

APPLICATIONS AND TECHNOLOGIES COLLABORATIVE

ICD-10 Hospital Impacts

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Table of Contents	Overview.....	3
	Coding Challenges.....	3
	Coder Training	3
	Productivity	6
	Resourcing	6
	Coding Quality.....	6
	Coding Tools	7
	Documentation Requirements	7
	Documentation Methods and Strategies.....	7
	Monitoring and Ongoing Documentation Improvement.....	8
	Education	8
	Physicians.....	9
	Nurses.....	9
	Executives	9
	Directors and Managers.....	9
	Financial Implications	10
	Project Budgeting.....	10
	Billing.....	10
	Payment.....	10
	Data Trading Partners.....	11
	Payers	11
	Other Data Trading Partners.....	11
	Vendors	11
	Compliance and Accountability	12
	Regulatory Reporting.....	12
	Avoidable Costs	12
	Fraud, Waste, and Abuse.....	13
	Accreditation and Audits.....	13
	Contracting	13
	Analytics and Reporting	13
	Leveraging ICD-10.....	14
	Summary	15
	Action Items.....	15
	Acronym Key	15



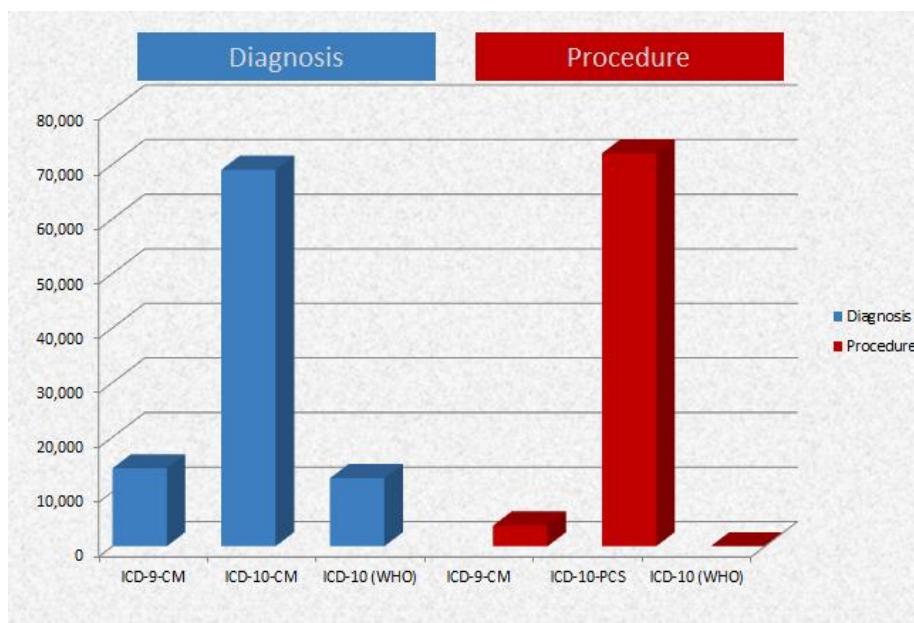
Overview The mandated¹ transition from ICD-9 to ICD-10 as of October 1, 2013, creates challenges for all health care entities, although the nature of the impacts varies by entity type. A research note² previously published by The Advisory Board Company identified impacts primarily associated with physician entities. This research note, however, focuses primarily on effects related to the hospital environment. Many of the implications for physicians are similar to those for hospitals. Please note that this report builds on two recently published Advisory Board notes: the aforementioned “ICD-10 Physician Impacts” as well as “ICD-10: A Primer.”³

Coding Challenges As prior Advisory Board research notes have outlined, the challenges in ICD-10 coding are significant. Changes in the volume of codes, definitions, coding rules, and code structure have created a new environment for coding that will require significant training and quality management during the transition period.

Coder Training

ICD-10-CM

Much of the long-standing knowledge and experience that coding professionals have applies to most of the ICD-10-CM (diagnostic code) environment. Though the volume of codes has expanded from approximately 14,000 codes to over 69,000 codes, the documentation in the form of index files and tabular documentation structure and conventions is quite similar. The graph below illustrates the magnitude of these changes. Notice that the ICD-10 codes defined by the World Health Organization include only 12,500 codes. Also note that the World Health Organization does not support ICD-10 institutional procedure codes.



