



# ICD-10

Official CMS Industry Resources for the ICD-10 Transition  
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# ICD-10 Implementation Guide for Small Hospitals



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# Introduction to ICD-10

## Introduction to ICD-10

On October 1, 2014, a key element of the data foundation of the United States' health care system will undergo a major transformation. We will transition from the decades-old Ninth Edition of the International Classification of Diseases (ICD-9) set of diagnosis and inpatient procedure codes to the Tenth Edition of those code sets—or ICD-10—the version currently used by most developed countries throughout the world. ICD-10 allows for greater specificity and detail in describing a patient's condition and diagnostic needs and in reporting inpatient procedures.

This transition will have a major impact on anyone who uses health care information that contains a diagnosis and/or inpatient procedure code, including:

- Hospitals
- Health care practitioners and institutions
- Health insurers and other third-party payers
- Electronic-transaction clearinghouses
- Hardware and software manufacturers and vendors
- Billing and practice-management service providers
- Health care administrative and oversight agencies
- Public and private health care research institutions

Planning and preparation are important to help streamline your practice's transition.

### Making the Transition to ICD-10 Is Not Optional

This transition will affect all covered entities as defined by the Health Insurance Portability and Accountability Act of 1996 (HIPAA). Covered entities are required to adopt ICD-10 codes for services provided on or after the October 1, 2014, compliance date. For inpatient claims, ICD-10 diagnosis and procedure codes are required for all stays with discharge dates on or after October 1, 2014.

Please note that the transition to ICD-10 does not directly affect provider use of the Current Procedural Terminology (CPT) and Healthcare Common Procedure Coding System (HCPCS) codes.

## Final Rule Provides Additional Year for Preparation

On September 5, 2012, following an earlier announcement that it would postpone the ICD-10 transition date in response to concerns about the complexity of implementation, the U.S. Department of Health and Human Services issued a final rule establishing a compliance date of October 1, 2014. This Implementation Guide has been revised accordingly.

The goal of postponing the transition was to provide all affected health care system stakeholders—providers, payers, and their trading partners—with an additional 12 months to accomplish the complex tasks associated with implementing ICD-10. This additional year is an opportunity (1) to assess progress against the original implementation date, (2) to “regroup” as needed and come up to speed in areas that may have been behind (3) to conduct more comprehensive “end-to-end” testing. End-to-end testing refers to testing an entire process from start to finish.

### About Version 5010

To process ICD-10 claims or other transactions electronically, providers, payers, and vendors must first implement the “Version 5010” electronic health care transaction standards mandated by HIPAA. The previous HIPAA “Version 4010/4010A1” transaction standards do not support the use of the ICD-10 codes.

All parties covered by HIPAA were required to have installed and tested Version 5010 in their practice management, billing, and processing systems by January 1, 2012. It is important to know that though 5010 transactions will be in use before October 1, 2014, covered entities are not to use the ICD-10 codes in production (outside of a testing environment) prior to that date.



## About ICD-10

### About ICD-10

The World Health Organization (WHO) publishes the International Classification of Diseases (ICD) code set, which defines diseases, signs, symptoms, abnormal findings, complaints, social circumstances, and external causes of injury or disease. The ICD-10 is copyrighted by the WHO (<http://www.who.int/whosis/icd10/index.html>). The WHO authorized a U.S. adaptation of the code set for government purposes. As agreed, all modifications to the ICD-10 must conform to WHO conventions for the ICD.

Currently, the United States uses ICD-9, originally published in 1977, and adopted by this country in 1979 as a system for classification of morbidity data and subsequently mandated as the Medicare claims standard in 1989 in the following forms:

- ICD-9-CM (Volume 1), the tabular index of diagnostic codes
- ICD-9-CM (Volume 2), the alphabetical index of diagnostic codes
- ICD-9-CM (Volume 3), institutional procedure codes used only in inpatient hospital settings

In 1990, the WHO updated its international version of the ICD-10 (Tenth Edition, Clinical Modification) code set for mortality reporting. Other countries began adopting ICD-10 in 1994, but the United States only partially adopted ICD-10 in 1999 for mortality reporting.

The National Center for Health Statistics (NCHS), the federal agency responsible for the United States' use of ICD-10 developed ICD-10-CM, a clinical modification of the classification for morbidity reporting purposes, to replace our ICD-9-CM Codes, Volumes 1 and 2. The NCHS developed ICD-10-CM following a thorough evaluation by a technical advisory panel and extensive consultation with physician groups, clinical coders, and others to ensure clinical accuracy and usefulness.

# 3

## Limitations of ICD-9

### Limitations of ICD-9

ICD-9 has several limitations that prevent complete and precise coding and billing of health conditions and treatments, including:

- The 35-year-old code set contains outdated terminology and is inconsistent with current medical practice.
- The code length and alphanumeric structure limit the number of new codes that can be created, and many ICD-9 categories are already full.
- The codes themselves lack detail to support the following:
  - Accurate anatomical descriptions
  - Differentiation of risk and severity
  - Key parameters to differentiate disease manifestations
  - Optimal claim reimbursement
  - Value-based purchasing methodologies
- The lack of detail limits the ability of payers and others to analyze information such as health care utilization, effectiveness, changes in population disease patterns, costs and outcomes, resource use and allocation, and performance measurement.
- The codes do not provide the level of detail necessary to further improve the accuracy and to streamline automated claim processing, which would result in fewer payer-physician inquiries and potential claim payment delays or inappropriate denials.

#### **ICD-9-CM limits operations, reporting, and analytics processes because it:**

- Follows a 1970s outdated medical coding system
- Lacks clinical specificity to process claims and reimbursement accurately
- Fails to capture key details of patient conditions for recording and exchanging pertinent clinical information
- Limits the characters available (3-5) to account for complexity and severity



# 4

## Benefits of ICD-10

### Benefits of ICD-10

By contrast, ICD-10 provides more specific data than ICD-9 and better reflects current medical practice. The added detail embedded within ICD-10 codes informs health care providers and health plans of patient incidence and history, which allows for more effective case management and better coordination of care. Accurate coding also reduces the volume of claims rejected due to ambiguity. The new code sets will:

- Improve operational processes across the health care industry by classifying detail within codes to accurately reflect patients' conditions and improve payment processing and reimbursements.
- Update disease classifications to be consistent with current clinical practice and medical and technological advances.
- Increase flexibility for future updates as necessary by expanding the available space for adding new codes.
- Enhance coding accuracy and specificity to classify anatomic site, cause, and severity.
- Support refined reimbursement models to provide appropriate payment for more complex conditions and procedures.
- Streamline payment operations by allowing for greater automation and fewer payer-physician inquiries, decreasing delays and inappropriate denials.
- Provide more detailed data to better analyze disease patterns and track and respond to public health outbreaks; the United States will join the rest of the developed world in using ICD-10, and will be able to compare public health trends and pandemics across borders.
- Provide opportunities to develop and implement new pricing and reimbursement structures including fee schedules and hospital and ancillary pricing scenarios based on greater diagnostic specificity.
- Provide payers, program integrity contractors, and oversight agencies with improved methods for detecting fraud.
- Provide more accurate information to support the development and implementation of important health care policies nationally and regionally.

#### **ICD-10 codes refine and improve operational capabilities and processing, including:**

- Detailed health reporting and analytics: cost, utilization, and outcomes;
- Detailed information on condition, severity, comorbidities, complications, and location;
- Expanded coding flexibility by increasing code length to seven characters; and
- Improved operational processes across the health care industry by classifying detail within codes to accurately process payments and reimbursements.

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## Comparing ICD-9 and ICD-10

### Comparing ICD-9 and ICD-10

There are several structural differences between ICD-9-CM codes and ICD-10 codes<sup>1</sup>. **Table 1** illustrates the difference between ICD-9-CM (Volumes 1 and 2) and ICD-10-CM. **Table 2** illustrates the difference between ICD-9-CM (Volume 3) and ICD-10-PCS.

**Table 1: Diagnosis Code Comparison**

CHARACTERISTIC	ICD-9-CM (VOLS. 1 & 2)	ICD-10-CM
<b>Field length</b>	3-5 characters	3-7 characters
<b>Available codes</b>	Approximately 14,000 codes	Approximately 69,000 codes
<b>Code composition (numeric or alpha)</b>	Digit 1 = alpha or numeric Digits 2-5 = numeric	Digit 1 = alpha Digit 2 = numeric Digits 3-7 = alpha or numeric
<b>Available space for new codes</b>	Limited	Flexible
<b>Overall detail embedded within codes</b>	Limited detail in many conditions	Generally more specific (Allows description of comorbidities, manifestations, etiology/causation, complications, detailed anatomical location, sequelae (aftereffects of a disease, condition, or injury such as scar formation after a burn), degree of functional impairment, biologic and chemical agents, phase/stage, lymph node involvement, lateralization and localization, procedure or implant related, age related, or joint involvement)
<b>Laterality</b>	Does not identify right versus left	Often identifies right versus left
<b>Sample code</b>	<b>81315</b> , Open fracture of head of radius	<b>S52122C</b> , Displaced fracture of head of left radius, initial encounter for open fracture type IIIA, IIIB, or IIIC

1. <http://www.ama-assn.org/ama1/pub/upload/mm/399/icd10-icd9-differences-fact-sheet.pdf>

**Table 2: Inpatient Procedure Code Comparison**

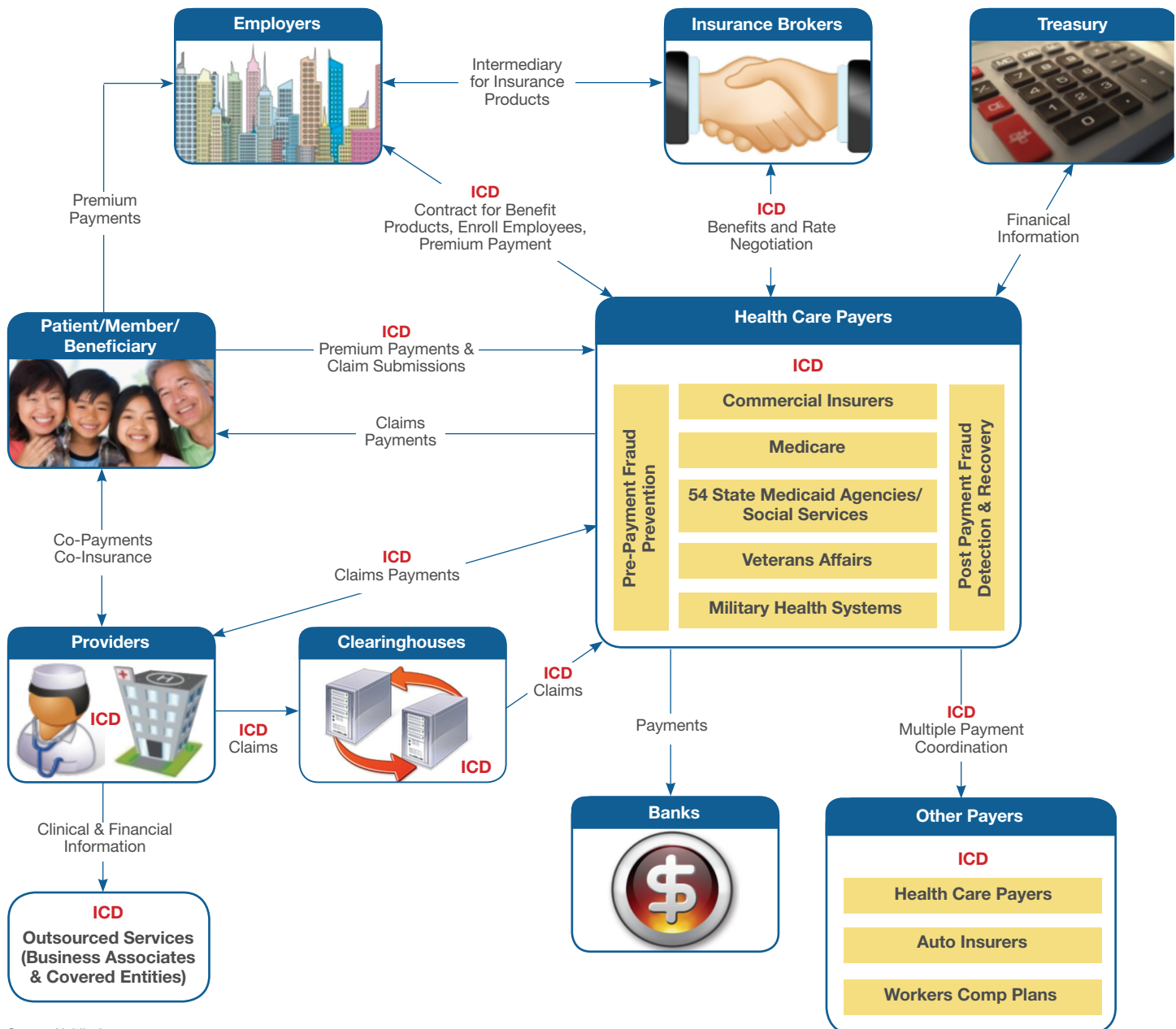
CHARACTERISTIC	ICD-9-CM (VOL. 3)	ICD-10-PCS
<b>Field length</b>	3-4 characters	7 alpha-numeric characters; all are required
<b>Available codes</b>	Approximately 4,000	Approximately 72,000
<b>Available space for new codes</b>	Limited	Flexible
<b>Procedure description</b>	Often less detailed description of the procedure	Generally more precise definitions of anatomy site, approach, device used, and other important information to better characterize the procedure
<b>Laterality</b>	Code does not identify right versus left	Code identifies right versus left
<b>Terminology for body parts</b>	Generic description	Detailed description
<b>Character position within code</b>	N/A	<p>16 PCS sections identify procedures in a variety of classifications (e.g., medical, surgical, mental health). Among these sections, there may be variations in the meaning of various character positions, though the meaning is consistent within each section. For example, in the Medical Surgical section,</p> <p>Character 1 = Name of Section*</p> <p>Character 2 = Body System*</p> <p>Character 3 = Root Operation*</p> <p>Character 4 = Body Part*</p> <p>Character 5 = Approach*</p> <p>Character 6 = Device*</p> <p>Character 7 = Qualifier*</p> <p>(*For the “Medical Surgical” codes)</p>
<b>Example code</b>	<b>3924</b> , Aorta-renal Bypass	<b>04104J3</b> , Bypass Abdominal Aorta to Right Renal Artery with Synthetic Substitute, Percutaneous Endoscopic Approach

# ICD-10 Impacts Across the Health Care Industry

## ICD-10 Impacts Across the Health Care Industry

ICD-10 affects many areas and organizations in the health care industry. **Figure 1** illustrates various impacts for hospitals, health care payers/clearinghouses, providers, patients, the treasury, and banks. Specific hospital impacts are described later in this guide.

**Figure 1: ICD-10 Impacts Across the Industry**



Source: Noblis, Inc.

**Table 3: Operational Implementation Options**

PHYSICIANS	HOSPITALS	HEALTH PLANS AND HMO'S	FEDERAL GOVERNMENT PROGRAMS
<ul style="list-style-type: none"> <li>• Electronic health records</li> <li>• Practice management billing</li> <li>• Accounts receivable</li> <li>• Productivity loss</li> </ul>	<ul style="list-style-type: none"> <li>• Patient access (inpatient and ambulatory clinics)</li> <li>• Lab/radiology</li> <li>• Other ancillary services</li> <li>• Pharmacy</li> <li>• Physician order entry</li> <li>• Image management</li> <li>• Supply chain management</li> <li>• Health information management (HIM) utilization review</li> <li>• Bar coding</li> <li>• Billing</li> </ul>	<ul style="list-style-type: none"> <li>• Claims</li> <li>• Fraud and abuse</li> <li>• Customer service</li> <li>• Reimbursement</li> <li>• EOBs/EOCs</li> <li>• Network contract</li> <li>• Actuarial</li> <li>• Rating</li> <li>• Underwriting</li> <li>• Membership</li> <li>• Utilization review</li> <li>• Benefits</li> <li>• Contracts</li> <li>• Electronic data interchange (EDI)</li> <li>• Optical character recognition</li> <li>• Electronic remittance advice (ERA)/ electronic funds transfer (EFT)</li> <li>• Eligibility and claim status</li> <li>• Reporting</li> <li>• Data warehousing</li> </ul>	<ul style="list-style-type: none"> <li>• Medicare</li> <li>• Medicaid agencies</li> <li>• Plus Health Plans functions minus network and rating</li> <li>• Data warehouse for statistical reporting</li> </ul>
SPECIALTY PROVIDERS	SUPPLEMENTAL HEALTH INDUSTRY ORGANIZATIONS	MAJOR STATE GOVERNMENTS	HEALTH CARE TOOLS & DECISION SUPPORT
<ul style="list-style-type: none"> <li>• Veterans hospitals</li> <li>• Federal hospitals</li> <li>• Nursing homes</li> <li>• Home health providers</li> <li>• Durable medical equipment providers</li> <li>• Hospice</li> <li>• Mental health providers</li> <li>• Substance abuse providers</li> <li>• Physical therapy providers</li> <li>• Drug manufacturers</li> <li>• Supply chain companies</li> </ul>	<ul style="list-style-type: none"> <li>• Third-party administrators</li> <li>• Workers' Comp</li> <li>• Auto liability</li> <li>• Self Admin Employers</li> <li>• Clearinghouses</li> <li>• Programs that address health needs of the poor and uninsured</li> </ul>	<ul style="list-style-type: none"> <li>• University medical centers</li> <li>• Children's health programs</li> <li>• Student health programs</li> <li>• Department of Corrections</li> <li>• County and rural health programs</li> <li>• State public health agencies</li> <li>• State-funded medical schools</li> <li>• State employee health programs</li> </ul>	<ul style="list-style-type: none"> <li>• Predictive modeling</li> <li>• Health coaching</li> <li>• Personal financial tools (Flexible and Medical Savings Accounts)</li> <li>• Federal, state, and local authority collection of diagnosis data from clinical provider for epidemic and new disease analysis</li> </ul>

For the purposes of this document, a small hospital is defined as a health care institution with fewer than 100 hospital beds that provides patient treatment with specialized staff and equipment, and that often, but not always, provides for longer-term patient stays. Hospital claims refer to both outpatient and/or inpatient medical care submitted on an institutional claim (837i). Professional claims (837p) may be submitted through hospital-owned physician practices.

