhance coding accuracy, support refined reimbursement models, streamline payment operations, provide more detailed data, provide opportunities to develop and implement new pricing and reimbursement structures, and provide payers, program integrity contractors, and oversight agencies with opportunities for more effective detection and investigation of potential fraud or abuse and proof of intention of fraud (20,23-29). The touted potential advantages are similar to previously

Table 1. *Estimated cost to implement ICD-10 code set.*

	Typical Small Practice	Typical Medium Practice	Typical Large Practice
2008 Estimated Costs	$83,290	$285,195	$2,728,780
2014 Estimated Costs	$56,639 – $226,105	$213,364 – $824,735	$2,017,151 – $8,018,364

Source: Nachimson Advisors, LLC. The Cost of Implementing ICD-10 for Physician Practices – Updating the 2008 Nachimson Advisory Study. A report to the American Medical Association. February 12, 2014. www.ama–-assn.org/resources/doc/washington/icd-10-costs-for-physician-practices-study.pdf (21)

implemented policies like HIPAA itself. However, transition to ICD-10 could very well be convoluted, costly, and may force practitioners out of the practice of medicine (20,23-30). Consequently, the counterarguments include whether a detailed diagnosis code will be enough to satisfy the payers; the initial data after the implementation will vary widely in its accuracy due to the learning curve. In addition, treatment planning and patient outcomes are not solely dependent on the diagnosis code assigned, the detail in coding may not be available to all, and no one even knows the level of detail necessary to track public health concerns. AMA (31) provided analysis of benefits with counter arguments as shown in Table 2.

There are further issues in relation to the transition to ICD-10. In a study published in the Journal of the American Medical Informatics Association (32), it was made clear that the switch from ICD-9 to ICD-10 code sets means that health care providers and insurers will have to change out about 14,000 codes for about 69,000 codes. The study also showed the findings on code mapping and on cost (33).

The study found that about 60% of the ICD-9 codes translated to ICD-10 codes effectively. However, they also found that:

- 36% of the ICD-9 codes were "convoluted" with entangled and non-reciprocal mappings; and
- 1% of the ICD-9 codes had no corresponding code under ICD-10.

In addition, their analysis related to certain medical specialties found that the specialties most likely to be affected by the ICD-10 transition with convoluted codes include 60% of injury-related codes, 60% of obstetrics-related codes, 42% of infectious diseases-related codes, and 5% of hematology-related codes. Chute et al (5) also showed the lack of advantages of ICD-10 as shown in Fig. 1.

While there are numerous advisors to assist with the ICD-10 coding transition, the bottom line is that with interventional pain physicians presently experiencing draconian cuts, ICD-10 costs will be a further burden ranging from $83,000 to $800,000 or even $2 – 8 million (16,20-22). The projected disruption in payments with advice for emergency cash reserves from CMS and others which is neither available nor feasible and may amount to 3 to 6 months of practices' cash flow will certainly impact multiple practices.

ICD-10 coding will impact every segment of the health care industry including interventional pain physicians, nurses, coders, and office staff. With multiple alleged disadvantages of ICD-9 and potential advantages of ICD-10, no one is guaranteed any benefits, but there will no doubt be substantial losses and hardship. ICD-9 and ICD-10 have a similar type of hierarchy in their structures, but the ICD-10 is more complex and incorporates numerous changes from ICD-9. Overall, ICD-10 contains over 141,000 codes, a whopping 712% increase over the less than 20,000 codes in ICD-9, creating enormous complexities, confusion, and expense

Table 2. *Analysis of advantages and disadvantages of the implementation of ICD-10.*

Expected Benefit	Counterargument
Fewer pended or denied claims, and subsequent re-work, due to more detailed information about the diagnosis in the code.	The question is whether a detailed diagnosis code will be enough to satisfy the payers or will they continue to pend or deny claims and require physicians to submit additional information to support the more detailed diagnosis code.
Improved quality of data due to more specificity in the diagnosis code about the diagnosis.	The initial data after the implementation will vary widely in its accuracy due to the learning curve of working with new codes. It could take years before the industry is fully knowledgeable about the code set and coding well enough to see an improvement in the quality of data.
Better ability to develop treatment plans and track patient outcomes through disease management functions.	Treatment planning and patient outcomes are not solely dependent on the diagnosis code assigned to a particular patient visit. Treatment planning is done by the providers based on their clinical assessments and interactions with the patient, which occurs prior to and separate from the coding of an encounter.
Increased efficiency in exchanging clinical information about patients.	While the diagnosis code may provide more detail about a patient's clinical diagnosis, the ability to exchange that code requires electronic data interchange and interoperability among the various entities attempting to send and receive that information.
Better ability to conduct public health surveillance.	The question is what level of detail is necessary to track public health concerns and whether the greater level of detail in ICD-10 is necessary to accomplish the work that is already being done today.