¹ Federal Register - <http://edocket.access.gpo.gov/2009/pdf/E9-743.pdf>

² Advisory Board Research Report: “ICD-10 Physician Impacts” (March 2011).

³ Advisory Board Research Report: “ICD-10: A Primer” (March 2011).



Terminology and coding rules for ICD-10, with a few exceptions, are consistent with ICD-9. Though there are many new codes, most of them are related to recurring patterns. For example, approximately 36 percent of the codes are different only in that they distinguish right versus left. There are numerous other recurring patterns that result in the repetition of many of the same patterns of medical concepts.

There are, however, some specific changes that may prove challenging to coders:

- Some of the definition and rule changes do result in significantly different models for coding common conditions.

Example: The definition of “subsequent” in relation to myocardial infarction is different in ICD-10 than in ICD-9. In ICD-10 “subsequent” refers to another myocardial infarction within four weeks of a previous acute myocardial infarction. In ICD-9, “subsequent” refers to a subsequent “episode of care” for further treatment of a myocardial infarction that has been initially treated but is less than eight weeks old. Translation between these concepts may be challenging for coders and those cross-walking data.

- The use of combination codes (multiple medical concepts) results in challenges in finding the right code in the right tabular section.

Example: The table below illustrates conditions that may be found in multiple tabular categories. In this example, there are 14 codes in the “Hypertensive Disease” category of the tabular index, but there are 115 codes related to the concept of “Hypertension” in 14 other categories.

Condition	Tabular Category	Number of codes
Hypertension	Hypertensive Disease	14
	<i>Other Categories (14)</i>	<i>115</i>
Pneumonia	Influenza and Pneumonia	38
	<i>Other Categories (18)</i>	<i>42</i>
Genitourinary Disorders	Diseases of the Genitourinary System	587
	<i>Other Categories (14)</i>	<i>535</i>

- A number of other changes to rules and definitions, though infrequent, will have a substantial impact on coding and the education required related to these changes.

ICD-10-PCS

Training and coding practices under ICD-10-PCS, the inpatient procedure codes, will be very different than ICD-9. Beyond the increase in codes from approximately 4,000 ICD-9 codes today to approximately 72,000 ICD-10 codes, there are major changes in structure, coding rules, terminology definitions, and documentation interpretation. These changes will be foreign to coding professionals who have not been trained in ICD-10 and will have little if any relationship to current ICD-9 procedural coding practices.



A list of some of these changes is given below; it provides a view of some of the challenges in education and coding practice for coders.

- The architecture of the ICD-10 codes is such that each character has meaning. Building a code based on each character is a very new coding process. Coders must look up allowable values for the 4th through 7th characters in hundreds of tables based on the first 3 characters.
- All seven characters are required for every code and the level of detail is much greater in ICD-10 than it was in ICD-9.

Example: There is currently only one ICD-9 code (8401) for “amputation of the finger” whereas there are 32 ICD-10-PCS codes for amputation of the finger that specify which finger, which level, and which surgical approach. For this and most other PCS codes there is not a generic code at the level of “amputation of the finger,” and much greater detail about the nature and anatomy of the procedure is needed for any code. This becomes a very big issue for translation of procedure codes from ICD-9 to ICD-10 if the only information that you have is the ICD-9 code. In this case if all one has is the original ICD-9 code, the coder would be required to pick a finger, pick a level, and pick an approach arbitrarily. It also requires a different level of detail in the surgical report documentation that the coder will need for documentation support.

- The biggest challenge with the ICD-10-PCS codes is related to the change in terminology. The PCS codes have very explicit terms for different character values. There are 31 root operations represented by the third character in the “Medical Surgical” section and each root operation is explicitly defined. Every surgical procedure must fit into one of these root operations. The following table illustrates some of changes in terminology associated with some of these root operations.