Small hospitals must understand, anticipate, and address the impact of the ICD-10 transition on revenue cycles and clinical, compliance, reporting, and operational systems. This includes but is not limited to the following functional areas:

- Patient intake
- Eligibility determination
- Authorization
- Certification
- Scheduling
- Care management/disease management (including clinical documentation)
- Coding and supporting clinical documentation requirements
- Billing and reimbursement (including diagnosis-related group (DRG), capitation rates, case rates, and per diems)
- Contracts and fees
- Payment reconciliation (including denial management)
- Regulatory and compliance reporting
- Quality assessment and management
- Case mix and population risk assessment
- Audit response

The ICD-10 Implementation Guide for Small Hospitals provides you and your hospital with a useful framework to pursue and successfully execute a timely and smooth transition to the ICD-10 code sets by October 1, 2014.



# Implementing ICD-10

## Implementing ICD-10

The ICD-10 Implementation Guide for Small Hospitals groups the milestones and tasks into the following six phases:

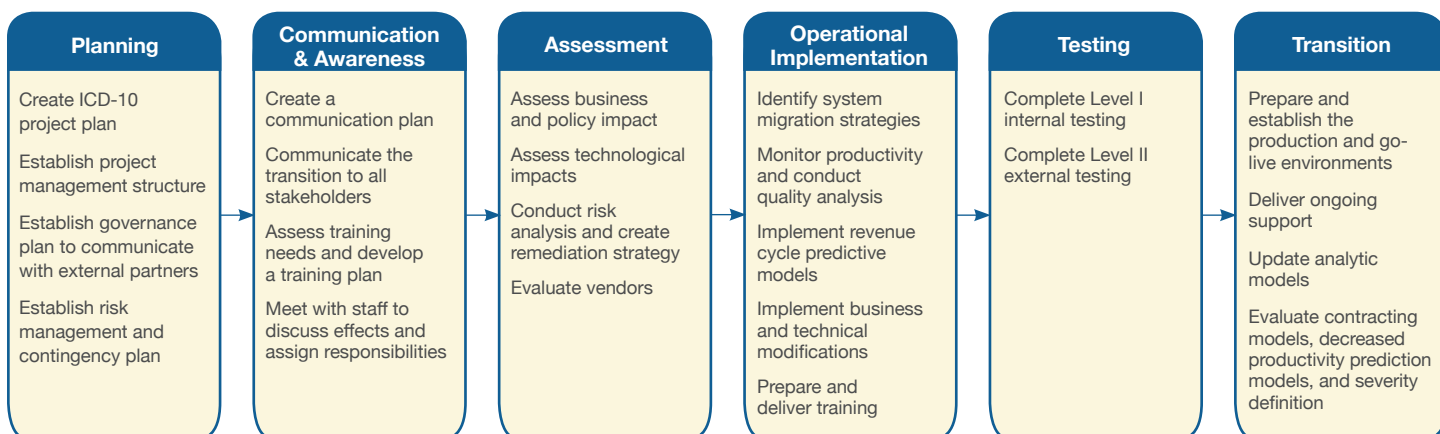
1. **Planning**
2. **Communication and Awareness**
3. **Assessment**
4. **Operational Implementation**
5. **Testing**
6. **Transition**

In order to achieve a smooth ICD-10 transition, your organization will need to create and follow a variety of plans tailored to your unique needs and culture, including plans for:

- Project management
- Communication
- Assessment
- Implementation
- Testing
- Post-transition operations

**Figure 2** shows some recommended ICD-10 implementation phases and high-level steps. For additional, more detailed tasks please refer to the Small Hospital ICD-10 Implementation Timeline.

**Figure 2: ICD-10 Implementation Phases**



## Planning Phase

Project management is important to any large undertaking. ICD-10 implementation will affect many departments of your hospital. Moving from ICD-9 codes to ICD-10 codes for services delivered on or after October 1, 2014 will require significant planning including:

- **Ensure top leadership understands the extent and significance of the ICD-10 change.** Download free ICD-10 fact sheets and background information from the CMS website at [www.cms.gov/ICD10](http://www.cms.gov/ICD10) and share trade publication articles on the transition.
- **Assign overall responsibility and decision-making authority for managing the transition.** This can be one person or a committee depending on the size of your hospital.
- **Plan a comprehensive and realistic budget.** This should include costs such as software upgrades and training needs.
- **Ensure involvement and commitment of all internal and external stakeholders.** Contact vendors, clearinghouses, payers, physicians, and others to determine their plans for the ICD-10 transition.
- **Adhere to a well-defined timeline** that makes sense for your organization (See Implementation Timeline).

## Implementation Timeline

While individual departments and transition team members may be more involved in specific implementation phases than others, everyone on your ICD-10 team should be aware of your hospital's overall ICD-10 transition timeline, as shown in this example.

Using the Small Hospital Implementation Timeline below as a guide, your organization should:

- Identify any additional tasks based on your organization's specific business processes, systems, and policies
- Identify critical dependencies and predecessors
- Identify resources and task owners
- Estimate start dates and end dates
- Identify entry and exit criteria between phases
- Continue to update the plan throughout ICD-10 implementation and afterwards



## Small Hospital Implementation Timeline

The following is a checklist of ICD-10 tasks, including estimated time frames for each task. Depending on your organization, many of these tasks can be performed on a compressed timeline or performed at the same time as other tasks.

This checklist is designed to provide a viable path forward for organizations just beginning to prepare for ICD-10. CMS encourages those who are ahead of this schedule to continue their progress forward.

## Planning, Communication, and Assessment

### *Actions to Take Immediately*

*To prepare for testing, make sure you have completed the following activities. If you have already completed these tasks, review the information to make sure you did not overlook an important step.*

- ☐ **Review ICD-10 resources** from CMS, trade associations, payers, and vendors
- ☐ **Inform your staff/colleagues** of upcoming changes (1 month)
- ☐ Create an **ICD-10 project team** (1 month)
- ☐ Identify **how ICD-10 will affect your organization** (3 months)
  - ☐ How will ICD-10 affect your people and processes? To find out, ask all staff members how/where they use/see ICD-9
  - ☐ Include ICD-10 as you plan for projects like meaningful use of electronic health records
- ☐ Develop and complete an **ICD-10 project plan** for your organization ( 1 month)
  - ☐ Identify each task, including deadlines and who is responsible
  - ☐ Develop plan for communicating with staff and business partners about ICD-10
- ☐ Estimate and **secure budget** (potential costs include updates to practice management systems, new coding guides and superbills, staff training) (2 months)
- ☐ **Ask your payers and vendors—software/systems, clearinghouses, billing services—about ICD-10 readiness** (2 months)
  - ☐ Ask about systems changes, a timeline, costs, and testing plans
  - ☐ Ask when they will start testing, how long they will need, and how you and other clients will be involved
  - ☐ Review trading partner agreements
  - ☐ Select/retain vendor(s)
- ☐ Review **changes in documentation requirements** and educate staff by looking at frequently used ICD-9 codes and new ICD-10 codes (ongoing)

## Transition and Testing

*March 2013 to September 2014*

- ☐ **March 1, 2013 to December 31, 2013:** Conduct **high-level training on ICD-10** for clinicians and coders to prepare for testing (e.g., clinical documentation, software updates) (ongoing)
- ☐ **April 1, 2013:** Start testing ICD-10 codes and systems with your practice's coding, billing, and clinical staff (9 months)
  - ☐ Use ICD-10 codes for diagnoses your practice sees most often
  - ☐ Use ICD-10 codes for inpatient hospital procedures
  - ☐ Test data and reports for accuracy
- ☐ Monitor vendor and payer preparedness, identify and address gaps (ongoing)
- ☐ **October 1, 2013:** Begin testing claims and other transactions using ICD-10 codes with business trading partners such as payers, clearinghouses, and billing services (10 months minimum)
- ☐ **January 1, 2014–April 1, 2014:** Review coder and clinician preparation; begin detailed ICD-10 coding training (6-9 months)
- ☐ Work with vendors to complete transition to production-ready ICD-10 systems

## Complete Transition/Full Compliance

*October 1, 2014*

- ☐ Complete ICD-10 transition for full compliance
  - ☐ ICD-9 codes continue to be used for services provided *before* October 1, 2014
  - ☐ ICD-10 diagnosis and inpatient procedure codes required for services provided *on or after* October 1, 2014
  - ☐ Monitor systems and correct errors if needed

**Note:** *This checklist addresses only the ICD-10 implementation. You will first need to implement the new version of the HIPAA electronic interchange transaction standards (Version 5010) if your organization has not done so yet. The Version 5010 compliance date was January 1, 2012.*

*CMS consulted resources from the American Medical Association (AMA), the American Health Information Management Association (AHIMA), the North Carolina Healthcare Information & Communications Alliance (NCHICA), and the Workgroup for Electronic Data Interchange (WEDI) in developing this checklist.*

## Project Management Process

**Table 4** identifies a series of recommended actions that small hospitals may consider in establishing a process to manage ICD-10 implementation.

**Table 4** includes the following elements:

- **Component/Goal:** Core parts of a project management structure
- **Recommended Actions:** Best practices your hospital should employ to support a smooth transition
- **Resources:** References provided later in this handbook that hospitals may use to carry out the best practices

**Table 4: Project Management Recommended Actions and Resources for Small Hospitals**

COMPONENT/GOAL	RECOMMENDED ACTIONS	RESOURCES
<b>Project management structure/Establish accountability across ICD-10 implementation team structure</b>	<ul style="list-style-type: none"><li>• Create a project oversight team consisting of senior representatives from the medical and nursing staff, finance, information technology (IT), health information management (medical records), and the business office. The project oversight team will:<ul style="list-style-type: none"><li>— Define roles and responsibilities</li><li>— Assign tasks</li><li>— Designate authority concerning change control management, risk management, and vendor management</li></ul></li><li>• Appoint an ICD-10 coordination manager responsible for making business, policy, and/or technical decisions</li><li>• Assemble an implementation team; establish a formal project management structure; and designate authority for different aspects of the transition, including change management, risk management, communications, training, testing, and vendor management</li><li>• Define a process for team members to discuss issues, risks, and changes relevant to the project's scope, schedule, and costs</li></ul>	<ul style="list-style-type: none"><li>• Implementation Timeline to identify detailed ICD-10 implementation dates and milestones</li><li>• Responsible, Accountable, Support, Consulted, Informed (RASCI) template</li></ul>

**Table 4: Project Management Recommended Actions and Resources for Small Hospitals** *continued*

COMPONENT/GOAL	RECOMMENDED ACTIONS	RESOURCES
<b>Assessment/Identify readiness for ICD-10 transition and determine the level of support needed</b>	<ul style="list-style-type: none"> <li>Assess the readiness of your hospital's staff and providers for the transition                             <ul style="list-style-type: none"> <li>Identify and assess skill levels and gaps for future needs and training</li> </ul> </li> <li>Perform an impact assessment to identify policies, processes, and systems that use or are affected by ICD coding, especially documentation and claims processing                             <ul style="list-style-type: none"> <li>Ask your staff where they use and/or see these codes appear, such as documentation, manuals, health information systems, and billing software</li> </ul> </li> <li>Identify and assess readiness of vendors, clearinghouses, and other business associates affected by ICD-10 and/or those whose involvement is essential to ICD-10 implementation</li> <li>Document and communicate impact assessment findings</li> </ul>	<ul style="list-style-type: none"> <li>Business Processes Affected by ICD-10 for information identifying ICD-10 impacts for hospital business processes and systems</li> <li>Methodology to Evaluate ICD-10 Vendors and Tools</li> <li>Assessing Vendor Functional Capabilities</li> </ul>
<b>Transition plan and budget/Use cost-benefit analysis to inform decision-making</b>	<ul style="list-style-type: none"> <li>Establish strategies, tasks, and goals for the ICD-10 transition.</li> <li>Select appropriate vendors by evaluating the costs and benefits associated with ICD-10 changes in your hospital business process and system upgrades. Compare this with your current vendors and/or potential vendors' offerings.</li> <li>Coordinate with internal and external resources (including vendors and other parties) required to support ICD-10 implementation across your hospital processes, policies, and systems.</li> <li>Document an inventory of the tasks involved in meeting the October 1, 2014, deadline. Establish the sequence, work effort, and duration for each task within the inventory, including:                             <ul style="list-style-type: none"> <li>Policy, procedures, and system updates</li> <li>Staff training needs to support all business processes, policies, and technology</li> <li>Vendor tasks essential to ICD-10 implementation</li> <li>Vendor and third-party planning</li> </ul> </li> <li>Distribute the implementation timeline internally and externally. Anticipate the potential need to refine the ICD-10 implementation timeline as internal or external factors warrant.</li> <li>Plan to regularly communicate the status of the transition based on the timeline.</li> <li>Implement integrated change management strategies, policies, and procedures across all functional areas and monitor acceptance on an ongoing basis.</li> <li>Formulate and approve a budget for expenses related to the transition, such as hospital-wide training and system upgrades.</li> </ul>	<ul style="list-style-type: none"> <li>Methodology to Evaluate ICD-10 Vendors and Tools</li> <li>Assessing Vendor Functional Capabilities</li> </ul>

**Table 4: Project Management Recommended Actions and Resources for Small Hospitals** *continued*

COMPONENT/GOAL	RECOMMENDED ACTIONS	RESOURCES
<b>Communication plan/ Maintain and share knowledge across the team</b>	<ul style="list-style-type: none"> <li>• Establish awareness and understanding of scope among hospital and medical staff leadership and secure their support for strategy, budget, and implementation plan</li> <li>• Develop a comprehensive communication plan with internal staff, providers, contractors, vendors, and other stakeholders <ul style="list-style-type: none"> <li>— Provide ongoing status updates to maintain focus on the project and upcoming initiatives that require staff involvement</li> <li>— Provide regular updates to senior leadership and those most directly affected by the changes, including coders, clinicians, physicians, and customer service</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Methodology to Evaluate ICD-10 Vendors and Tools</li> <li>• Assessing Vendor Functional Capabilities</li> </ul>
<b>Risk management plan/Proactively identify risks across internal and external critical infrastructure</b>	<ul style="list-style-type: none"> <li>• Identify possible implementation issues and risks</li> <li>• Coordinate between leadership team and implementation team to provide qualitative interdisciplinary or interdepartmental reviews and to address associated risks</li> <li>• Determine clear decision-making process and establish accountability and authority for resolving issues</li> <li>• Develop timely strategies to address issues and risks</li> </ul>	<ul style="list-style-type: none"> <li>• Business Processes affected by ICD-10 for information identifying ICD-10 impacts for hospital business processes and systems</li> <li>• Risk and Issue section</li> </ul>
<b>Operational implementation/ Manage the implementation process</b>	<ul style="list-style-type: none"> <li>• Establish points of contact with all vendors and build clear communication channels</li> <li>• Create a grid to track and manage both internal and external stakeholder contact information and implementation activities</li> <li>• Assign responsibility for developing and executing the ICD-10 implementation plan</li> <li>• Establish mechanisms for early identification of implementation problems and corrective actions with internal and external parties <ul style="list-style-type: none"> <li>— Track issues and risks and work with existing vendors and third parties to plan mitigation strategies</li> <li>— Monitor vendor and third-party relationships</li> <li>— Monitor and coordinate with external groups including physician practices, State Medicaid Agencies, Medicare entities, and clearinghouses</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Implementation section</li> <li>• Consider creating a Responsible, Accountable, Support, Consulted, Informed (RASCI) template</li> </ul>

**Table 4: Project Management Recommended Actions and Resources for Small Hospitals** *continued*

COMPONENT/GOAL	RECOMMENDED ACTIONS	RESOURCES
<b>Training/Develop the skills necessary to support ICD-10 implementation of ICD-10 code use within your organization</b>	<ul style="list-style-type: none"> <li>Educate staff in key function areas like claims, clinical and utilization review, and information systems on: <ul style="list-style-type: none"> <li>Scope and impact of ICD-10 conversion</li> <li>Importance of ICD-10 readiness</li> <li>Training needs/Outreach needs</li> </ul> </li> <li>Provide training to appropriate staff on the ICD-10 code sets, associated coding guidelines, and General Equivalence Mappings (GEMs) or other preferred ICD mapping tools</li> <li>Relay the importance of accurate coding and maintain awareness of the ICD-10 implementation</li> <li>Identify knowledge and training champions to serve as contacts for your ICD-10 staff</li> <li>Recognize staff accomplishments related to ICD-10 implementation and key milestones <ul style="list-style-type: none"> <li>Consider providing incentives to staff for accomplishments related to the ICD-10 implementation</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Training section</li> <li>Communication and Awareness section</li> </ul>
<b>Clinical Documentation Improvement</b>	<ul style="list-style-type: none"> <li>Prioritize the clinical conditions most commonly encountered in your hospital</li> <li>Identify new documentation concepts that will be required to support ICD-10, with a focus on the most common conditions you see</li> <li>Audit current documentation practice to identify areas of documentation gaps and opportunities for improvement</li> <li>Identify an ongoing documentation quality monitoring and improvement program</li> <li>Identify the potential for creating incentives for high quality documentation and potential disincentives for inappropriate levels of documentation</li> <li>Create templates within EHR systems or paper based templates that will help guide required documentation in common clinical areas</li> </ul>	
<b>Testing/Ensure readiness for go-live</b>	<ul style="list-style-type: none"> <li>Create comprehensive testing strategy</li> <li>Monitor and work with vendor(s) to develop test plans and test data</li> <li>Test internal systems (Level I)</li> <li>Test external systems (Level II)</li> <li>Resolve any outstanding problems from testing failures</li> </ul>	<ul style="list-style-type: none"> <li>Testing section</li> </ul>

**Table 4: Project Management Recommended Actions and Resources for Small Hospitals** *continued*

COMPONENT/GOAL	RECOMMENDED ACTIONS	RESOURCES
<b>Post-implementation/ Achieve 100 percent compliance</b>	<ul style="list-style-type: none"> <li>• Transmit electronic claims and other transactions successfully using ICD-10 for claims with dates of service on or after October 1, 2014</li> <li>• Monitor actual progress versus planned progress</li> <li>• Work with vendor(s) to provide customer support</li> <li>• Monitor the impact on reimbursements, claims denials and rejections, coding accuracy and productivity, fraud and abuse detection, and investigations</li> <li>• Monitor system capacity requirements and application runtime efficiencies</li> <li>• Evaluate contracting models, productivity, risk prediction models, and severity definition</li> <li>• Resolve post-implementation issues as quickly as possible; create plan for full problem resolution as needed</li> </ul>	<ul style="list-style-type: none"> <li>• ICD-10 Implementation Timeline</li> </ul>

## Risk and Issue Management

Your organization will need to work with vendors and other parties to anticipate implementation issues and risks and develop strategies to streamline ICD-10 implementation. To do this effectively, consider creating a risk inventory that:

- Identifies risks to successful implementation by departments or key internal/external functions
- Identifies the chance a risk will occur, how it might affect your hospital, and ways to avoid risk—like redundant training, identifying alternate vendors, and creating contingency backups for key functions
- Assigns responsibility for risk reduction action, including when to involve project management or executive sponsor
- Continuously monitors impact on scope, schedule, and costs
- Addresses implementation issues and risks through channels appropriate for your hospital

**Table 5** identifies a preliminary list of basic risks your hospital should be aware of and manage and includes:

- **Risk:** Broad categorization of various specific risks
- **Description of Risk:** Specific risk examples within the broad category
- **Risk Avoidance/Mitigation:** Steps to manage and lessen the risk

NOTE: the list is not exhaustive but a primer.