(3,4,34). Multiple published statistics illustrate there are approximately 119 instances where a single ICD-9 code can map to more than 100 distinct ICD-10 codes, and there are 255 instances where a single ICD-9 code can map to more than 50 ICD-10 codes. To add to the confusion, there are almost 4,000 instances in the mapping for the diseases where a single ICD-10 code can map to more than one ICD-9 code (3,34). As one would expect, there is no one to one relationship between ICD-9 and ICD-10. Further, physicians may have to use combinations of ICD-9 and ICD-10. The relationship, as shown in the previous manuscript (3), is complex. The relationship was illustrated in 6 tables in our previous manuscript (3) showing significant confusion that changes the meaning of what we have previously been accustomed to. To reiterate, Table 3 illustrates the interrelationship of ICD-9 to ICD-10 codes for spondylosis codes which are used to describe facet joint arthropathy. The most commonly used codes in interventional pain management are 721.0 to describe cervical facet joint arthropathy,

Table 3. *Illustration of the interrelationship of ICD-9 to ICD-10 codes for spondylosis used for facet joint arthropathy.*

ICD-9 CODE	ICD-9 DESCRIPTION	ICD-10-CM	ICD-10 DESCRIPTION
721.0	Cervical spondylosis without myelopathy or cervical facet joint arthropathy	M47.21	Other spondylosis with radiculopathy, occipito-atlanto-axial region
		M47.22	Other spondylosis with radiculopathy, cervical region
		M47.23	Other spondylosis with radiculopathy, cervicothoracic region
		M47.811	Spondylosis without myelopathy or radiculopathy, occipito-atlanto-axial region
		M47.812	Spondylosis without myelopathy or radiculopathy, cervical region
		M47.813	Spondylosis without myelopathy or radiculopathy, cervicothoracic region
		M47.891	Other spondylosis, occipital-atlanto-axial region
		M47.892	Other spondylosis, cervical region
		M47.893	Other spondylosis, cervicothoracic region
721.2	Thoracic spondylosis without myelopathy or thoracic facet joint arthropathy	M47.23	Other spondylosis with radiculopathy, cervicothoracic region
		M47.24	Other spondylosis with radiculopathy, thoracic region
		M47.25	Other spondylosis with radiculopathy, thoracolumbar region
		M47.813	Spondylosis without myelopathy or radiculopathy, cervicothoracic region
		M47.814	Spondylosis without myelopathy or radiculopathy, thoracic region
		M47.815	Spondylosis without myelopathy or radiculopathy, thoracolumbar region
		M47.893	Other spondylosis, cervicothoracic region
		M47.894	Other spondylosis, thoracic region
		M47.895	Other spondylosis, thoracolumbar region
721.3	Lumbosacral spondylosis without myelopathy or lumbar facet joint arthropathy	M47.25	Other spondylosis with radiculopathy, thoracolumbar region
		M47.26	Other spondylosis with radiculopathy, lumbar region
		M47.27	Other spondylosis with radiculopathy, lumbosacral region
		M47.28	Other spondylosis with radiculopathy, sacral and sacrococcygeal region
		M47.815	Spondylosis without myelopathy or radiculopathy, thoracolumbar region
		M47.816	Spondylosis without myelopathy or radiculopathy, thoracolumbar region
		M47.817	Spondylosis without myelopathy or radiculopathy, lumbar region
		M47.818	Spondylosis without myelopathy or radiculopathy, lumbosacral region
		M47.895	Other spondylosis, thoracolumbar region
		M47.896	Spondylosis without myelopathy or radiculopathy, sacral and sacrococcygeal region
		M47.897	Other spondylosis, lumbosacral region
		M47.898	Other spondylosis, sacral and sacrococcygeal region

721.2 describing thoracic facet joint arthropathy, and 721.3 describing lumbar facet joint arthropathy. However, in ICD-10, these codes are variable, complex, and confusing. For example, 721.0 describing cervical facet joint arthropathy changes to 9 separate ICD-10 codes. The first 3 codes are in a category of M47.21 to M47.23 and include codes with radiculopathy either in the occipitoatlantoaxial region, cervical region, or cervical thoracic region describing them as other spondylosis. In contrast, the next 3 codes, M47.811 to 47.813, describe spondylosis without myelopathy or radiculopathy in the occipitoatlantoaxial region, spondylosis without myelopathy or radiculopathy, cervical region, and spondylosis without myelopathy or radiculopathy, cervicothoracic region. These 3 codes provide the same description as 721.0 with specificity for upper, middle, and lower cervical regions. In addition, the remaining 3 codes in a different category from M47.891 to M47.893 describe other spondylosis, occipitoatlantoaxial region, "other" spondylosis, cervical region, and other spondylosis, cervicothoracic region. Thus, interventional pain management specialists are forced into a decision, either to use the middle set of 3 codes starting with M47.811 to M47.813 or M47.891 to M47.893. There is no guidance provided for such change and it will certainly lead to increases in denials, confusion, and ultimately cost.

Further, 721.3 is complicated, but 721.2 is easier. Code 721.2 used to describe thoracic facet joint arthropathy also has a total of 9 codes which belong to 3 different categories: M47.23 to M47.25, M47.813 to M47.815, changing to M47.893 to M47.895. The first 3 codes M47.23 to M47.25 describe the cervicothoracic region, thoracic region, and thoracolumbar region with radiculopathy. However, M47.813 to M47.815 describe spondylosis without myelopathy or radiculopathy either in the cervicothoracic region, thoracic region, or thoracolumbar region. Finally, the present codes may be replaced by M47.893 to M47.895, which describe other spondylosis in the cervicothoracic region, thoracic region, and thoracolumbar region. Lumbosacral spondylosis without myelopathy, reported now by 721.3, also follows a similar categorization with multiple codes, with significant confusion and no clarification.