ICD-9 Term	ICD-10 Term
...centesis	Drainage
Amputation	Detachment
Anastomosis	Bypass
Arthrodesis	Fusion
Arthroscopy, Cystoscopy...	Inspection... endoscopic approach
Aspiration	Drainage
Bunionectomy	Resection of metatarsal
Caldwell Luc procedure	Excision, resection right or left maxillary sinus
Cesarean section	Extraction of products of conception
Closed Reduction	Reposition (also repair) of (right or left) , (percutaneous, endoscopic, external)
Colostomy	Bypass (colon) to skin
Debridement	Excision, Extraction, Irrigation, Extirpation
Incision	[No comparable ICD-10-PCS term]
Radical mastectomy	Resection (right, left or bilateral)
Subtotal mastectomy	Excision
Tonsillectomy	Resection of tonsils
Tracheotomy	Bypass

Example: A surgeon dictates an operative report stating that he removed the right upper lobe of the lung. In this case the coder must know that the “right upper



lobe” is a defined body part in PCS and that the proper term in PCS is not “removal” but is referred to as a “resection” since this involved the “cutting out or off, without replacement, all of a body part.” If the surgeon had reported a “partial lobectomy” then the coder would have code to the term “excision” rather than “resection.” Most coders are trained to code only the explicit documentation of the physician, but now they must interpret this documentation based on the PCS definition of terms and their review of the clinical record.

- PCS also requires an interpretation of anatomy for proper coding. For example, if the documented vessel or nerve is not listed as a body part, the coder is to find the next proximal branch for coding purposes

Example: A physician dictates an operative report that describes a procedure on the medial geniculate artery of the knee. The coder finds that the geniculate Artery is not a defined body part and must search for the proximal branch of the geniculate Artery which is the popliteal artery. The coder then uses the popliteal artery as the body part in constructing the proper PCS Code.

This type of interpretation and the need for anatomical knowledge is different than the general experience of coders and will require a different level of training.

Productivity

Productivity will almost certainly be significantly impacted by this transition. One Canadian Hospital’s experience of implementing ICD-10¹ noted a 50 percent drop in coder productivity for the first year with an ongoing loss of productivity for well over a year after implementation. In addition, the Canadian version of ICD-10 is not as complex as the United States ICD-10-CM version and the ICD-10-PCS codes were not implemented in Canada.

Resourcing

AHIMA and other coding organizations have done a great job in providing advance training to coding trainers and promoting ICD-10 expertise ahead of the implementation. There are, however, ongoing concerns about the availability of coding professionals in light of the potential impacts to productivity. A number of coding professionals, looking at the complexity and dramatic change of ICD-10, have stated they will retire prior to implementation. Outsourced coding with high-quality ICD-10 capabilities may be at a premium and difficult to acquire. Organizations may also need to consider special resources trained and dedicated solely to PCS codes.

Coding Quality

It is highly likely that there will be a significant impact to coding quality given the nature of these changes and the new level of documentation requirements. Inconsistent and inaccurate coding will impact DRG grouping as well as other

¹ Implementation of ICD-10: Experiences and lessons learned from a Canadian Hospital, AHIMA, http://library.ahima.org/xpedio/groups/public/documents/ahima/bok3_005558.hcsp?dDocName=bok3



payment models. Poor documentation and coding will increase the business risks related to auditing, including investigations related to fraud, waste, and abuse.

Coding Tools

As noted above, dealing with the volume and complexity of ICD-10 codes will generally require the use of some form of coding tool. A recent Advisory Board research report¹ provides further insights into the considerations for evaluating some of these tools.

Documentation Requirements

Documentation is the basis for all coding. The requirement for an increased level of documentation of medical concepts to support ICD-10 means that clinical documentation initiatives need to fully consider the nature of these new concepts.

Documentation Methods and Strategies

ICD-10 calls for methods and strategies for documentation that ensure success in this new environment.