**Table 5: Hospital Risks**

RISK	DESCRIPTION OF RISK	WAYS TO REDUCE RISK
<b>Internal or external parties fail to remain on track for the ICD-10 schedule</b>	<p>If your hospital's implementation planning effort does not include coordinating with trading partners, vendors, consultants, and other stakeholders, then the ICD-10 master implementation plan may not be realistic and could affect your hospital's ability to complete the necessary system changes in time to meet the October 1, 2014, deadline due to:</p> <ul style="list-style-type: none"> <li>• Inadequate or untimely staff training</li> <li>• Lack of vendor preparation</li> <li>• Loss of key vendors</li> <li>• Loss of key staff</li> <li>• Lack of payer readiness</li> <li>• Budget limitations</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate your existing vendors' past performance regarding project deadlines to identify and address potential problems.</li> <li>• Establish scenarios that you can use to virtually test the readiness of external parties.</li> <li>• Identify and evaluate alternative vendors.</li> <li>• Coordinate with payers to ensure schedule alignment.</li> <li>• Provide training to key staff members.</li> <li>• Budget realistically and include cushion for risk-related overruns.</li> <li>• Create implementation strategy for policies, processes, and systems.</li> <li>• Identify and schedule predecessor tasks.</li> <li>• Survey third party payers, clearinghouses, and current vendors regularly to assess their progress.</li> </ul>
<b>Adverse short-term impact on hospital revenue stream</b>	<p>The transition between coding systems might adversely affect your hospital's revenue stream. The following risks will affect revenue streams:</p> <ul style="list-style-type: none"> <li>• Lack of payer readiness and resulting disruption or increased delays and denials in payers' claims processing</li> <li>• Increased payer scrutiny to identify potential duplicate billings and/or payments for service dates pre- and post-October 1, 2014 (i.e., one under ICD-9 and one under ICD-10)</li> <li>• Increased payer requests for medical records related to specific claims</li> </ul>	<ul style="list-style-type: none"> <li>• Build up hospital cash reserves and/or secure increased lines of credit.</li> <li>• Closely monitor claim submittals immediately pre- and post-October 1, 2014, to prevent submittal of duplicates.</li> <li>• Run both ICD-9 and ICD-10 for a specified period post-implementation.</li> <li>• Identify or conduct mappings between ICD-9 and ICD-10 codes, as applicable. Identify ICD-10-CM codes that your hospital may accidentally double bill and take steps to prevent.</li> <li>• If billing or payment errors are identified, report them early rather than wait for them to be discovered.</li> </ul>



**Table 5: Hospital Risks** *continued*

RISK	DESCRIPTION OF RISK	WAYS TO REDUCE RISK
<p><b>Exposure to allegations of fraud and abuse</b></p>	<p>Private payers and government program integrity agencies and contractors may focus additional attention on opportunities for fraud and abuse related to the transition to ICD-10 codes.</p> <p>There are substantial new requirements for clinical documentation in support of the increased detail in ICD-10. Lack of familiarity and adherence by clinical staff in meeting these documentation requirements will expose the organization to an increased risk during audits.</p> <p>Coding practices will likely be subject to increased audit scrutiny for an indefinite period following the October 1, 2014, compliance date.</p> <p>Coding discrepancies that materially affect payment amounts will be subject to routine overpayment recovery actions. If there is significant financial impact, they may undergo more severe enforcement actions, including formal investigations and referral for administrative sanctions or other penalties.</p>	<ul style="list-style-type: none"> <li>• Emphasize the critical importance of proper clinical documentation and periodically audit sample records for completeness, accuracy, and consistency. Ensure that clinicians understand the risks of incomplete or inaccurate documentation.</li> <li>• Emphasize in staff training and to external vendors the importance of ensuring that all coding is consistent with the clinical record and the risks to your hospital if team members fail to code accurately.</li> <li>• Identify early on the high priority clinical domains that will be most affected by the new documentation requirements.</li> <li>• Begin training for clinicians and coders and use both coding sets for six months or more prior to the compliance date.</li> <li>• Periodically audit claim submittals, both pre-payment and post-payment, to identify and address incorrect coding.</li> <li>• Identify and evaluate experienced health care fraud and abuse counsel as resources for addressing potential problems.</li> <li>• Review Health and Human Services Office of Inspector General (HHS-OIG) Voluntary Disclosure Guidelines as a basis for proactively addressing potential problems.</li> <li>• Monitor and perform your own internal audits in clinical areas targeted for audits by Medicare and Medicaid Recovery Audit Contractors.</li> </ul>
<p><b>Adverse impact on relationships with payers and patients</b></p>	<p>Expect that your staff will need to follow up with payers more often on claim payment delays, denials, referrals, or other administrative activities that may affect claim payment during and after the transition period. Your hospital can expect higher call volumes from patients and payers to report and resolve claim and authorization rejections due to incorrect coding.</p>	<ul style="list-style-type: none"> <li>• Train staff members to manage patient concerns related to denied or pending authorizations, claims, and referrals.</li> <li>• Establish an internal mechanism for your hospital to document and track patient complaints and payer issues related to ICD-10 coded claims.</li> <li>• Provide vendor tools for billing and coding to help staff members identify potential code matches and rationales to bridge the learning curve quickly.</li> <li>• Train staff on how to address potential transition issues with codes, to lessen incorrect coding and rejected claims.</li> </ul>

**Table 5: Hospital Risks** *continued*

RISK	DESCRIPTION OF RISK	WAYS TO REDUCE RISK
<b>Implications for care, disease, and case management</b>	<p>ICD-10 implementation will have a significant impact on care management including case management, disease management, wellness, and authorizations (including medical necessity and coverage determination).</p> <p>Historically, payers carry out these functions. However, with the advent of Accountable Care Organizations (ACOs), your hospital should anticipate the need to institute these functions as well.</p> <p>In the short term, your hospital staff should become familiar with new ICD-10-related payer requirements regarding provider documentation and/or reporting.</p>	<ul style="list-style-type: none"> <li>Identify and train clinicians on ICD-10 requirements for clinical documentation. Coordinate with external payers and hospitals as needed.</li> <li>Educate and train your staff on ICD-10-related medical policies, benefit determination, and eligibility for special programs.</li> </ul>
<b>Long-term implications for payers' network contracts, fee schedules, and capitation levels</b>	<p>ICD-10 codes are far more detailed, which will provide payers with opportunities to develop and implement new pricing and reimbursement structures. This includes fee schedules and/or capitation levels and hospital and ancillary pricing scenarios that take into account greater diagnosis specificity.</p>	<ul style="list-style-type: none"> <li>Encourage your regional and national professional associations to monitor and report on ICD-10-related reimbursement initiatives.</li> <li>Research, understand, and document the impact of ICD-10 coding on your hospital's costs. This will give you a basis for evaluating and responding to any related payer initiatives to alter pricing structures and reimbursement schedules.</li> </ul>
<b>Failure to maintain communication with both internal, and external parties</b>	<p>Ineffective communication with either internal or external parties could negatively affect your ICD-10 implementation schedule and costs.</p> <p>Communicating inconsistent messages to staff and external parties may disrupt timelines and budgets.</p>	<ul style="list-style-type: none"> <li>Use the Small Hospital ICD-10 Operational Implementation Phase section of this guide and include stakeholders in the planning process to ensure all parties have the same goals.</li> <li>Develop a communication plan that includes details about how communication will occur between staff and external parties.</li> <li>Establish consistent forms of communication for training or information sessions, including dashboards, progress meetings, memos, or presentations.</li> </ul>
<b>Failure to identify all affected areas</b>	<p>Failure to identify affected business areas, systems, applications, databases, and interfaces could compromise your hospital's ability to meet planned schedule and costs.</p> <p>Failure to perform exhaustive impact assessments on all affected ICD-10 systems, interfaces, and business areas could affect the ICD-10 master implementation plan and make it difficult for your hospital to meet schedule and costs.</p> <p>If the ICD-10 business requirements gathered during the impact assessment phase do not accurately reflect your hospital's business needs, then the development/testing phase could experience serious setbacks, making it difficult for your hospital to meet the October 1, 2014, implementation deadline.</p>	<ul style="list-style-type: none"> <li>Include all business areas in your impact assessment.</li> <li>Interview business and project leaders to fully understand any possible ICD-10 impacts.</li> <li>Develop a strategy for maintaining and processing ICD-9 and ICD-10 codes simultaneously for two to five years after the October 1, 2014, implementation date.</li> </ul>

**Table 5: Hospital Risks** *continued*

RISK	DESCRIPTION OF RISK	WAYS TO REDUCE RISK
<b>Failure to test adequately for ICD-10</b>	<p>Failure to test systems and processes adequately before the implementation date may lead to the following risks:</p> <ul style="list-style-type: none"> <li>• The system may be unable to meet business requirements</li> <li>• Updated business rules may not yield the expected outcomes</li> <li>• Reports using ICD codes do not function properly with the new ICD-10 codes</li> <li>• System interfaces do not yield the expected results</li> <li>• Test teams are not organized properly to complete phase testing in a timely manner</li> <li>• Major reduction in system performance due to volume transaction throughput, system capacity limitations, processing rate, and similar issues</li> </ul>	<ul style="list-style-type: none"> <li>• Develop a testing strategy for both internal and external testing.</li> <li>• Include the following types of testing in your timeline: <ul style="list-style-type: none"> <li>— Unit testing/base component testing</li> <li>— System testing</li> <li>— Regression testing</li> <li>— Performance testing</li> <li>— Privacy/security testing</li> <li>— Internal comprehensive testing</li> <li>— External comprehensive testing</li> </ul> </li> </ul>

## Communication and Awareness Phase

A communication and awareness plan ensures that all your internal and external stakeholders understand their responsibilities for ICD-10 implementation. The communication plan should identify stakeholders, audiences, messages, issues, action triggers, roles and responsibilities, timelines, communication methods, and evaluation techniques. The degree of planning and documentation in this process will depend on the size of your hospital.

**Table 6** identifies the key components your communication and awareness plan may encompass.

**Table 6: Communication Plan Key Components and Details**

TASK	DETAILS
<b>Purpose</b>	<ul style="list-style-type: none"> <li>• Provide ICD-10 background information to staff members</li> <li>• Describe current state of ICD-10 within your hospital</li> <li>• Ensure awareness of ICD-10 implementation across departments</li> <li>• Identify end goals for the communication and awareness plan</li> </ul>
<b>Audience and stakeholders</b>	<ul style="list-style-type: none"> <li>• Identify the intended audience including stakeholders, external partners, contractors, and vendors</li> <li>• Anticipate communication gaps and frequently asked questions regarding organization, operating structure, roles, and responsibilities</li> </ul>
<b>Convey the message to the audience</b>	<ul style="list-style-type: none"> <li>• Convey the intended purpose and outcomes to the audience</li> <li>• Describe targeted communication toward smaller groups as necessary</li> </ul>
<b>Identify issues to overcome</b>	<ul style="list-style-type: none"> <li>• Address implementation issues</li> <li>• Describe implementation plans</li> </ul>
<b>Assign roles and responsibilities for the communication activities</b>	<ul style="list-style-type: none"> <li>• Identify the project management structure</li> <li>• Assign roles and responsibilities for the coordination manager, steering committee, and user groups</li> <li>• Define roles with clear accountability and authority to make and act on decisions within any communication</li> <li>• Consider the intended audience and responsible party for issue and risk identification and resolution</li> </ul>
<b>Timeline</b>	<ul style="list-style-type: none"> <li>• Identify project milestones and compliance dates</li> <li>• Identify tasks, milestones, and deadlines for project teams</li> </ul>
<b>Method of communication and distribution</b>	<ul style="list-style-type: none"> <li>• Identify communication distribution methods</li> <li>• Describe communication vehicles to monitor progress including status reports, team meetings, and project reviews</li> <li>• Distribute as written, oral, visual, electronic, or in-person communication as appropriate</li> </ul>

**Table 6: Communication Plan Key Components and Details** *continued*

TASK	DETAILS
<b>Internal versus external communication</b>	<ul style="list-style-type: none"> <li>• Define plans for communicating internally versus externally</li> <li>• Account for inherent differences between internal and external audiences</li> </ul>
<b>Internal communications</b>	<ul style="list-style-type: none"> <li>• Assess staff training needs regarding ICD-10-CM and ICD-10-PCS</li> </ul>
<b>External communications</b>	<ul style="list-style-type: none"> <li>• Communicate with vendors, third-party billers, and clearinghouses on ICD-10 readiness</li> <li>• Communicate with software vendors on updates that will need to be implemented into the hospital's software system prior to October 1, 2014</li> <li>• Identify and communicate with other external stakeholders, including state agencies and contractors, on ICD-10 readiness</li> </ul>

## Resource Management and Training

To prepare for ICD-10, your hospital will need to identify available resources, assess training needs, build a training plan, and manage productivity during the transition process.

### Assess Training Needs

The ICD-10 coordination manager should prepare a training needs assessment to identify:

- Affected staff members, including physicians, nurse practitioners, physician assistants, clinical technicians, administrative staff, coders, and vendors
- Staff competence and skills gaps, and how to tailor training to individuals or business user groups if necessary
- Optimal timing to receive training/certification
- Best approach training methods for your hospital, including webinars, certification courses, and community courses

Consider a variety of issues when conducting a needs assessment. Using the hospital self-assessment questions outlined below, your ICD-10 coordination manager may identify factors that suggest internal and external training needs.

**Table 7** lists self-assessment questions and factors to consider when conducting a needs assessment.

**Table 7: Training Preparation and Needs Assessment**

SELF-ASSESSMENT QUESTIONS
Who must receive training on the ICD-10 code set?
<p>How will you customize training for the right roles?</p> <ul style="list-style-type: none"> <li>• Management</li> <li>• Information technology</li> <li>• Clinical care and documentation</li> <li>• Operations and Billing</li> <li>• Coding and record management</li> <li>• Compliance</li> <li>• Finance</li> <li>• Quality management</li> </ul>
What options are available to train staff (onsite training, vendor training, community courses, webinars, or certification courses)?
Are there gaps in your staff's knowledge of medical procedures and anatomy? Are there certification opportunities in ICD-10 coding that staff can take advantage of to improve accuracy and build "ICD-10 know-how" throughout the organization?
When should your staff complete the training?
How long will it take to train your staff?
Which training formats will work best for your staff (classroom training, web-based training, or self-guided materials)?
How much will the training cost?
What resources will you need to support the staff after training, including manuals, system prompts, troubleshooting guides, or FAQ lists?
<p>Depending on the length of training, how will your staff maintain operations and reduce productivity loss during training? What is the current staffing level?</p> <ul style="list-style-type: none"> <li>• Is there is a business need for additional experienced coding staff to support your team during the ICD-10 transition period? Do you need to outsource some operations? Outsourcing additional coding expertise during the preparatory stage can allow for just-in-time training and reduce the burden of the transition on staff.</li> </ul>
<p>How will you determine the effectiveness of your training?</p> <ul style="list-style-type: none"> <li>• Testing</li> <li>• Quality Monitoring</li> <li>• Feedback methods</li> <li>• Incentive development</li> </ul>

## Create a Training Plan

The training plan's purpose is to make sure that your staff and external partners gain the necessary skills and knowledge on the processes, procedures, policies, and system updates particular to your hospital's ICD-10 implementation. The ICD-10 coordination manager should consider the following points when evaluating training content for internal staff and external partners for ICD-10 implementation:

- Different training formats work in different situations. Potential training sources include: traditional classroom training, distance education, or webinars. Your hospital can also search for local ICD-10 train-the-trainer seminars or boot camps that provide sessions in a classroom-style setting.
- Check with CMS, the American Academy of Professional Coders (AAPC), American Health Information Management Association (AHIMA), and Workgroup for Electronic Data Interchange (WEDI) to identify webinars available for hospitals. Some webinars are free; others have fees attached.
- AAPC hosts an ICD-10-CM Implementation two-day boot camp for employees who are responsible for their hospital's coding, health information management, and/or ICD-10 implementation (i.e., the ICD-10 Coordinator). The course provides a general overview of:
  - ICD-10-CM structure
  - Implementation planning, finance, and budgeting
  - Optimization of business processes
  - Information technology
  - Working with vendors, crosswalking, and General Equivalence Mappings (GEMs)
- AHIMA estimates that coding staff working outside the hospital inpatient setting will require 16 hours of ICD-10 education. This training should focus on ICD-10-CM and not ICD-10-PCS. (Hospital inpatient coding staff require an estimated 50 hours of ICD-10 education because they will need to learn both ICD-10-CM and ICD-10-PCS.<sup>2</sup>)
- All coding staff should complete their full ICD-10 education no more than six to nine months before the compliance date.
- Assess your staff for ICD-10 proficiency after training and provide additional training to address weaknesses. To do this, the ICD-10 coordination manager should identify common inaccurate code decision-making, clinical documentation errors, and productivity lags.
- To address proficiency issues, identify needs to assist with frequently asked questions about coding, category quick reference sheets, system user prompts, or refresher courses.
- Not all coding staff will require the same type or amount of ICD-10 education. Training for coding staff that work for your hospital's medical specialty area or specialty clinic should focus on the code categories most applicable to the particular patient mix.
- Evaluate methods for clinical documentation improvement training as compared to coding training.