The next example is in relation to intervertebral disc disease and disc herniation. These codes are simpler compared to the facet joint arthropathy; however, one will still have to utilize multiple codes to describe degenerative disc disease or disc herniation in a single region. As illustrated in Table 4, degenerative disc disease in multiple regions also follows the same philosophy with 3 codes in the cervical spine, 2 in the thoracic spine, and 2 in the lumbosacral spine. Unfortunately,

Table 4. *Illustration of displacement of intervertebral disc and degenerative disc disease in various regions with ICD-9-CM codes and ICD-10 conversions.*

ICD-9 CODE	ICD-9 DESCRIPTION	ICD-10-CM	ICD-10 DESCRIPTION
722.0	Displacement of cervical intervertebral disc without myelopathy	M50.20	Other cervical disc displacement, unspecified cervical region
		M50.21	Other cervical disc displacement, occipito-atlanto-axial region
		M50.22	Other cervical disc displacement, mid-cervical region
		M50.23	Other cervical disc displacement, cervicothoracic region
722.10	Displacement of lumbar intervertebral disc without myelopathy	M51.26	Other intervertebral disc displacement, lumbar region
		M51.27	Other intervertebral disc displacement, lumbosacral region
722.11	Displacement of thoracic intervertebral disc without myelopathy	M51.24	Other intervertebral disc displacement, thoracic region
		M51.25	Other intervertebral disc displacement, thoracolumbar region
722.4	Degeneration of cervical intervertebral disc	M50.30	Other cervical disc degeneration, unspecified cervical region
		M50.31	Other cervical disc degeneration, occipito-atlanto-axial region
		M50.32	Other cervical disc degeneration, mid-cervical region
		M50.33	Other cervical disc degeneration, cervicothoracic region
722.51	Degeneration of thoracolumbar intervertebral disc	M51.34	Other intervertebral disc degeneration, thoracic region
		M51.35	Other intervertebral disc degeneration, thoracolumbar region
722.52	Degeneration of lumbar or lumbosacral intervertebral disc	M51.36	Other intervertebral disc degeneration, lumbar region
		M51.37	Other intervertebral disc degeneration, lumbosacral region

Table 5. *Illustration of how one ICD-10 code can also relate to many ICD-9 codes.*

ICD10	ICD-10 Description	ICD9	ICD-9 Description
M96.1	Postlaminectomy syndrome, not elsewhere classified	722.80	Postlaminectomy syndrome of unspecified region
		722.81	Postlaminectomy syndrome, cervical region
		722.82	Postlaminectomy syndrome, thoracic region
		722.83	Postlaminectomy syndrome, lumbar region
Q7649	Other congenital malformations of spine, not associated with scoliosis	75613	Absence of vertebra congenital
		75614	Hemivertebra
		75615	Fusion of spine (vertebra) congenital
		75619	Other congenital anomalies of spine
Q798	Other congenital malformations of musculoskeletal system	75681	Congenital absence of muscle and tendon
		75682	Accessory muscle
		75689	Other specified congenital anomalies of muscle tendon fascia and connective tissue
		7569	Other and unspecified congenital anomalies of musculoskeletal system

disc displacement codes do not differentiate variations with disc bulging, disc protrusion, disc extrusion, and disc herniation, major advantages of specificity or granularity of ICD-10 as promoted.

In addition to the above changes, neither simplicity nor specificity appear to be part of the future ICD-10. Further, codes for spinal stenosis fall into numerous categories, creating significant confusion. It was rather surprising to note that lumbar spinal stenosis with neurogenic claudication in the lumbar region (ICD 724.03), has only one ICD-10 code, a component of the 724.02 code groups. This essentially removes the specificity which previously existed.

As shown in Table 5, post lumbar laminectomy or post surgery syndrome is extremely confusing. The ICD descriptions at present describe post lumbar laminectomy syndrome with 4 codes (722.80 to 722.83), describing an unspecified region (ICD 722.80), post laminectomy syndrome in the cervical region (722.81), post laminectomy syndrome in the thoracic region (722.82), and post laminectomy in the lumbar region (722.83). This is replaced by a single code M96.1 post laminectomy syndrome, not elsewhere classified. While this may be simplified for naïve spectators, this causes significant confusion and lessens the value of diagnosis and specificity and granularity.

Even though, some are excited about ICD and many are worried, it appears that an indefinite delay for an impact assessment is mandatory prior to implementing it. Beyond the arguments of the proponents and opponents for academic purposes, practical considerations and financial implications on practices, which will ultimately result in reduced access to patient care, are the most essential aspects (35).

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Conflict of Interest

Dr. Falco is a consultant for St. Jude Medical Inc. and Joimax Inc. Dr. Kaye is a speaker for Depomed, Inc.

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