- Strategies for physician engagement as outlined in the Advisory Board research report "ICD-10 Physician Impacts"² define key considerations for engaging providers to align efforts and minimize the documentation burden to those key elements that are not only needed for coding, but also important as part of best practices to support good patient care.
- Clinical documentation initiatives will need to look at those areas where new documentation is required or where new methods of interpreting existing documentation will be needed as illustrated above in the discussion of PCS code changes in terminology.
- The key elements for documentation will need to be defined for different clinical domains.
- **Example:** The following tables illustrate some of the requirements for documentation related to codes that define "fractures of the radius." The items in blue (Italics) are those concepts included within both ICD-9 and ICD-10 codes in this area, while those in red (Bold) are concepts supported only in ICD-10 codes related to "fractures of the radius."

¹ Advisory Board Research Report: "ICD-10 Vendor Evaluation" (January 2011).

² Advisory Board Research Report: "ICD-10 Physician Impacts" (March 2011).



Fracture Type	Healing	Localization	Encounter	Displacement	Classification
<i>Open</i>	Normal	<i>Shaft</i>	Initial	Displaced	Salter Harris I
<i>Closed</i>	Delayed	<i>Lower end</i>	Subsequent	Non-displaced	Salter Harris II
Physeal fracture	Nonunion	<i>Upper end</i>	Sequelae		Salter Harris III
<i>Pathological</i>	Malunion	<i>Head</i>			Salter Harris IV
Neoplastic disease		<i>Neck</i>			Gustilo type I or II
<i>Torus</i>		Styloid process			Gustilo type IIIA, IIIB, or IIIC
Greenstick					
Stress					
Orthopedic implant					
Bent Bone					

Laterality	Joint Involvement	Fracture Pattern	Named Fractures	Other Concepts
Left	Intraarticular	Comminuted	<i>Colles'</i>	<i>Fracture</i>
Right	Extraarticular	Oblique	Galleazzi's	<i>Radius</i>
Bilateral		Segmental	Smith's	<i>Bone</i>
		Spiral	Barton's	<i>Trauma</i>
		Transverse		<i>Musculoskeletal System</i>
				<i>Upper extremity</i>
				<i>Forearm</i>
				<i>Ulna</i>

Focusing on the finite set of concepts for documentation in each clinical domain will be important to guide documentation to support accurate coding.

Monitoring and Ongoing Documentation Improvement

The changes in documentation requirements will be significant and there may be challenges in adoption of these new requirements. Internal audits of coding quality should similarly audit documentation quality. Ongoing feedback will be needed to provide awareness of documentation deficiencies and the impacts to hospitals and physicians. This follow-up should focus on areas of high priority and target sources of documentation that are problem areas.

Education Education about ICD-10 must extend beyond training just coding professionals. ICD-10 is an enterprise-wide change with far-reaching impact for stakeholders across the health care system, either directly or indirectly. All stakeholders should have a better familiarity with ICD-10 than ICD-9 since these codes get much closer to the clinical domain and will likely have much greater importance in business in an accountable care environment. Staff involved in quality and revenue cycle measurement and



management activities will also require education focused on the nature of this transition and the impact on their areas of responsibility.

Physicians

Physicians should not be trained to be coders, but rather to understand the nature of ICD-10, its business impacts, its information impacts, and the role of documentation in supporting ICD-10 coding. Among the advantages of ICD-10 that physicians will appreciate will be in the area of metrics that define the value of physician services and the nature of the conditions physicians manage. In general, physicians will be more receptive to education from their peers. Finding a physician champion in ICD-10 and supporting his or her education as an ICD-10 spokesman will be a good investment moving forward. Clinical documentation should be the primary focus of training for physicians. Although there are increased documentation requirements to support ICD-10 coding, these requirements in virtually all instances are needed to support good patient care independent of the type of coding.

Nurses

ICD-10 training for nurses should also be primarily focused on documentation as part of care delivery as well as on supporting physician queries for more information. Nurses in general have a much closer relationship with physicians in requesting information to support care than others who are more peripheral to direct patient care. Nursing plays a substantial role in patient documentation in a variety of clinical domains such as the area of burns, decubitus ulcers, obstetrics, and a variety of other clinical domains are areas. Nursing informaticists in particular should be champions of ICD-10 and support documentation efforts.