2. [http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1\\_049753.hcsp?dDocName=bok1\\_049753](http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1_049753.hcsp?dDocName=bok1_049753)

**Pre-implementation action steps:**

- Plan for intensive education prior to the ICD-10 transition.
- Appropriate staff should complete comprehensive ICD-10 education no more than six to nine months before the compliance date (October 1, 2014). Some preliminary ICD-10 training will be required earlier so that staff can conduct internal and external testing in 2013.

**Post-implementation action steps:**

- Assess your staff's ICD-10 proficiency after they complete training and provide additional training to address identified areas of weakness. Identify common inaccurate coding, decision-making, claim processing errors, and productivity lags.

**Table 8** identifies anticipated training needs for potential hospital staff members.

**Table 8: Training Topics, Purpose, and Audience**

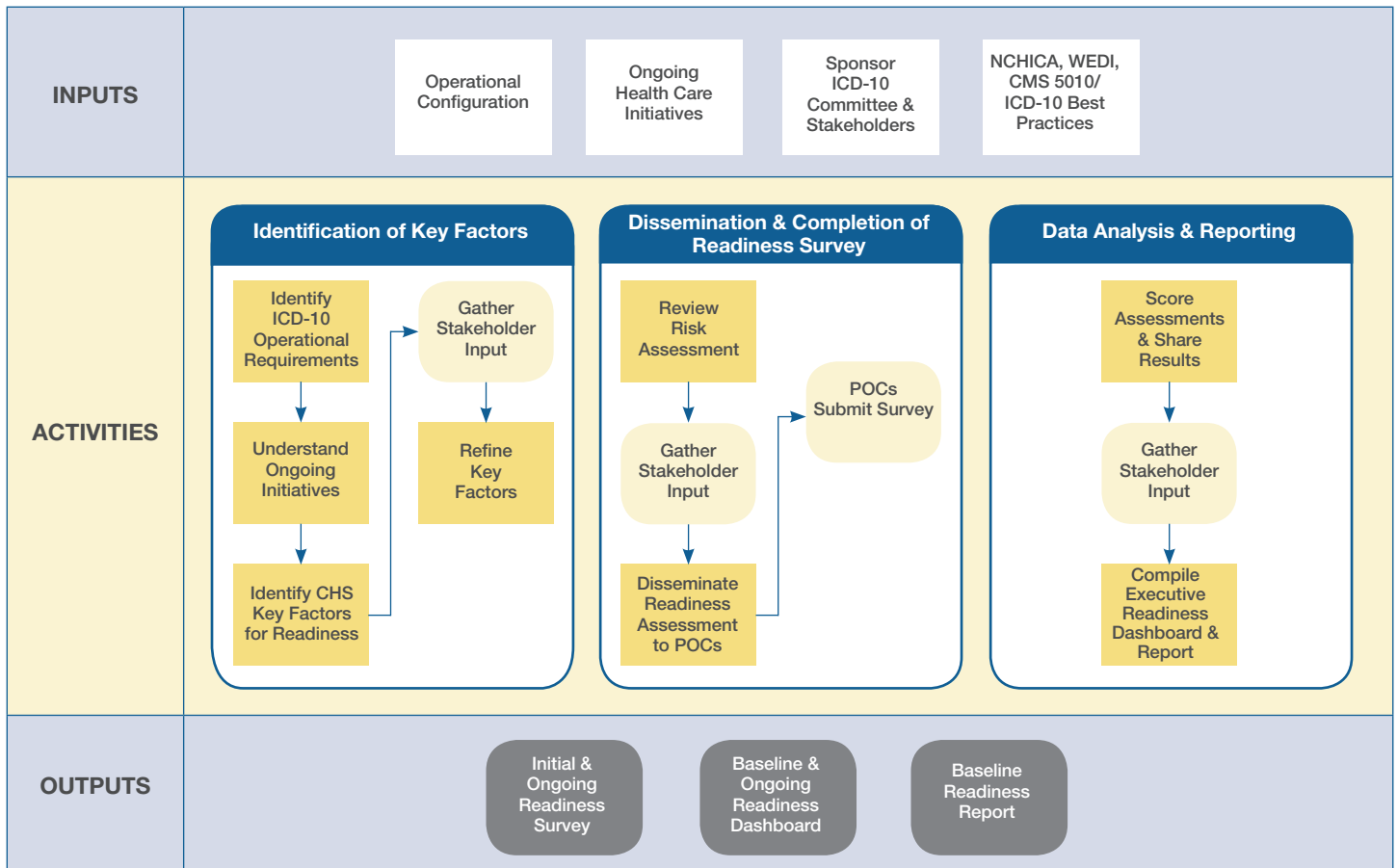
TRAINING TOPIC	PURPOSE OF TRAINING	AUDIENCE
<b>Basic understanding of the ICD-10 code set and implementation</b>	<ul style="list-style-type: none"><li>• Understand the differences between ICD-9 and ICD-10</li><li>• Understand rationale for ICD-10 adoption</li><li>• Understand existing tools, risks, and industry updates</li><li>• Clarify roles and responsibilities</li></ul>	Physicians, nurse practitioners, physician assistants, administrative staff, clinical technicians, clinical researchers, HIM, coders, billers, research staff, and vendors
<b>Basic concepts of anatomy and pathophysiology relevant to ICD-10</b>	<ul style="list-style-type: none"><li>• Understand basic concepts of anatomy that are relevant to ICD-10 and patient care</li><li>• Understand basic concepts of disease processes and patterns that are relevant to ICD-10 and patient care</li></ul>	Physicians, nurse practitioners, physician assistants, administrative staff, clinical technicians, clinical researchers, coders, and vendors
<b>ICD-10 coding</b>	<ul style="list-style-type: none"><li>• Review ICD-10 coding knowledge of medical procedures and anatomy, including clinical specificity of the new code sets</li><li>• Refresh anatomy knowledge, if needed</li></ul>	HIM staff, administrative staff, and coders
<b>ICD-10 impacts of clinical documentation on both proper coding and good patient care</b>	<ul style="list-style-type: none"><li>• Describe how documentation and coding based on that documentation impacts business processes</li><li>• Describe clinical documentation needed to support good patient care and simultaneously support proper coding in ICD-10</li></ul>	Physicians, nurse practitioners, physician assistants, compliance and administrative staff, clinical technicians, finance staff, coders, and vendors
<b>Partner and contractor</b>	<ul style="list-style-type: none"><li>• Explain roles and responsibilities in ICD-10 implementation process</li></ul>	Partners and contractors
<b>Using systems updated for ICD-10</b>	<ul style="list-style-type: none"><li>• Review ICD-10 system impacts</li><li>• Focus on system updates</li><li>• Develop a roadmap for leveraging the advantages of ICD-10 both from the clinical and business perspective</li></ul>	IT, administrative, and compliance staff



## Assessment Phase

Your hospital must assess and monitor all processes and systems affected by ICD-10. Complete the steps shown in **Figure 3** to monitor progress throughout your hospital's ICD-10 implementation.

**Figure 3: Readiness Assessment Method**

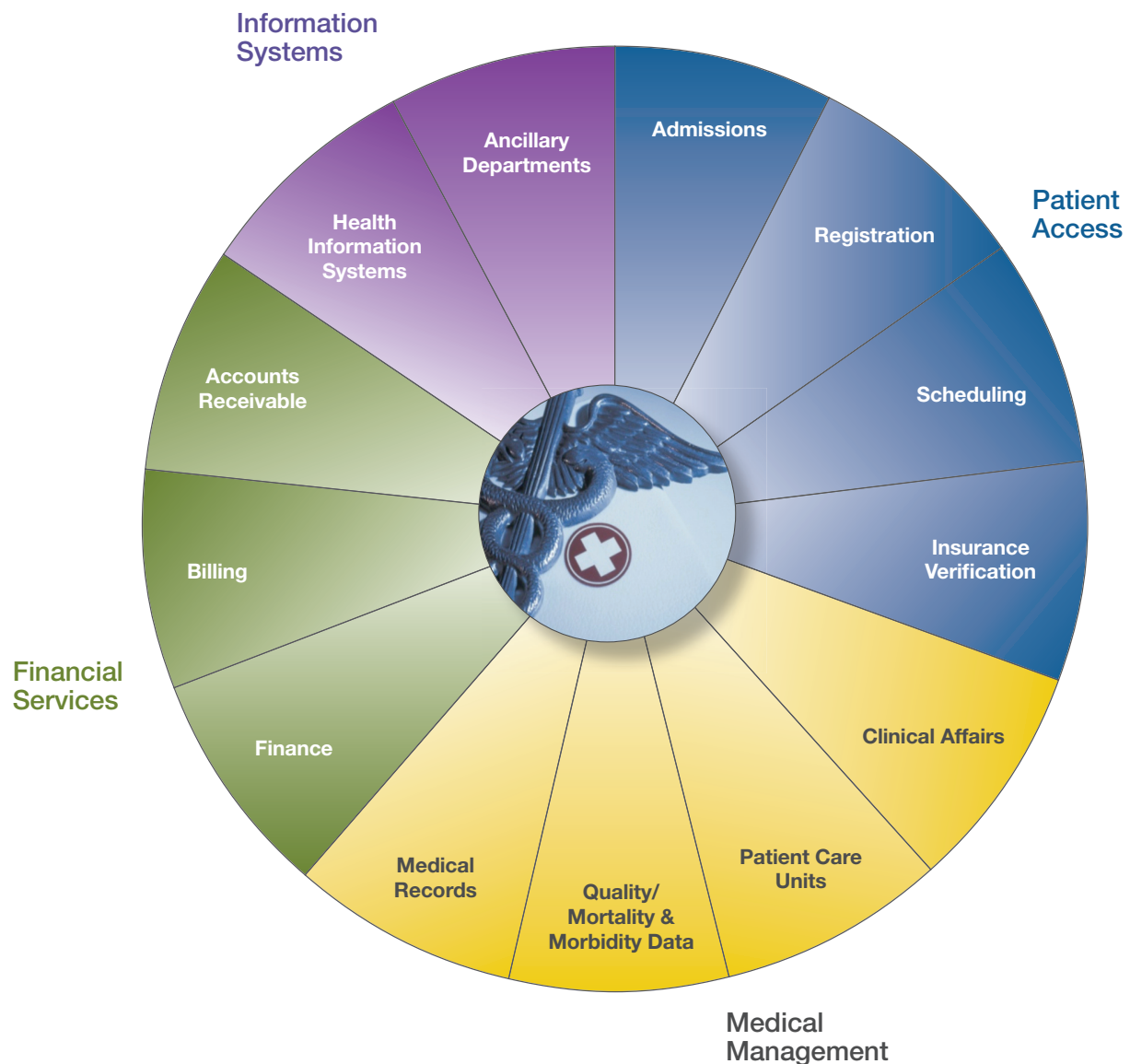


Source: Noblis, Inc.

## Business Processes Affected by ICD-10

ICD-10 implementation will affect nearly all core operations of health care organizations. This section identifies potential ICD-10 impacts on your hospital's business processes and systems. **Figure 4** highlights the high-level business areas that will be affected by ICD-10.

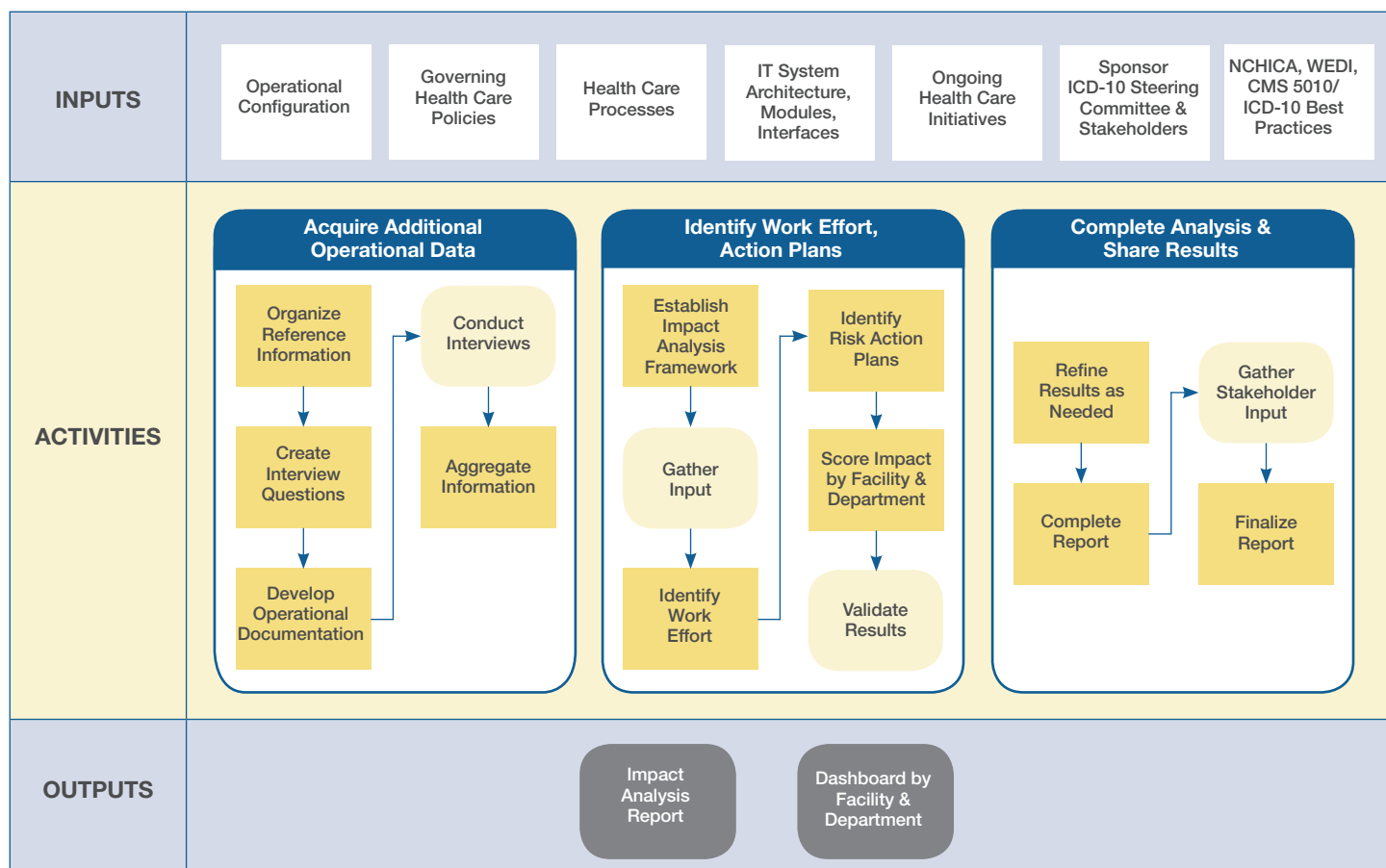
**Figure 4: Core Hospital Departments Affected by ICD-10**



Source: Noblis, Inc.

To identify how ICD-10 will affect your hospital, determine which policies, processes, and systems refer to or use ICD-10 codes. You will need to complete three major activities as part of the impact analysis. First, acquire operational data about your hospital. It may be helpful to use reference information and interview various parties. Next, your hospital will need to identify the work effort and actions needed to implement the policies, processes, and systems. Finally, analyze and share the results. **Figure 5** illustrates a recommended method for conducting an impact analysis.

**Figure 5: Impact Analysis Method**



Source: Noblis, Inc.

## High-level Hospital Business Impacts

Small hospital administrative and delivery systems are generally integrated so that all system components must perform properly in order to achieve the desired results. During the impact assessment phase of the ICD-10 implementation process, your hospital should identify systems, applications, interfaces, and business areas posing the greatest risk to the ICD-10 implementation effort. Once the major risk areas have been identified, assess their likely impact, and discuss strategies to minimize overall risk.

**Table 9** provides a generic impact assessment of business areas commonly found in small hospitals.

**Table 9: Hospital Business Impacts**

BUSINESS AREA & IMPACT	ASSOCIATED FUNCTIONAL AREAS	RISKS & PREVENTIVE ACTION
<b>Information Systems</b> <i>Very High</i>	<ul style="list-style-type: none"> <li>Core health information systems</li> <li>EHR, billing, clinical, coding systems</li> <li>Vendor management</li> </ul>	<ul style="list-style-type: none"> <li><b>Risk:</b> Limited access to patient data and test results and scheduling challenges</li> <li><b>Preventive Action:</b> Update systems to support patient flow processes and background operations and execute comprehensive testing</li> </ul>
<b>Finance/Revenue Cycle</b> <i>Very High</i>	<ul style="list-style-type: none"> <li>Admissions &amp; Registration (A/R)</li> <li>Scheduling</li> <li>Contracting</li> <li>Billing, A/R days</li> </ul>	<ul style="list-style-type: none"> <li><b>Risk:</b> Increase in A/R days, claim denials, and lost or deferred revenue</li> <li><b>Preventive Action:</b> Create mitigation plans to address billing delays, denials, and coding error rates</li> </ul>
<b>Medical Records/HIM</b> <i>Very High</i>	<ul style="list-style-type: none"> <li>Coding</li> <li>Physician chart completion</li> </ul>	<ul style="list-style-type: none"> <li><b>Risk:</b> Increase in coding turnaround time after initial ICD-10 go-live</li> <li><b>Preventive Action:</b> Develop response to new information demands</li> </ul>
<b>Clinical</b> <i>Very High</i>	<ul style="list-style-type: none"> <li>Physician orders/clinical documentation</li> <li>Results reporting</li> <li>Nursing care</li> </ul>	<ul style="list-style-type: none"> <li><b>Risks:</b> <ul style="list-style-type: none"> <li>Clinicians may resist providing more detailed documentation to support coding for increased ICD-10 data analysis, leading to need for more queries to physicians</li> <li>Terminology changes will significantly affect coder interpretation of clinical record and could be confusing to clinicians</li> </ul> </li> <li><b>Preventive Actions:</b> <ul style="list-style-type: none"> <li>Proactive education on the value of the enhanced definitive terminology of ICD-10</li> <li>Develop an implementation strategy that includes collaboration between coder and clinicians</li> </ul> </li> </ul>
<b>Quality</b> <i>High</i>	<ul style="list-style-type: none"> <li>Clinical benchmarking</li> <li>Performance improvement</li> <li>Risk management</li> <li>Infection control</li> <li>Payment initiatives</li> </ul>	<ul style="list-style-type: none"> <li><b>Risks:</b> <ul style="list-style-type: none"> <li>Data analysis may be disrupted, especially quality data and historical trends</li> <li>Substantial potential impacts to coding productivity and coding quality</li> </ul> </li> <li><b>Preventive Actions:</b> <ul style="list-style-type: none"> <li>Develop a strategy for mapping historical data to ICD-10 conversion</li> <li>Plan for sufficient coder training and transition time to minimize any productivity loss</li> </ul> </li> </ul>

**Table 9: Hospital Business Impacts** *continued*

BUSINESS AREA & IMPACT	ASSOCIATED FUNCTIONAL AREAS	RISKS & PREVENTIVE ACTION
<b>Ancillary Support</b> <i>Moderate</i>	<ul style="list-style-type: none"> <li>• Surgery</li> <li>• Behavioral health</li> <li>• Lab, radiology, pharmacy, cardiology, therapies</li> <li>• Other ancillary</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Risks:</b> <ul style="list-style-type: none"> <li>– Changes in terminology may affect clinician rationales for ordering tests and procedures</li> <li>– Changes in interfaces for ICD-10 from main HIS to any ancillary system</li> </ul> </li> <li>• <b>Preventive Actions:</b> <ul style="list-style-type: none"> <li>– Plan for adequate physician training and orientation to the improved and more descriptive terminology of ICD-10</li> <li>– Plan and develop a strategy for adequate system testing</li> </ul> </li> </ul>
<b>Research</b> <i>Moderate</i>	<ul style="list-style-type: none"> <li>• Research</li> <li>• Clinical trials</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Risks:</b> <ul style="list-style-type: none"> <li>– Potential disruption in data due to mapping from ICD-9 to ICD-10</li> <li>– Significant effect on trending comparability and other time-based comparative analysis methods during the transition period</li> </ul> </li> <li>• <b>Preventive Action:</b> Develop strategy for mapping historical data and analyzing information</li> </ul>
<b>Administrative</b> <i>Low</i>	<ul style="list-style-type: none"> <li>• Medical staff</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Risks:</b> <ul style="list-style-type: none"> <li>– Documentation requirements and increased physician querying may adversely affect physician relationships</li> <li>– Definition of procedure-specific credentialing and privileges may be affected</li> </ul> </li> <li>• <b>Preventive Actions:</b> <ul style="list-style-type: none"> <li>– Plan for adequate training and orientation that includes physician/staff collaboration</li> <li>– Plan a strategy that includes communication with credentialing and privileges staff on any transitions to ICD-10 terminology and enrollment requirements</li> </ul> </li> </ul>

As discussed in the section on business processes affected by ICD-10, your hospital will need to conduct its own impact analysis. The following sections detail the general business areas and their components common to most small hospitals.

### Patient Flow and Revenue Cycle

ICD-10 will affect a number of processes associated with patient flow through the hospital as well as the revenue cycle, which is driven by data associated with various aspects of that patient flow.

**Table 10** discusses major processes in this area potentially impacted by ICD-10.

**Table 10: Patient Access/Finance/Revenue Cycle Impacts**

PROCESS	SUB-PROCESS	DEFINITION	ICD-10 IMPACT
<b>Patient intake</b>	<ul style="list-style-type: none"> <li>• Scheduling</li> <li>• Referral</li> <li>• New patient</li> <li>• Established patient</li> <li>• Eligibility</li> <li>• Scheduling requests</li> <li>• Encounter definition</li> <li>• Domain-specific IT</li> <li>• Registration</li> <li>• Contract information</li> <li>• Family relationships, roles, and responsibilities</li> </ul>	<p>Process of registering new or existing patients with the hospital, including scheduling, registration, and initial health history.</p> <p><b>Hospital scheduling:</b> Process of planning appointments and processing referrals.</p> <p><b>Patient registration:</b> Process of receiving forms from patient.</p> <p><b>Initial health history:</b> Includes data and notes from a patient's previous medical visits, including any patient observations provided to the physician.</p>	<ul style="list-style-type: none"> <li>• Update patient registration process to accommodate ICD-10 codes</li> <li>• Update existing business policies to determine coverage (deductibles, copays)</li> <li>• Update business policies to assess qualification for Dual-Eligibility, Supplemental Security Income (SSI), Coordination of Benefits (COB) and/or for special clinical programs including End Stage Renal Disease, Black Lung Disease or other conditions that might specifically affect eligibility or coverage</li> <li>• May affect triage routines</li> </ul>
<b>Referral</b>	Not applicable	Recommendations from a primary care or other physician to see any practitioner or specialist.	<ul style="list-style-type: none"> <li>• Update referral process to accommodate ICD-10 codes where appropriate</li> <li>• Capture clinical documentation requirements to support ICD-10</li> </ul>
<b>Authorization</b>	Not applicable	The process of obtaining permission from a managed health plan for routine inpatient hospital admissions or outpatient therapy.	<ul style="list-style-type: none"> <li>• Update authorization process to accommodate ICD-10 codes</li> <li>• Capture clinical documentation requirements per ICD-10</li> <li>• Test with payers wherever possible to avoid experiencing problems processing authorization under ICD-10</li> </ul>
<b>Pre-admission</b>	<ul style="list-style-type: none"> <li>• Health Status Assessment</li> <li>• Insurance and eligibility updates</li> </ul>	The process of gathering as much information as possible to streamline both administration and patient care upon admission.	<ul style="list-style-type: none"> <li>• Update pre-admission process to accommodate ICD-10 codes for such things as admission encounter interface transaction</li> </ul>
<b>Initial health history</b>	<ul style="list-style-type: none"> <li>• Medical</li> <li>• Medications</li> <li>• Current medication</li> <li>• Allergies</li> <li>• Problem list</li> <li>• Recent studies</li> </ul>	The assessment of the patient's health state and prior medical history.	<ul style="list-style-type: none"> <li>• Update data input to accommodate documentation to support ICD-10 coding</li> </ul>

**Table 10: Patient Access/Finance/Revenue Cycle Impacts** *continued*

PROCESS	SUB-PROCESS	DEFINITION	ICD-10 IMPACT
<b>Admissions</b>	<ul style="list-style-type: none"> <li>• Patient intake and registration systems</li> <li>• Insurance and eligibility updates</li> <li>• Determine power of attorney (POA)</li> </ul>	The process of patient intake to the hospital care system.	<ul style="list-style-type: none"> <li>• Identify patient's health state upon admission (including admitting diagnosis)</li> <li>• Identify pre-existing conditions upon admission</li> <li>• Identify reasons for admission using ICD-10 codes</li> <li>• Encounter transactions</li> <li>• Identify planned inpatient procedures</li> </ul>
<b>Clinical</b>	<ul style="list-style-type: none"> <li>• Patient history</li> <li>• Problem lists</li> <li>• Medication history</li> <li>• Current medication</li> <li>• Allergies</li> <li>• Patient examination</li> <li>• Treatment services</li> </ul>	Assessment and care delivery in the hospital environment.	<ul style="list-style-type: none"> <li>• Update data input to accommodate ICD-10 codes</li> <li>• Update templates and other clinical documentation interfaces to support ICD-10 documentation</li> <li>• Re-evaluate potential documentation and logic changes for: <ul style="list-style-type: none"> <li>• Clinical protocols</li> <li>• Nursing care plans</li> <li>• Reasons for orders</li> <li>• Order interface transactions</li> </ul> </li> </ul>
<b>Discharge</b>	<ul style="list-style-type: none"> <li>• Medical record coding</li> <li>• Discharge diagnoses</li> <li>• Bill creation</li> <li>• Coverage determination</li> <li>• Scheduling</li> <li>• Discharge instructions</li> <li>• Rules/algorithms</li> </ul>	The process of ensuring that the patient's transition out of the hospital environment is safe and supportive.	<ul style="list-style-type: none"> <li>• Update to support ICD-9 and ICD-10 code capture definition and display</li> <li>• Re-evaluate templates and documentation requirements to support ICD-10</li> <li>• Update to support ICD-10 based groupers</li> <li>• Evaluate potential impact on discharge instructions</li> </ul>
<b>Post-discharge</b>	<ul style="list-style-type: none"> <li>• Condition-driven follow-up</li> <li>• Patient information and follow-up care</li> </ul>	Engagement with patients to verify that post-discharge care is progressing as planned.	<ul style="list-style-type: none"> <li>• Identify patients who are candidates for post discharge support</li> </ul>

**Table 10: Patient Access/Finance/Revenue Cycle Impacts** *continued*

PROCESS	SUB-PROCESS	DEFINITION	ICD-10 IMPACT
<b>Billing/Financial Systems</b>	<ul style="list-style-type: none"> <li>• Charge masters</li> <li>• DRG and other payment-related groupers</li> <li>• Bundled payment systems</li> <li>• Billing IT systems</li> <li>• Initial billing</li> <li>• Re-billing</li> <li>• Payment reconciliation</li> <li>• Denial management</li> <li>• Payment appeals</li> </ul>	The process of managing the entire reimbursement revenue cycle to ensure appropriate reimbursement for services delivered.	<ul style="list-style-type: none"> <li>• Update to support ICD-10 based groupers</li> <li>• Update charge masters and all other financial systems to support ICD-10</li> <li>• Update all denial management processes due to the risk of significant increases in denials and changes in the adjudication rules</li> </ul>

### Medical Records/Health Information Management

ICD-10 will greatly impact your hospital's medical records department. All processes dealing with medical records will need to be investigated to determine the extent of the ICD-10 transition's effects.

**Table 11** describes the impact of ICD-10 on the medical records department.

**Table 11: Medical Records Impacts**

PROCESS	SUB PROCESS	DEFINITION	ICD-10 IMPACT
<b>Health Information Management</b>	<ul style="list-style-type: none"> <li>• Clinical documentation</li> <li>• Templates and forms</li> <li>• Electronic health record systems</li> <li>• Coding</li> <li>• Encoder/grouper tools</li> </ul>	The business area responsible for ensuring that all relevant information about the patient's health state and services delivered to improve or maintain that health state is complete, accurate, and available.	<ul style="list-style-type: none"> <li>• Update medical records systems used by physicians, including forms, templates, and interfaces to support documentation for ICD-10</li> <li>• Expect productivity to be affected for four to six months following ICD-10 implementation relevant to the additional requirements for documentation, coding and potential increase in physician queries</li> </ul>



## Quality

Quality metrics have become increasingly important in contracting and payment decisions. The ICD-10 implementation will dramatically change quality metrics in ways that are difficult to predict since there has been no historical experience with these codes in the United States. ICD-10 implementation will change measures of health care based solely on coding changes, not necessarily on any change in the actual delivery of services.

Consider the following factors when looking at quality measures during the ICD-10 transition period:

1. Changed code definitions may result in an apparent change in treatment behavior, when actually the change is only in the definition of the code.
  - For example: “Acute myocardial infarction” is defined in ICD-10 with a duration of four weeks as compared to eight weeks in ICD-9. The definition of “subsequent” in ICD-9 refers to a subsequent episode of care where in ICD-10 the term “subsequent” refers specifically to a subsequent myocardial infarction.
2. Crosswalking efforts will result in inaccurate translation in a significant number of cases since there is not an exact match between ICD-9 and ICD-10.
3. The ability to consistently measure the quality “intent” is unknown because there is no historical basis with ICD-10 codes.
4. The nature of a number of diagnoses and procedures cannot be defined in ICD-9 with the amount of specificity and level of detail as can be provided with ICD-10.
  - For example: If a patient had two successive wrist fractures, in ICD-9-CM each injury would be assigned the same code (814.00) not identifying specific information about each injury. With ICD-10 however, the codes used will provide specific details including: initial or subsequent encounter, if subsequent encounter, the cause (delayed healing, malunion, non-union), the exact bone(s) that are fractured, the side of the body where the fracture is located, whether it is a non-displaced or displaced fracture, and whether it is a closed or open fracture.
5. Benchmarking and trending measures will be difficult to determine during the transition period based on the factors noted above.

These considerations should be factored into any contracting or pay-for-performance payment models that may be considered during the next several years.

## Analytics and Research

ICD-10 will affect your hospital’s research activities. Evaluate all processes dealing with research or clinical trials to determine how the ICD-10 transition will affect them.

**Table 12** identifies how ICD-10 may affect research activities in your hospital.

**Table 12: Research Impacts**

PROCESS	SUB-PROCESS	DEFINITION	ICD-10 IMPACT
<b>Data warehouse processes</b>	<ul style="list-style-type: none"> <li>• Data architecture</li> <li>• Data aggregation models</li> <li>• Crosswalk structure</li> <li>• Data validation</li> <li>• Data dictionary and data file specifications</li> <li>• File imports</li> <li>• File export</li> <li>• System data access interfaces</li> </ul>	Input, storage, and output of data to support all operational and analytic business functions.	<ul style="list-style-type: none"> <li>• Update all code reference tables to support both ICD-10 and ICD-9 with date of service and date of discharge validation rules</li> <li>• Educate IT and analyst staff</li> <li>• Update file specifications</li> <li>• Update data dictionaries</li> <li>• Update data validation</li> <li>• Update input and output data rules</li> </ul>
<b>Analytic interface</b>	<ul style="list-style-type: none"> <li>• Dashboards</li> <li>• Other aggregation or individual code system displays</li> </ul>	User system interfaces that provide information used to analyze business processes.	<ul style="list-style-type: none"> <li>• Update all aggregation intelligence built into interfaces to ensure proper reporting due to the increased level of detail in ICD-10</li> <li>• Update all documentation and support materials for ICD-10</li> <li>• Test all analytic solutions</li> </ul>
<b>Report definition</b>	<ul style="list-style-type: none"> <li>• Standard reports</li> <li>• Ad hoc reports</li> </ul>	Reports delivered by data warehouses and data marts for accounting and receiving, prescription volume, categories of illness and treatment, and malpractice.	<ul style="list-style-type: none"> <li>• Update existing data warehouse and data mart interfaces and reports with ICD-10 codes</li> <li>• Train staff</li> </ul>
<b>Trend analysis</b>	<ul style="list-style-type: none"> <li>• Identification of data sources to be analyzed</li> </ul>	Analysis of data over time.	<ul style="list-style-type: none"> <li>• Update existing interfaces and reports with ICD-10 codes and ensure capability to capture increased level of detail for trend analysis</li> </ul>
<b>Crosswalks/mapping</b>	<ul style="list-style-type: none"> <li>• Reporting</li> <li>• Analytics</li> <li>• Trend analysis</li> </ul>	Diagnosis code/service-driven ICD research used to support research and evaluate trends.	<ul style="list-style-type: none"> <li>• Establish how to incorporate data searches for specific diseases/ grouping across the ICD-10 implementation date</li> </ul>
<b>Clinical trials</b>		Includes internal clinical research or contracting with drug companies to administer and report on patient responses and external research conducted by clinicians who are part of a university- or hospital-based research project.	<ul style="list-style-type: none"> <li>• Patient eligibility for programs may vary based on ICD-10-CM codes</li> </ul>

## Medical Staff Functions

ICD-10 will affect administrative functions in your hospital. Use **Table 13** to determine the level of ICD-10 impact.

**Table 13: Administration**

PROCESS	AREAS	DEFINITION	ICD-10 IMPACT
<b>Medical staff functions</b>	<ul style="list-style-type: none"><li>• Hospital-based</li><li>• External staff</li><li>• Medical director</li><li>• Physician credentialing</li><li>• Physician recruitment</li><li>• Assignment of physician privileges</li></ul>	Administrative tasks concerning hospital-based physicians and external medical staff.	<ul style="list-style-type: none"><li>• Possible impact on procedure-specific credentialing and privileges</li><li>• Medical staff may have grievances about documentation requirements and increased physician querying</li></ul>

## Information Systems

Information systems support the processes identified in previous sections. There will be major ICD-10 impacts on many of these systems, including updates to all the components listed in **Table 14**. Additionally, you will need to establish mapping tools for cross-implementation date analysis.