Executives

Executives responsible for all business, clinical, and IT functions within the organization need to understand the business impacts of ICD-10 and the challenges their organizations face in addressing this implementation. Education of executives should focus on the following key areas:

- The nature of the ICD-10 transition and how it impacts their business functions
- Resource implications and costs for successful transition
- The role of leadership and sponsorship to support the transition from the top down
- Business risks from the standpoint of compliance and revenue
- Opportunities to improve the business road map by leveraging the advantages of ICD-10

Directors and Managers

Implementation of ICD-10 will require the support of directors and managers across the enterprise. They will need to have a full understanding of the importance of this



transition to the organization and their role in its success. There will be an impact on operations and potential disruptions in some business processes, and planning will need to consider these challenges. The importance of preparation and cross-department collaboration will need to be emphasized, and governance structures will be needed to cross traditional functional silos to accomplish successful implementation tasks.

Financial Implications

Financial implications of ICD-10 are complex and extensive. This note will just touch on some key points for consideration; a full discussion of the impacts on budgeting and the revenue, as well as the entire revenue cycle, is beyond the scope of this paper.

Project Budgeting

The cost of implementation has been the subject of several studies^{1,2} that vary significantly in projections. The Hay Group analysis reported cost estimates ranging from \$500,000 to \$2,000,000 for hospitals at the 400-bed level. In general, the cost estimates have been significant but most of these studies were done prior to deeper assessments of business implications and the tasks required to address transition issues. HIMSS³ has recently provided a tool that may offer some help in approaching implementation budgeting for ICD-10 as a starting point. The tool is primarily focused on anticipating new costs and does not factor in the cost for existing resource requirements. As with all budgeting tools, this one is only as good as its assumptions, however it may offer considerable help for those looking at just the transition cost impact.

Billing

The billing process may be affected in several areas, including

- Billing delays may result from coding bottlenecks related to coder productivity and additional physician queries.
- Reliability and accuracy of DRG grouping may be impacted due to coding challenges.
- Changes in the charge master for procedures and related diagnosis codes will need to be addressed
- ICD-9 diagnosis or procedure logic that may be built into billing edits must be redefined
- Reporting related to the billing process will may need to be redefined

¹ *Replacing ICD-9-CM with ICD-10-CM and ICD-10-PCS: Challenges, Estimated Costs and Potential Benefits*, Robert E. Nolan Company, October 2003.

² Thomas Wildsmith, "Examining the Cost of Implementing ICD-10," The Hay Group, October 2006.

³ http://www.himss.org/ASP/topics_FocusDynamic.asp?faid=220



Payment

Payment may be affected in a number of ways

- Case rates and other payment methodologies that are related to ICD codes may be substantially different
- Payer challenges with policy and payment rule conversion to support ICD-10 within their own systems may result in unanticipated denials or delays in payment
- Payment predictability will be compromised because of an evolving coding environment and the lack of historical basis for trends and comparisons
- Revenue cycle reporting and analysis will need to be redesigned in areas that rely on ICD-9 codes for reporting today
- Case mix adjustment will be substantially different under ICD-10 because of the changes in the definition of severity, comorbidities, complications, and other parameters of measures of the disease burden

Data Trading Payers Partners

New requirements for data specification and operating rules for data interchange are continuing to evolve beyond the 5010 update to the current HIPAA transactions. Testing of transactions with payers and clearinghouses will be critical to avoid revenue cycle disruptions. Testing should go well beyond the “vanilla” transaction testing and should include a set of well-defined business scenarios that are based on high-dollar, high-volume, and high-business-risk parameters as determined by research and analysis of historical data models, as well as analysis of areas of complexity and risk within ICD-10 codes. This type of true end-to-end testing based on scenarios that start at the point of patient contact and continue through hospital business functions and payer processing and payment will be critically important in this complex transition.

Other Data Trading Partners

Each organization should examine its data sharing touch points related to research and patient registries, external contracting entities, internal and external care delivery partners, and other organizations where data sharing around patient conditions and services is important. Even if the data is not specifically in ICD-coded format directly, it may be indirectly related to ICD-based codes upstream or downstream in the information flow.