**Table 14** shows the information systems affected by ICD-10, including:

- **Business Area:** The business area affected by ICD-10
- **Systems that Require Updating to ICD-10:** The systems within the business areas that are affected by ICD-10

**Table 14: Information Systems Impacts**

BUSINESS AREA	SYSTEMS THAT REQUIRE UPDATING TO ICD-10
Finance/revenue	<ul style="list-style-type: none"><li>• Main health information systems (HIS)</li><li>• Admissions/discharge/transfer and registration modules</li><li>• Readmission business logic</li><li>• Authorization modules</li><li>• Encounter, orders, and results interfaces</li><li>• Charge transactions</li><li>• Billing and accounts receivable</li><li>• Electronic data interchange (EDI) transactions</li></ul>
Health information management (HIM)	<ul style="list-style-type: none"><li>• Groupers and encoding software</li><li>• Abstracting software</li></ul>
Quality	<ul style="list-style-type: none"><li>• Risk management software</li><li>• Quality system software</li><li>• Infection control software</li><li>• Case/utilization management software</li><li>• Quality reporting</li></ul>
Clinical	<ul style="list-style-type: none"><li>• Clinical documentation templates including problem lists and physician notes</li><li>• EHR, including business rules and alerts</li><li>• Nursing documentation templates</li><li>• Order entry and order sets, including interfaces</li><li>• Results interfaces</li></ul>
Research	<ul style="list-style-type: none"><li>• Databases and data marts</li><li>• Business rules</li><li>• Search algorithms for disease groups</li><li>• Mapping tools for cross-implementation date analysis</li></ul>
Ancillary support	<ul style="list-style-type: none"><li>• Ancillary system databases, including cardiology, radiology, and laboratory</li><li>• Encounter, order, and result interfaces</li><li>• Charge transactions</li></ul>

**Figure 6** presents a high level systems diagram depicting potential impacts of ICD-10 on a generic hospital information system. The diagram highlights key data inputs, such as hospitals, clinics, and physician offices, in and out of network. The diagram captures data flow to and from major processing modules and key files within the hospital information systems and modules. It also displays key outputs including billing, health information, and results. An ICD symbol indicates potential ICD-10 impacts and ICDT refers to a text or paper file containing ICD-10. The diagram is meant as a general representation and not the actual environment for every small hospital.



To determine the technical impacts of ICD-10, develop or consult a complete inventory of your organization's internal and external systems and applications. Here is a partial list of systems that will need updates:

- Business rules and system edits
- Data structures, tables, and decision support systems
- System interfaces (inbound and outbound). Pay special attention to ADT, Order Entry, and results transactions as these key interfaces may include ICD-10 codes passed among your systems
- User interfaces
- Reports
- Field length adjustments
- Storage systems to allow additional ICD-10 occurrences within a transaction
- Historical data (your systems may require updates to support the collection and maintenance of both ICD-9 and ICD-10 and to maintain historical data)

Once your inventory is complete, you will also need to conduct a present and future needs analysis to identify technical requirements necessary to support ICD-10 implementation.

## How ICD-10 Affects Clinical Documentation

The ICD-10 implementation will affect the clinical documentation your hospital provides to payer organizations. ICD-10 coding provides the opportunity for much greater accuracy in creating standardized data that describes the patient's condition. Accurate, detailed, and consistent data will greatly improve clinical decision-making, performance reporting, managed care contracting, financial analysis, and all other uses of data aimed at improving patients' health and the nation's health care system.

Increased code detail contained in ICD-10-CM means that required documentation will change substantially. ICD-10-CM includes a fuller definition of severity, comorbidities, complications, sequelae, manifestations, causes, and a variety of other important parameters that characterize the patient's condition.

A large number of ICD-10-CM codes only differ in one parameter. For example, nearly one third of the ICD-10-CM codes are the same except for indicating the right side of the patient's body versus the left. Thousands of other codes differ only in the way they distinguish among "initial encounter," versus "subsequent encounter," versus "sequelae."

For example, even though there are more than 1,800 available codes for coding fractures of the radius, there are only approximately 50 distinct recurring concepts. **Table 15** shows the type of documentation the ICD-10-CM will require for a fracture of the radius and includes the following:

1. **Category:** The category for the medical concepts that will need documentation
2. **Documentation Requirements:** The list of individual concepts that should be considered in documentation to support accurate coding of the patient conditions

**Table 15: Sample Documentation Requirements for Fractures of the Radius**

CATEGORY	DOCUMENTATION REQUIREMENTS
<b>Fracture Type</b>	<ul style="list-style-type: none"> <li>• Open</li> <li>• Closed</li> <li>• Pathologic</li> <li>• Physeal (Growth Plate) Fractures</li> <li>• Neoplastic Disease</li> <li>• Torus (Buckle) Fractures</li> <li>• Green Stick Fractures</li> <li>• Stress Fractures</li> <li>• Orthopedic Implant (fractures associated with)</li> <li>• Bent Bone</li> </ul>
<b>Healing</b>	<ul style="list-style-type: none"> <li>• Routine</li> <li>• Delayed</li> <li>• Nonunion</li> <li>• Malunion</li> </ul>
<b>Localization</b>	<ul style="list-style-type: none"> <li>• Shaft</li> <li>• Lower End</li> <li>• Upper End</li> <li>• Head</li> <li>• Neck</li> <li>• Styloid Process</li> </ul>
<b>Encounter</b>	<ul style="list-style-type: none"> <li>• Initial</li> <li>• Subsequent</li> <li>• Sequelae</li> </ul>
<b>Displacement</b>	<ul style="list-style-type: none"> <li>• Displaced</li> <li>• Nondisplaced</li> </ul>
<b>Classification</b>	<ul style="list-style-type: none"> <li>• Salter Harris I</li> <li>• Salter Harris II</li> <li>• Salter Harris III</li> <li>• Salter Harris IV</li> <li>• Gustilo Type I or II</li> <li>• Gustilo Type IIIA, IIIB, or IIIC</li> </ul>

**Table 15: Sample Documentation Requirements for Fractures of the Radius** *continued*

CATEGORY	DOCUMENTATION REQUIREMENTS
<b>Laterality</b>	<ul style="list-style-type: none"> <li>• Right</li> <li>• Left</li> <li>• Unspecified Side</li> <li>• Unilateral</li> <li>• Bilateral</li> </ul>
<b>Joint Involvement</b>	<ul style="list-style-type: none"> <li>• Intra-articular</li> <li>• Extra-articular</li> </ul>
<b>Fracture Pattern</b>	<ul style="list-style-type: none"> <li>• Transverse</li> <li>• Oblique</li> <li>• Spiral</li> <li>• Comminuted (many pieces)</li> <li>• Segmental</li> </ul>
<b>Named Fractures</b>	<ul style="list-style-type: none"> <li>• Colles'</li> <li>• Galleazzi's</li> <li>• Barton's</li> <li>• Smith's</li> <li>• Radial styloid fracture</li> </ul>

### ICD-10 Effects on Small Hospital Reimbursement

The transition to ICD-10 will result in changes to most hospital reimbursement models. The nature of these changes will vary based on each hospital's individual contracting arrangements. To identify the impact of revenue, begin by evaluating:

- The current denial process
- The current MS-DRG performance
- Two key thresholds under ICD-10, "Discharge, not final code" (DNFC) and "Discharge, not final billed" (DNFB)

**Table 16** identifies potential effects to hospital reimbursement that should be considered depending on existing contracting and reimbursement models.



**Table 16: How ICD-10 Affects Hospital Reimbursements**

COMMON REIMBURSEMENT ARRANGEMENTS	ICD-10 IMPLEMENTATION POTENTIAL EFFECTS
<b>DRGs and other case rates</b>	<p>ICD-9 diagnosis and procedure codes are the basis for DRG classifications. The process of redefining the MS-DRG grouper for ICD-10 resulted in changes in the grouper logic that may lead to unanticipated mapping errors as compared to the ICD-9 grouper experiences.</p> <ol style="list-style-type: none"> <li>1. The ICD-10-based MS-DRGs will likely produce different reimbursement results compared to ICD-9 based MS-DRGs due to: <ol style="list-style-type: none"> <li>a. Potential changes in coding due to new guidelines and code definitions</li> <li>b. Potential coding accuracy challenges due to unfamiliarity of coders with these new codes</li> <li>c. Mapping challenges</li> <li>d. Changes in Complications Comorbidities/Major Complications Comorbidities (CC/MCC) assignment may be different in ICD-10 and result in varying payment compared to similar conditions and services in ICD-9 codes</li> </ol> </li> <li>2. When applying CMS-designed ICD-10 MS-DRGs to a commercial population, MS-DRG assignment (i.e., case mix) may vary more than in a Medicare population.</li> </ol>
<b>DRGs/Inpatient care rate carve-out, pass-through or add-on technology procedure or diagnosis</b>	<ol style="list-style-type: none"> <li>1. Significant impact on inpatient coding due to changes in the definitions of inpatient procedures. There are also rule changes for processing that may look at both diagnoses and procedure codes.</li> <li>2. Outpatient Procedures (OP) are reimbursed based on Current Procedural Terminology (CPT) codes (where additional information is not needed to pay a claim). Diagnoses carve outs are typically paid by broad category with little reliance on coding specifics to differentiate payment levels.</li> </ol>
<b>Episode-based reimbursement (Used in demonstrations (ACE – Acute Care Episode) &amp; other pilots)</b>	<ol style="list-style-type: none"> <li>1. Episode grouper logic will need to be totally rewritten. There is no historical data to test grouping baselines, so reliable groupers for native ICD-10 may not be issued until 2015.</li> </ol>
<b>Performance-based reimbursement</b>	<ol style="list-style-type: none"> <li>1. Lack of comparability across codes will complicate reporting from historical data stores that contain both ICD-9 and ICD-10.</li> <li>2. Trending measures will be problematic since similar performance may result in different measure values based on ICD-9 versus ICD-10 codes.</li> </ol>
<b>Hospital-billed charges</b>	<ol style="list-style-type: none"> <li>1. Rev codes, CPT, HCPCS, and other outpatient-related codes are not directly affected by the transition to ICD-10; however, linkage to ICD-10 codes may factor into payment determination based on payer medical policy, adjudication rules, and benefit determinations.</li> <li>2. Future payments under value-based accountable care models are likely to leverage the increased severity identification in ICD-10 codes to adjust traditional fee-based models.</li> </ol>
<b>Inpatient rehabilitation facility prospective payment</b>	<ol style="list-style-type: none"> <li>1. Diagnosis codes are used to help determine the payment rate and whether facilities qualify as inpatient rehabilitation facilities (IRFs). The initial conversion to ICD-10 will have some effect on reimbursement based on the IRF-Prospective Payment System (PPS). The challenge will be in determining which ICD-10 codes are the qualifying codes that should be included in the IRF logic.</li> <li>2. The increased specificity of ICD-10 will influence the IRF-PPS model in the future.</li> </ol>
<b>Other reimbursement arrangements</b>	<ol style="list-style-type: none"> <li>1. Resource Utilization Groups: Minimal if any impact on Skilled Nursing Facilities (SNFs) and Resource Utilization Groups (RUGs).</li> <li>2. Home Health Resource Groups (HHRG): Although many of the HHRG diagnostic categories are broad, there will be some instances where HHRG assignment for the same condition may vary under ICD-10 compared to ICD-9 diagnosis codes.</li> </ol>

## Methodology to Evaluate ICD-10 Vendors and Tools

Any outside vendor your hospital uses plays an important role in a smooth transition to ICD-10. Hospitals depend on vendors to upgrade their systems, modify their existing programs, or provide support during the ICD-10 transition. Take time to evaluate upfront the impact of ICD-10 on your vendors, their performance capabilities, and their plans to update systems for ICD-10.

The following steps are important in both selecting new vendors as well as evaluating existing vendor capabilities in light of the ICD-10 transition.

1. **Create an inventory** of existing vendors, tools, and possible vendor candidates. The inventory should include the following components:
  - Unique identifier for the vendor
  - Vendor corporate name
  - Vendor product names
  - Description of the products offered
  - Type of products offered, including coding applications and search engines
  - Products' underlying logic, including GEMs and terminology engines
  - List of customers for each product
  - Vendor contact information
2. **Establish a tracking system** to ensure that you address and monitor key questions and concerns, and that the vendor meets project timelines.
3. **Identify “Plan B” options** in case your vendor does not progress fast enough, including operational workarounds and vendor replacement alternatives.
4. **Review contracts** to clarify existing vendor contractual requirements, and factor key requirements into contracts with new vendors.
5. **Analyze interfaces or dependencies between systems** to avoid failures from cross-system dependencies.
6. **Define acceptance criteria** to measure vendor performance. These may include the following:
  - Features matched to your business needs (this assumes a process to prioritize these features to meet the organization's specific functional priorities)
  - Appropriate customer lists and references
  - Comparable industry experience
  - Vendor financial and longevity stability
  - System architecture that supports integration with other systems and provides easy access
  - Alignment of workflow interfaces with organizational workflow
  - Expected results of testing against defined business and data test scenarios
  - Acceptable ongoing support commitments

7. **Ensure that vendor capabilities** meet your organization's expectations. Your contracting processes should consider:
- Functions of all required features
  - System performance requirements
    - Concurrent users
    - Throughput
    - Processing time
    - Reporting time
  - Upgrade policies (number of versions supported or latest version supported, along with number of upgrades per year)
  - Error remediation and new feature response requirements
  - Support requirements
    - Degree of support
    - Expected response time
  - Clear and acceptable licensing agreements
    - Business associate and data use agreements
    - Appropriate and adequate vendor insurance for:
      - Interruption of hospital business due to product or service failure
      - Federally mandated system changes
    - Automatic updates for standards version changes
    - Data and concept ownership
  - Remedies in the event of failure
    - Remediation requirements
    - Penalties
    - Disaster recovery requirements

### **Assessing Vendor Functional Capabilities**

Assuming you have assessed the functional needs of your hospital, you should match those needs with vendor capabilities. The list below identifies key functions to consider when evaluating vendors as well as questions to ask vendors in the evaluation process.

- **Code set maintenance:** Notification of updates, data files maintain valid beginning and end dates and change maintenance, and value add fields

- **Ability to search for codes**
  - **Robust term-based search:** The ability to search for codes based on terms defined within the code description. Includes the ability to search for multiple terms, partial strings with wild card and nested ‘and’, ‘or,’ and ‘not’ logic.
  - **Code-based search:** This includes the ability to search by multiple code ranges as well as multiple individual codes. It should also support partial code searches or searches for characters in different positions. For example the ability to search for codes with the first three characters = ‘nnn’ and the 7th character = ‘n’.
  - **Tabular-based search:** The ability to search for codes based on the published tabular index.
  - **Alphabetical index search:** The ability to search for codes based on the published alphabetical index.
  - **Concept-based search (evolving vendor capability):** The ability to search based on clinical concepts, for example, the concepts of “fracture,” “distal,” and “radius” and identify codes for “Colles,” “Smith’s,” and “Barton’s” fractures since these are fractures of the distal radius. This search ability requires considerable sophistication in the underlying data engine. Current vendor ability to support this level of concept searching appears limited.
  - **Speech recognition search capability (potential vendor capability)**
  - **Built-in ICD-9 to ICD-10 crosswalk (potential vendor capability)**
- **Definition of code set aggregation or grouping:** Most policies, rules, and analytics are based on groups or categories of codes. These groups of codes are critical to drive business intelligence and business decision algorithms for many health care information systems. Features necessary to support this effort of redefining code based policies, rules, and categories include the following:
  - **Code set aggregation database system:** The ability to support an unlimited number of aggregation schemes and ad hoc aggregation sets for selected purposes. The database must support appropriate metadata for each aggregation set and scheme. In other words, once you create and define groups of codes, there must be a way to manage and retrieve those groups for any number of purposes. The metadata needed to accomplish this include:
    - A name for the aggregation or set of codes
    - A definition of the intent of the code set
    - A unique identifier for the code set
    - Data about versioning, modification, access, and approval
    - Other metadata as needed that will help manage create, read, update, and delete function for the code set files

- **Workflow:** Workflow capabilities should include research and identification of the appropriate grouping of codes, an approval process and maintenance interface, and the ability to name, date, and apply other metadata to the set of codes for use in downstream analysis and algorithms. Some basic workflow steps might include:
  - Definition of the purpose and intended uses of the code set
  - Searching for the appropriate codes to include or exclude in the data set by terms, concepts, tabular listings, index listings, code value searches, or any number of other parameters
  - Naming and cataloging the code set for use in rules, policies, and analytic categories
  - Creating the link between these defined codes and rules, policies, and categories
  - Retrieval and modification of existing code sets
  - Approval processes
- **Analytics:** Analytics that use ICD procedure and/or diagnosis codes will change dramatically under ICD-10. Any software vendors that provide business intelligence solutions should support ICD-9 and ICD-10 codes simultaneously during the transition. Additionally, business intelligence schemas should support 'n' number of ICD codes per record with a definition of code type (ICD-9 or ICD-10). Any defined reporting models such as quality (HEDIS), efficiency (episode groupers), population risk models, or other aggregation schemes should be fully remediated to support native ICD-10 as well as native ICD-9 codes.
  - Considerable research will be required to ensure that defined categorization models are appropriate for both the ICD-9 and ICD-10 environments. There should be a clear definition of the plan for fully using ICD-10 analytic capabilities in future releases.
- **Database structural requirements:**
  - Will the database support the increased number and length of codes supported in the 5010 claims transition?
  - Will the database support both ICD-9 and ICD-10 codes simultaneously?
  - Does the database include a "Code Type" field that can distinguish between ICD-9 and ICD-10 codes?
  - How will code set updates be managed? (An initial code freeze will be effective until October 1, 2014, but updates will occur after this date.)
- **User interfaces:**
  - Have captions and field validations been updated to support ICD-10? (i.e., Screens have been expanded to capture the increased length of ICD-10 diagnosis and procedure codes.)
  - Have user interface data sources for ICD-9 and ICD-10 been updated?
  - Are there prompts and edits for date of service-based validation of ICD-9 and ICD-10 codes?
  - Will user interfaces support lookup and entry of both ICD-9 and ICD-10 codes?
  - How will user interfaces support the new documentation required for ICD-10 coding?

- **Inbound and outbound transactions:**
  - Has the vendor updated system support for outbound claims and other outbound transactions consistent with 5010 and ICD-10 standards, including date of service-based validation?
  - What is the vendor's plan for transaction testing across payers and other trading partners?
- **Internal system interfaces:**
  - Have interfaces between systems been updated to support ICD-10?
- **Testing:**
  - What is the vendor's testing plan, and how will it involve hospital coding and other staff?
- **Clinical decision support (CDS) and business rules:**
  - If clinical decision support systems are in place, what is the plan to update CDS logic?
  - Which other rules and edits are driven by ICD-9 and what is the plan for remediating those rules?
- **Measures and reporting:**
  - Which reports are affected by ICD-10 and what are the plans for updating reporting logic code-related categories?
  - If clinical reporting systems are used, how will vendors update these systems?
  - How will vendors update logic for quality and efficiency measures?
  - How will vendors handle reporting on historical data over the transition period?
- **Other key questions for your vendor:**
  - Beyond assessing functional capabilities, there are some additional questions to ask your vendor:
    - Will there be a charge for ICD-10-related updates?
    - Will training be provided for new ICD-10-related functionality?
    - How can issues be logged and how will they be addressed?
    - How often will code set updates occur and how will they be delivered?
    - Will you continue to support applications or are you discontinuing some products in the wake of the ICD-10 transition?
    - What is your roadmap for helping us extract the increased information capabilities of ICD-10?

## Scenario-Based Vendor Assessment

Simply asking your vendors about implementation planning and execution is not enough to prevent system failures during the ICD-10 transition. As a hospital, you need to develop clinical test scenarios to see how the system will work and to ensure that you get the results you need for your quality of care and business efficiency standards.

Steps in developing scenarios for vendor assessment:

1. Review existing hospital data to identify high-volume and high-revenue clinical areas. For example, if your hospital sees a high volume of patients with renal conditions, look at the typical procedures and activities associated with those patients.
2. Review the relevant codes in these common clinical areas to identify significant changes between ICD-9 and ICD-10 that could result in issues with coding or translation.
3. Create fictitious patient encounters in these areas. Include sufficient documentation to code and create claims for these encounters.
4. Based on these defined scenarios, walk through all typical system operations, including:
  - Patient assessment
  - Documentation (including EHRs)
  - Patient communications
  - Clinical decision processes
  - Referrals
  - Authorizations
  - Diagnostic and treatment orders
  - Internal and external scheduling
  - Eligibility
  - Data sharing
  - Billing/Claims
  - Payment
  - Reconciliation
  - Analysis
  - Quality measures
  - Other important functions of your hospital's operations
5. Identify all of the areas where the transition from ICD-9 to ICD-10 has implications, and determine the documentation requirements for successful transition.
6. Run these scenarios using documentation, codes, claims, and other artifacts to test each of your vendors' abilities to support your hospital.

## Implementation Phase

Once you have completed the assessment of your hospital's ICD-10 transition needs and you have planned for the tasks required to complete this transition, the next step is to determine what changes you need to make to your operations and systems in order to limit business risks and take advantage of opportunities.

Most hospitals depend on their vendors to provide support for the ICD-10 transition. However, you should not assume that your vendors will address the effects of the ICD-10 implementation on key functional areas, including:

- Patient registration
- Clinical documentation/health records
- Referrals and authorization
- Coding
- Order entry
- Billing
- Reporting and analysis
- Other diagnosis-related functions, depending on the nature of the hospital

You must verify that the vendors you depend on are prepared to meet your critical ICD-10 transition needs.

## Operational Implementation Activities

The operational implementation strategy you developed earlier during the assessment phase provides direction for the operational implementation activities. The strategy addresses the method and approach to actually implementing ICD-10 within your organization. This strategy also addresses the methodology the hospital has selected for mapping ICD-9 codes to ICD-10 codes and the reverse.

The operational implementation phase of the ICD-10 transition process will include the following key activities:

- Determine your vendors' capabilities to install their updated systems for ICD-10 by October 2014
- Coordinate update of internal policies affected by ICD-10
- Coordinate update of internal processes affected by ICD-10, including clinical, financial, actuarial, and reporting
- Finalize system and technical requirements
- Coordinate update of identified test data requirements
- Coordinate update of approved code design to remediate system changes/updates
- Coordinate and conduct testing based on updated system logic



## Resources Available to Ease ICD-10 Transition

**Table 17** identifies some of the industry tools available to hospitals. Please note that the list is not exhaustive nor does it indicate a partnership between CMS and any particular vendor.

**Table 17** contains the following elements:

- **Resource:** The entity providing the tool (e.g., AHIMA, WEDI)
- **Service(s) Provided:** The services the tool or vendor provides
- **Stakeholders:** Stakeholders within the hospital that might benefit from the tool

**Table 17: Industry Tools for Hospitals**

RESOURCE	SERVICE(S) PROVIDED	STAKEHOLDERS
<b>Healthcare Information &amp; Management Systems Society (HIMSS) ICD-10 Cost Prediction Modeling Tool</b>	<ul style="list-style-type: none"> <li>Assists users in predicting the financial impact of the ICD-10 transition.</li> <li>Developed in Excel. Helps users understand the impact of ICD-10 in four key areas: coding, revenue cycle, project management, and information technology.</li> </ul>	Health care providers and payer organizations
<b>HIMSS ICD-10 Playbook</b>	<ul style="list-style-type: none"> <li>Provides a rich, well-structured index to a variety of white papers and other resources from a variety of organizations.</li> </ul>	All stakeholders
<b>American Medical Association (AMA) – Educational Resources</b>	<ul style="list-style-type: none"> <li>A series of resources/artifacts to help physicians implement ICD-10-CM into their hospitals: <ul style="list-style-type: none"> <li>ICD-10 Fact Sheets</li> <li>ICD-10 Project Plan Template</li> <li>ICD-10 Checklist</li> </ul> </li> <li>Provides links to other associations and specific resources tailored to physicians' needs.</li> </ul>	Physicians, payer organizations
<b>American Academy of Professional Coders (AAPC) – ICD-10 Code Translator</b>	<ul style="list-style-type: none"> <li>Compares ICD-9 to ICD-10 codes. (Note: this tool only converts ICD-10-CM codes, not ICD-10-PCS)</li> </ul>	Medical coders primarily focused on the outpatient or professional side
<b>Workgroup for Electronic Data Interchange (WEDI) – Vendor Resource Directory and other resources</b>	<ul style="list-style-type: none"> <li>Provides an assortment of white papers related to ICD-10.</li> <li>Listserve and conference calls on various subject areas allow collaboration among different parts of the industry.</li> </ul>	All stakeholders
<b>American Health Information Management Association (AHIMA)</b>	<ul style="list-style-type: none"> <li>Focused on coding particularly in the inpatient environment with a strong focus on training</li> <li>A robust forum for listserve, webinars, conferences, white papers, communities of practice and a variety of tools to aid the ICD-10 transition</li> </ul>	Primarily inpatient coders, but substantial value for most stakeholders

## General Equivalence Mappings (GEMs)

General Equivalence Mappings (GEMs) attempt to include all valid relationships between the codes in the ICD-9-CM diagnosis classification and the ICD-10-CM diagnosis classification. The tool allows coders to look up an ICD-9 code and be provided with the most appropriate ICD-10 matches and vice versa. GEMs are not a “crosswalk;” they are merely meant to be a guide. Users should exercise clinical judgment when choosing the appropriate code or codes to map between ICD-9 and ICD-10 in either direction. GEMs are a very useful tool, but they are not a substitute for a complete system changeover to ICD-10.

For most hospitals, GEMs will be of limited use and may not be appropriate since coding should occur directly to ICD-10 based on actual clinical documentation, rather than a mapping from existing ICD-9 codes. In some instances, GEMs can be helpful in validating your coding practices to help identify some codes in ICD-10 relative to existing ICD-9 for the purpose of training and validation but should not be relied on as the complete and final answer. That should be determined by the clinical assessment of the patient information directly and proper coding of the documentation related to that assessment.

Visit the CMS website at [www.cms.gov/ICD10](http://www.cms.gov/ICD10) for more information on GEMs.

## Testing Phase

Testing—the process of proving that a system or process meets requirements and produces consistent and correct results—is critical to successful implementation of ICD-10. Testing will ensure ICD-10 compliance across internal policies, processes, and systems, as well as external trading partners and vendors. In this transition it is important to remember that we are not just testing systems, we must also test business processes. The system may pass all tests to determine if it is operating to specification, but you still need to assess if the specification itself is correct.

After making ICD-10 changes to systems, your hospital will need to complete several types of tests. First, you may decide to complete individual component unit testing, system testing, and performance testing. Many of these tests will be similar to ones performed for other IT changes.

Second, you will need to complete specific ICD-10 end-to-end testing.

## CMS Pilot Test

**NOTE:** National Government Services (NGS), under contract to CMS, is developing a pilot test using ICD-10 as the business case, to validate a defined universal testing process that can be used throughout the health care industry. To learn more, visit <http://www.cms.gov/Regulations-and-Guidance/HIPAA-Administrative-Simplification/Affordable-Care-Act/End-to-End-Testing.html>.

**Table 18** outlines the elements of end-to-end testing including test types, descriptions of the test, and key considerations.

**Table 18: End-to-End Testing**

TESTING TYPE	DESCRIPTION	KEY ICD-10 CONSIDERATIONS
<b>Unit testing/basic component testing</b>	Confirms that updates meet the requirements of each individual component in a system. Hospitals will first need to test each component updated for ICD-10.	<ul style="list-style-type: none"> <li>Unit testing should verify that: <ul style="list-style-type: none"> <li>Expanded data structures can store the longer ICD-10 codes and their qualifiers</li> <li>Edits and business rules based on ICD-9-CM codes work correctly with ICD-10</li> </ul> </li> <li>Since reports frequently use diagnosis and procedure codes, testing report updates are critical. Critical report elements to evaluate include: <ul style="list-style-type: none"> <li><i>Input filters:</i> Do all filters produce the anticipated outcome?</li> <li><i>Categorization:</i> Do categories represent the user's intent as defined by aggregations of codes?</li> <li><i>Calculations:</i> Do all calculations balance and result in the anticipated values considering the filter applied and the definition of categories?</li> <li><i>Consistency:</i> Do similar concepts across reports or analytic models remain consistent given a new definition of code aggregations?</li> </ul> </li> </ul>
<b>System testing</b>	Verifies that an integrated system meets requirements for the ICD-10 transition. After completing unit testing, providers will need to integrate related components and ensure that ICD-10 functionality produces the desired results.	<ul style="list-style-type: none"> <li>Plan to test ICD-based business rules and edits that are shared between multiple system components</li> <li>Identify, update, and test all system interfaces that include ICD codes</li> </ul>
<b>Regression testing</b>	Focuses on identifying potential unintended consequences of ICD-10 changes. Test modified system components to ensure that ICD-10 changes do not cause faults in other system functionality.	<ul style="list-style-type: none"> <li>The complexity of ICD-9-CM to ICD-10 code translation may result in unintended consequences to business processes. Identify these unintended consequences through varied testing scenarios that anticipate risk areas.</li> </ul>
<b>Nonfunctional Testing - Performance</b>	Performance testing includes an evaluation of nonfunctional requirements <sup>3</sup> such as transaction throughput, system capacity, processing rate, and similar requirements.	<ul style="list-style-type: none"> <li>A number of changes related to ICD-10 may result in significant impact on system performance, including increased: <ul style="list-style-type: none"> <li>Number of available diagnosis and procedure codes</li> <li>Number of codes submitted per claim</li> <li>Complexity of rules logic</li> <li>Volume of re-submission due to rejected claims, at least initially</li> <li>Storage capacity requirements</li> </ul> </li> </ul>

3. <http://www.csee.umbc.edu/courses/undergraduate/345/spring04/mitchell/nfr.html>

**Table 18: End-to-End Testing** *continued*

TESTING TYPE	DESCRIPTION	KEY ICD-10 CONSIDERATIONS
<b>Nonfunctional testing - privacy/security</b>	Federal and state legislation defines specific requirements for data handling related to conditions associated with mental illness <sup>4</sup> , substance abuse, and other privacy-sensitive conditions. To identify these sensitive data components or conditions, payers often use ICD-9-CM codes.	<ul style="list-style-type: none"> <li>• Update the definition of these sensitive components or conditions based on ICD-10-CM</li> <li>• The definition of certain institutional procedures that may fall under these sensitive requirements will be significantly different under ICD-10-PCS</li> </ul>
<b>Internal testing</b>	Level I compliance indicates that entities covered by HIPAA can create and receive compliant transactions.	<ul style="list-style-type: none"> <li>• Transactions should maintain the integrity of content as they move through systems and processes</li> <li>• Transformations, translations, or other changes in data can be tracked and audited</li> </ul>
<b>External testing</b>	Level II compliance indicates that a covered entity has completed comprehensive testing with each of its external trading partners and is prepared to move into production mode with the new versions of the standards by the end of that period.	<ul style="list-style-type: none"> <li>• Establish trading partners testing portals</li> <li>• Define and communicate transaction specification changes</li> <li>• Determine the need for inbound and outbound transaction training</li> <li>• Determine the need for a certification process for inbound transactions</li> <li>• Determine the process for rejections and resubmissions related to invalid codes at the transaction level</li> <li>• Determine if parallel testing systems need to be created to test external transactions</li> </ul>

### Test Plan Implications

Your hospital may use a test plan to document the strategy and to verify that a business process and system will meet future design specifications. The test plan should do the following:

- Identify acceptance criteria based on the business and system functional requirements that were defined during the analysis/design phase
- Determine the business sponsor responsible for approving the scope of test plans

### Test Case Implications

Define test cases to ensure that the system updates meet your business requirements and that the system components function efficiently. Test case design should include both anticipated and unexpected outcomes. Test cases should also include high-risk scenarios. It is critically important that the business intent of the system process is well understood and that test cases are designed to assure that all aspects of that intent are met.

4. <http://www.dshs.state.tx.us/hipaa/privacynoticesmh.shtml>

## Test Data Implications

Test data ensures that several key system functions are producing data as expected and include data to:

- Validate (data validation)
- Trigger errors
- Test high-risk scenarios
- Test volume
- Test all types of domains and categories
- Simulate a standard environmental model over time
- Includes data content to test all aspects of the business intent
- Test comparisons, ranking, trending variation, and other key analytic models

## Error Testing

Testing will result in errors. Correcting the errors before the go-live date is the goal of the testing phase. Hospitals should include the following in their error testing plan:

- Multiple testing layers to support various iterations of re-testing in parallel tracks
- Effective detection and repair of blocking errors that limit testing activities
- An error-tracking system with standard alerts to report to stakeholders
- Prioritization model for error remediation designed to focus on business-critical requirements
- Set of acceptance criteria
- Model for reporting known issues
- Developing a schedule for fixing known issues in the future

## Internal Testing

Some larger hospitals develop and maintain internal systems that are not traditional commercial, off-the-shelf products (COTS). In these cases, the hospital takes on the ICD-10 implementation responsibility. Hospitals that choose COTS products should work directly with their vendor to monitor the testing process for their system. When creating testing scenarios, consider all of the usual testing requirements for any internal system undergoing significant architectural and system logic changes and focus on testing key business risks. Evaluate each technical area individually as well as integration testing across components including:

- Database architecture
- User interfaces
- Algorithms based on diagnosis or institutional procedure codes
- Code aggregation (grouping) models
- Key metrics related to diagnosis or institutional procedure codes
- All reporting logic based on diagnosis or institutional procedure codes

- Coordinate with your vendors as necessary to support testing execution and issue resolution
- Identify testing workflows and scenarios for your hospital that apply including use cases, test cases, test reports, and test data
- Identify a target date when your hospital will be able to run test claims using ICD-10
- Develop a project plan that recognizes dependencies on tasks and resources and prioritizes and sequences efforts to support critical paths

## External Testing

Your hospital should create an inventory of external organizations you exchange data with and should work with each vendor to coordinate ICD-10 testing to ensure a smooth transition.