Vendors Vendor management will be a major challenge in moving through this transition. Most organizations depend on vendor software or services for a number of critical business functions that rely on ICD-10 codes. Failure of these vendors can translate into critical failure points for an organization. A prior Advisory Board research note¹ focused on the evaluation of ICD-10 tools and coding vendors, but did not go into depth around evaluation of other software and service vendors in relationship to

¹ Advisory Board Research Report: “ICD-10 Vendor Evaluation” (January 2011).



their ICD-10 readiness. The process of vendor evaluation and management is complex and beyond the scope of this document, but some key questions to consider in approaching this area include:

- Who are your software vendors that will have some touch point in the area of ICD-10?
- Who are your service or outsource business process vendors who will have some touch point in the area of ICD-10?
- How do existing contracts position you around mandated data requirements and remediation for performance issues?
- Will they be ready? More importantly, what does “ready” mean?
- How does vendor readiness for testing factor into your project plan and in particular into your testing cycle?
- How will you monitor vendor progress?
- What is “Plan B” if there is a vendor failure?
- Are some vendors planning on sunseting existing offerings in view of the ICD-10 transition?
- Are vendors truly remediating their systems or relying on some internal crosswalk?

These and other questions need to be addressed as part of a comprehensive vendor management program.

Compliance & Accountability

The ICD-10 transition is part of the HIPAA law and requires all covered entities (payers, providers, and clearinghouses) to use ICD-10 as the standard for submitting information about patients’ conditions and the inpatient procedures that might be used to treat those conditions. The law specifically limits payment for claims with dates of service or dates of discharge on or after October 1, 2013, if those claims do not comply with the ICD-10 standard. Noncompliance translates into lack of payment for providers and substantial penalties for payers.

Regulatory Reporting

A variety of types of required state and national government reports are a part of doing business for most health care entities. The type of reporting required varies by region, but in many cases it involves reporting based on ICD-9 codes. Requirements will change under ICD-10 and will require a redesign of data extracts or other reporting formats. For reporting of data that crosses the transition period, there will be substantial changes in metrics that are more related to coding changes than performance changes. The interpretation of trends and other comparisons will need to factor in these coding definitional changes in the analysis of historical data that crosses the October 1, 2013, time frame.

Avoidable Costs



In a financially constrained health care environment the focus on avoidable costs is increasing. These specific areas of focus, as well as the intensity on each, changes over time, but some of the main topics of scrutiny are listed below.

- Potentially avoidable admissions (and re-admissions)
- Hospital-acquired conditions not present on admission
- Services that are “not medically necessary”
- Never events
- Patient safety
- Notifications of non-coverage

ICD-10 codes—with their increased level of clinical detail and their focus on parameters of risk, severity, complications, comorbidity, causation, sequelae, and other key parameters of patient conditions—will play a big part in addressing “avoidable costs” (i.e., “unrealized revenue”) in the future.

Fraud, Waste, and Abuse

There is little doubt that the focus on fraud, waste, and abuse will increase in the coming years. CMS, in its report to congress, has requested an appropriation of double the 2009 funding for systems designed to detect fraud, waste, and abuse. In its report to the appropriations committee, CMS emphasized the critical role of ICD-10 in detecting fraud, waste, and abuse. While fraud is generally more legally defined, the determination of waste and abuse less clear. A strong understanding of where fraud, waste, and abuse activities fit into documentation and coding is critical to limit risk in this area under ICD-10, especially in view of the coding challenges mentioned previously.

Accreditation and Audits

Beyond area of accountability noted above, accreditation and a variety of contractual and regulatory audits will be impacted by ICD-10 in a number of areas. A thorough inventory of all touch points and impacts will be important to successful outcomes.

Contracting Contracts may include references to conditions or procedures defined by ICD-10. The nature and scope of these contracts may change simply because the “intent” of the contract is defined differently for ICD-10 than it was in ICD-9. These contracts may represent upstream agreements with payers, partnership agreements with other entities, or downstream agreements with vendors. In any case, contracts will need to be examined for impact and new contracts may be needed or existing contracts may need to be re-negotiated in light of the redefinitions.

Analytics & Reporting The area of analytics and reporting is very complex both during the transition period and beyond as organizations begin leveraging more detailed data in an accountable care or at least more financially constrained environment. An in-depth discussion of



ICD-10 impacts to analytics and reporting is beyond the scope of this paper, but some key questions to consider when evaluating the ICD-10 impact on reporting and analysis are listed below.

- At what point do you convert from ICD-9 to ICD-10 vs. ICD-10 to ICD-9 for longitudinal analysis?
- How does cross-walking affect reporting integrity?
- How is aggregation (categorization or grouping) of data affected by the transition?
- How do you get to the medical intent of groups of codes in ICD-10 as compared to ICD-9?
- How comparable is the data across a transition period?
- How will the analysis of severity, complication, and comorbidities differ between ICD-9 and ICD-10, and during the transition?
- Will quality or efficiency reporting drive “pay for performance” initiatives and how will that change?
- Will longitudinal comparisons of performance through the transition period be viable?
- To what degree will data quality be affected by coder training and the learning period?
- How will changes in terminology impact analysis?

Leveraging ICD-10 There are distinct advantages of ICD-10 that lead to potentially better information.

- Greater detail
- Enhanced categorization models
- Greater severity and risk definition
- Greater precision of definition
- Greater forward flexibility
- Greater ability to integrate clinical information

Actively leveraging these advantages can lead to better business results.

- Better compliance
- More appropriate contracting
- More appropriate payment
- Better risk prediction
- Better fraud, waste, and abuse detection
- Enhanced network management
- More accurate understanding of population health
- An opportunity to differentiate from less prepared competitors



These advantages do not occur without effort, however. Leveraging the potential of ICD-10 requires strategic and tactical planning and execution that is more complex and resource intensive than the industry has seen in decades. The business risk of poor execution is substantial, but the potential benefits are just as substantial. This is not a transition that can be relegated to HIM or IT departments. This requires top-down leadership and support to ensure enterprise-wide success.

Summary The impact of the ICD-10 transition is substantial and affects the entire hospital enterprise. Successful implementation requires an understanding of the nature of the changes in these critical codes and the impact this change will have throughout the organization. This report is designed to provide some initial visibility to the impacts of this transition on the hospital environment. The subject areas of coding challenges, documentation, and training have received a greater focus in this report because these areas are the critical platforms to moving forward and are keystones to success. Nonetheless, the implications for finance, accountability, analytics, research, information systems, the business road map, contracting, and partnerships are all important and will require further analysis moving forward.

Action Items

- **Ensure educational awareness of the business impacts of ICD-10 across all areas of the organization.**
- **Establish the governance and project management structure** to ensure that there is enterprise-wide, executive-level support and that coordination and dependencies are factored into all implementation efforts.
- **Identify all critically impacted functional areas and define specific tasks** needed to mitigate risk and prioritize efforts.
- **Specifically define strategic and tactical approaches to addressing ICD-10 transition issues** in the areas of:
 - Coder training, productivity, resourcing quality, and software support
 - Documentation quality improvement
 - Education at the appropriate level across the organization
 - Project budgeting and revenue cycle assessment and management
 - Trading partner interactions
 - Vendor management
 - Compliance and accountability
 - Analytics and reporting
 - The business road map for leveraging
- **Use clinical scenarios based on high-dollar, high-volume, and high-risk clinical domains to virtually test your implementation plan** and identify potential gaps and weaknesses in the proposed model for remediation.

ACRONYM KEY

AHIMA

American Health Information Management Association

DRG

Diagnosis Related Group

HIM

Health Information Management

HIMSS

Healthcare Information and Management Systems Society

HIPAA

Health Insurance Portability and Accountability Act

ICD-9

International Classification of Diseases (9th Revision)

ICD-10-CM

International Classification of Diseases (10th Revision) Clinical Modification

ICD-10-PCS

International Classification of Diseases (10th Revision) Procedural Coding System

WHO

World Health Organization