In some cases ICD-10 submissions can be tested using your hospital's management software, clearinghouse, and payers all using the same data set(s) using ICD-10 codes for:

- 5010 transactions
- Outbound claims
- Inbound transactions/claim responses with clearinghouses/payers

## Examples of external testing areas include:

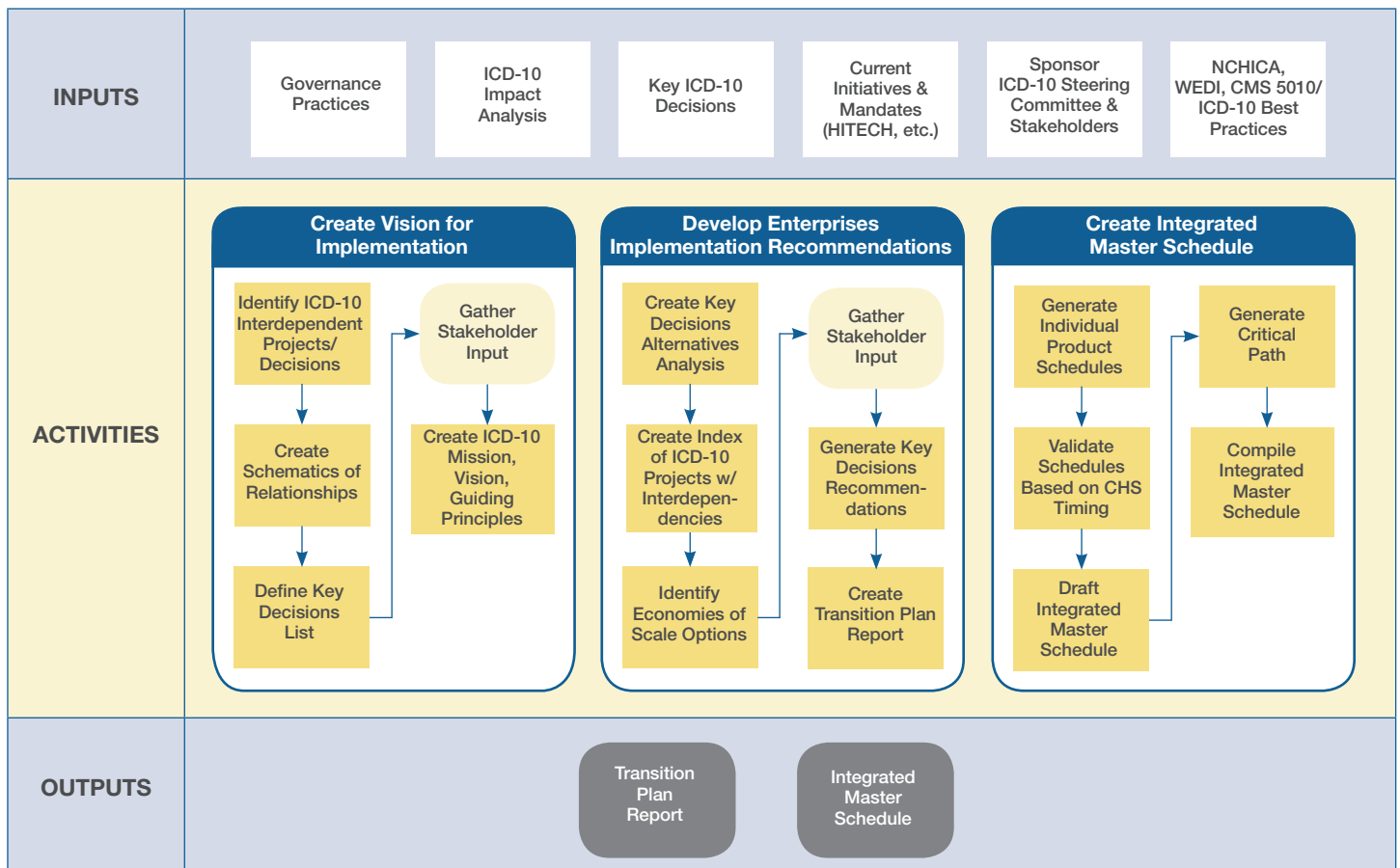
- **Payers:** Payers are critical to the financial viability of your hospital. Denials or payment delays may result in a substantial decline in revenues or cash flow. Payers may struggle with the ICD-10 transition due to the significant system changes needed to support policies, benefit/coverage rules, risk analysis, operations, and a host of other critical business functions affected by this change. Payer testing should identify and resolve any issues prior to go-live.
  - Determine if the payer has educational programs and collaboration efforts to support providers through the transition
  - Use the high dollar, high volume, high risk scenarios that your hospital has created to produce test claims
  - Work with the payers to look at end-to-end testing of your test scenarios through their systems to identify payment results
  - Communicate coding practices and scenarios to payers to build better relationships throughout the testing and transition process
  - Identify communication processes to identify and correct issues early with payers
- **Physician offices:** You will need to test your information exchange capabilities with physician offices to ensure that condition- or procedure-related information exchange is handled appropriately.
- **Health Information Exchanges:** Test all data exchanges to assure that information sharing continues as expected.
- **Outsourced billing or coding:** If your hospital outsources coding or billing, you will need to test with these defined scenarios in order to make sure these business operations continue as expected.

- **Government entities:** Local and national government entities may require reporting for a variety of purposes including:
  - Public health reporting
  - Quality and other metric reporting related to meaningful use
  - Medicare and Medicaid reporting and data exchange
  - Other mandated or contractually required exchanges of information around services and patient condition

## Transition Phase

Your hospital should develop a transition plan to monitor and track the ICD-10 implementation. The transition plan should include a master schedule that details all the tasks that will occur within the implementation. **Figure 7** describes the method for developing and implementing a transition plan.

**Figure 7: Transition Plan Method**



Source: Noblis, Inc.

During the transition period, your hospital should monitor the impact of the ICD-10 transition on your business operations and revenue. **Table 19** identifies a series of operational impacts and how your hospital may monitor and alleviate these impacts and includes the following columns:

- **Operational Impacts:** ICD-10 business impact or consideration
- **Description and Strategy:** Explanation of the impact and opportunities to monitor and alleviate the impact

**NOTE:** CMS and the Workgroup for Electronic Data Interchange (WEDI) plan to implement a process—similar to that developed for Version 5010 adoption—to monitor industry progress and be the point of contact for lessons learned and issues identified related to ICD-10 implementation. To learn more, visit the CMS ICD-10 website at [www.cms.gov/ICD10](http://www.cms.gov/ICD10).

**Table 19: Operational Impacts and Strategies for Monitoring**

OPERATIONAL IMPACTS	DESCRIPTION AND STRATEGY
<b>Problems with authorization and referrals; Claim delays or denials</b>	<p>Triggers and rules for evaluating prior authorizations and referrals are based on ICD-9 procedure and diagnosis codes. After the ICD-10 implementation, expect changes in payers' prior authorizations/ referrals or approvals as they refine medical policies.</p> <p>Hospitals may also see a significant increase in denials as a result of coding challenges the ICD-10 transition will present to both payers and providers. These denials may result from changes in payer remediation of medical policies. They may also occur after the transition due to refinements in processing rules based on the increased data ICD-10-CM codes provide.</p> <p>If payers rely on crosswalks to convert submitted ICD-10 codes to ICD-9 codes, there might be unintended consequences in processing those claims. Your hospital may be denied service payments or approval due to policy or rule misinterpretation because of code translation errors. To lower this risk, your hospital must coordinate and communicate with payers to understand their implementation strategies and identify workarounds for clinical scenarios.</p>
<b>Auditing, fraud and abuse</b>	<p>Audits of all types are increasing in depth and breadth, including Recovery Audit Contractors (RAC), Hierarchical Condition Categories (HCC), fraud, abuse, and others.</p> <p>After the transition to ICD-10, the increase in detail and specificity will result in greater examination of documentation. To address these concerns, your hospital should perform regular audits on clinical documentation during the post-implementation stabilization period.</p>
<b>Pay-for-performance</b>	<p>Value-based purchasing and overall trends in quality measurement and performance-based payment have considerable impact on the delivery system, and are expected to be an even bigger factor on payment in the future.</p> <p>Changes in the definition of these measures (specifically ICD-10-CM-related measures) will significantly affect both quality measurement results and target benchmarks.</p> <p>Hospitals will need to communicate directly with payers and clearinghouses to understand and identify trends in their clinical behavior because of ICD-10 implementation. This may also help reduce the consequences of failing to achieve performance-based payment goals.</p>
<b>Case rates, capitation, and other payment methods</b>	<p>Hospitals' participation in case rates, case mix adjustment, risk-adjusted or condition-related capitation, and other payment models may affect payment associated with the ICD-10 migration.</p> <p>Currently, there is little information to predict the extent of these impacts and whether they will be positive or negative. Nevertheless, hospitals will need to work with payers and clearinghouses directly to identify trends during the ICD-10 transition.</p>



**Table 19: Operational Impacts and Strategies for Monitoring** *continued*

OPERATIONAL IMPACTS	DESCRIPTION AND STRATEGY
<b>Accountable Care Organization (ACO) model</b>	<p>Accountable care requires disciplined spending management to ensure that payment is for the correct service for the correct conditions. ICD-10 will play a critical role in aligning the definitions of service and conditions because of the added detail of the ICD-10 codes.</p> <p>ICD-10 is critically important to the success of accountable care for a number of reasons:</p> <ul style="list-style-type: none"> <li>• ICD-10 codes are a mandated standard across the health care industry for reporting patient conditions and institutional procedures. The increased detail of ICD-10 codes will lead to the ability to identify and accurately predict risk based on severity, comorbidities, complications, sequelae, and other parameters.</li> <li>• ICD-10-CM will provide better analysis of disease patterns and improve public health.</li> <li>• ICD-10-CM will increase the ability to assign resources based on more detailed utilization analysis.</li> </ul> <p>In an effort to prepare for ICD-10 implementation and report on accountable care measures, hospitals will need to work with industry players to identify and align measures to ICD-10.</p>
<b>Value measurements</b>	<p>Measures of quality, efficiency, comparative effectiveness, and other care components differs significantly in the ICD-10 environment. The definition of the measures may change significantly based on the nature of the new ICD-10 codes and the new parameters of diseases and services that these provide. During the transition period, measures that look over multiyear windows may be significantly affected due to the mix of ICD-9 and ICD-10 codes in those historical data sets.</p> <p>In an effort to prepare for ICD-10 implementation and report on value measures, hospitals will need to work with industry leaders.</p>

**Table 20** includes several considerations to plan for the ICD-10 transition and includes:

- **Component:** Subject for consideration
- **Transition Actions:** Tasks hospitals may consider

**Table 20: Key Considerations for Transition Phase**

COMPONENT	TRANSITION ACTIONS
<b>Coding productivity</b>	<p>Assess the impact of decreased coding productivity on your hospital's accounts receivable status:</p> <ul style="list-style-type: none"> <li>• How long do you expect the decline in coding productivity to last?</li> <li>• What steps can you take to reduce the effect of decreased coding productivity? <ul style="list-style-type: none"> <li>— Eliminate coding backlogs before ICD-10 implementation.</li> <li>— Prioritize medical records for coding.</li> <li>— Provide coding staff with adequate ICD-10 education and provide refresher training immediately before the compliance date to improve confidence levels and minimize productivity declines.</li> <li>— Assess medical record documentation and implement any necessary improvement strategies before the ICD-10 transition.</li> <li>— Use electronic tools to support the coding process.</li> <li>— Use outsourced coding personnel to assist during the initial period after ICD-10 implementation.</li> <li>— Identify areas of weakness by evaluating productivity across coding, billing, and reporting functions. Consider training refresher courses to boost skill sets or build particular clinical scenarios that are limiting productivity.</li> </ul> </li> </ul>
<b>Coding accuracy</b>	<p>Assess the impact of decreased coding accuracy:</p> <ul style="list-style-type: none"> <li>• What is the anticipated effect on coding accuracy?</li> <li>• How long will it take coding staff to achieve a level of proficiency comparable to that with ICD-9?</li> <li>• What steps can your hospital take to improve coding accuracy? <ul style="list-style-type: none"> <li>— Assess coding knowledge and skills and provide an appropriate level of education.</li> <li>— Monitor coding accuracy closely during the initial implementation period and provide additional education as needed.</li> <li>— Identify areas of weakness by evaluating productivity across coding, billing, and reporting functions. Consider training refresher courses to boost skill sets or build particular clinical scenarios that are limiting productivity.</li> </ul> </li> </ul>
<b>Documentation Improvement</b>	<p>Assess the success of effort to improve documentation to support both good patient care and accurate ICD-10 coding</p>
<b>Contingency planning</b>	<p>A separate contingency for each high priority, potential failure point should be established to assure business continuity.</p>
<b>Impact of potential reimbursement</b>	<ul style="list-style-type: none"> <li>• Evaluate potential diagnosis-related group (DRG) shifts that may occur because of code changes.</li> <li>• Evaluate potential change in the evaluation of case mix or risk adjustments.</li> <li>• Communicate with payers about anticipated changes in reimbursement schedules or payment policies.</li> </ul>
<b>Contracted coding staff training needs</b>	<ul style="list-style-type: none"> <li>• Communicate with companies supplying contracted coding staff to ensure they have received the necessary education.</li> <li>• Ask for documentation confirming the extent of education and the qualifications or certifications of the educator.</li> <li>• Make sure they have the appropriate number of resources to meet your needs.</li> </ul>

## Go-Live

This section identifies the process you will use to prepare for going live, including:

- Confirming with system vendors
- Testing the baseline
- Identifying financial targets
- Preparing for productivity declines
- Continuing to assess quality

**Table 21** includes the following columns:

- **Task:** Subject for consideration
- **Actions:** Steps hospitals may consider

**Table 21: Go-Live Tasks and Associated Actions**

TASK	ACTIONS
<b>Confirm with system vendors</b>	<ul style="list-style-type: none"><li>• Identify and resolve issues as early as possible:<ul style="list-style-type: none"><li>— Identify the plan to report and resolve ICD-10 issues prior to production/go-live, begin monitoring one year before go-live</li><li>— Report resolution of system changes and upgrades</li><li>— Determine the appropriate level of ongoing-support</li><li>— Identify the point of contact should issues arise</li><li>— Resolve any identified problems, including testing failures or identification of business processes or systems applications affected by the ICD-10 transition but missed during impact assessment</li></ul></li></ul>
<b>Identify financial targets</b>	<ul style="list-style-type: none"><li>• Determine goals for:<ul style="list-style-type: none"><li>— Days not billed</li><li>— Claims delayed</li><li>— Claims denied</li></ul></li></ul>
<b>Prepare for productivity declines</b>	<ul style="list-style-type: none"><li>• Identify process to track financials/budget</li><li>• Establish trending information for performance tracking across staff for coding and billing</li><li>• Identify performance targets where possible as well as incentives to keep morale and productivity high</li><li>• Evaluate staff for retraining and additional communications and reminders</li></ul>
<b>Continue to assess quality</b>	<ul style="list-style-type: none"><li>• Assess medical record documentation quality with respect to demands for increased detail</li><li>• Establish processes to ensure necessary documentation</li><li>• Implement documentation improvement strategies as needed</li><li>• Monitor the effect of documentation improvement strategies</li></ul>

## Ongoing Support

During the transition, vendors will be expected to monitor ICD-10 implementation and assist in troubleshooting and resolving post-implementation issues and problems promptly. Your organization may also use vendors to perform evaluations to identify areas to enhance and develop recommendations for improving data quality.

## Potential Ongoing Support Issues with Vendors

Hospitals can take the following steps to anticipate potential vendor issues during go-live:

- Monitor systems functions and correct errors or other identified problems as quickly as possible; implement contingency if needed.
- Monitor coding accuracy and productivity and implement strategies to address identified problems, such as:
  - Additional education on the ICD-10 code sets, biomedical sciences, pharmacology, or medical terminology
  - Additional efforts to improve the quality of medical record documentation
  - Additional coding professionals to assist with coding backlogs or reviewing claims denials and rejections
- Monitor the ICD-10 transition's impact on reimbursement, claims denials and rejections, coding productivity and accuracy, and interact with payers as needed to:
  - Assess reimbursement impact of the ICD-10 transition, monitor case mix and reimbursement group assignment (e.g., DRGs, Home Health Resource Groups), and provide appropriate education to staff members about reimbursement issues
  - Work closely with payers to resolve payment issues (e.g., claims denials and rejections)
  - Analyze changes in reimbursement index
  - Concurrently review reimbursement groups and diagnosis and procedure code assignments
  - Analyze shifts in reimbursement groups
  - Communicate with payers about anticipated changes in reimbursement schedules or payment policies
  - Provide education and feedback regarding reimbursement issues to appropriate personnel

## Potential Payer Interaction Issues

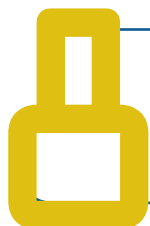
Use the following list to help your hospital monitor and manage potential payer issues during go-live:

- Determine how the ICD-10 transition has affected reimbursement. Monitor case mix and reimbursement group assignment (e.g., DRGs, HHRGs), and provide appropriate education to staff members about reimbursement issues.
  - Work closely with payers to resolve payment issues such as claims denials and rejections
  - Analyze changes in case mix index
  - Review case mix or reimbursement groups and diagnosis and procedure code assignments concurrently
  - Analyze shifts in reimbursement groups
  - Communicate with payers about changes in reimbursement schedules or payment policies
  - Provide education and feedback on reimbursement issues to appropriate personnel

## Post-Implementation Audit Processes and Procedures

After the ICD-10 implementation, your hospital should review processes to confirm their effectiveness and sustainability. These include:

- Clinical documentation changes
- Coding practices and processes
- Revenue cycle processes and changes
- Other organization adaptations made during the transition



## Next Steps

### Next Steps

Using this ICD-10 implementation handbook as a guide, your hospital should now be ready to take the following next steps:

1. Establish awareness among your administrative and physician leadership involved in ICD-10 implementation. This awareness should focus on the breadth of ICD-10 impact across the industry and communicate a solid understanding of how this will affect business process, policy, and processes for your hospital. Attention should be directed toward implementation costs, budget available, staff training needs, and impacted vendor tools.
2. Identify an ICD-10 coordination manager who will create an inventory of key tasks for ICD-10 implementation and be in charge of monitoring the daily activities associated with the ICD-10 implementation including:
  - Developing an implementation plan and timeline
  - Conducting vendor evaluations, monitoring, and communication
  - Communication and awareness activities both internally and externally
  - Training needs assessment and identification
3. Identify vendor support needs for the ICD-10 implementation from vendors and health associations. In addition, identify other hospitals and agencies from which your hospital may seek advice, assistance, or materials.
4. In view of the transition date of October 1, 2014, comprehensively assess the progress that the organization had made versus the original 2013 timetable, identify areas in which it would have been behind schedule and integrate their completion, initiation or continuation in the 2014 timetable.

*This Implementation Guide was prepared as a service to the health care industry and is not intended to grant rights or impose obligations. The information provided is only intended to be a general summary. It is not intended to take the place of either the written law or regulations. We encourage readers to review the specific statutes, regulations, and other interpretive materials for a full and accurate statement of their contents.*

