ICD-10 Requires Operational Readiness Testing (ORT)

Traditional testing will fall short for ICD-10. That’s because ICD-10 is not just a technical upgrade, it is also a business process update.

To lead the necessary testing, experienced, exceptional Test Managers will be required. Implementation success will be advanced by securing a Test Manager now who can:

• Understand your technical environment.
• Develop a test strategy that balances risk against cost.
• Recognize the need for test data.

Traditional Testing Gap

Unit, Functional, System, Integration and User testing are traditional testing phases.

• Unit, Functional and System testing are performed within the IT development team.
• Integration testing involves cross-functional team involvement but still resides within IT.
• User testing involves having users of the developed IT solution test it within the context of the process activity.

Core testing is focused on reviewing the technology against the requirements. Only in User testing is testing considered within the context of the business activity. The business processes that do not rely on technology, however, are not subjected to testing. This is where Operational testing comes in.

Operational testing, alternatively and better known as Operational Readiness Testing (ORT), focuses on testing people, process and technology together. ORT also focuses on end-to-end testing — from the beginning of a process, across all process activities regardless of technologies, or lack thereof, to the process end-point. Testing job aids and standard operating procedures are included in ORT. Passing ORT signifies that the business or clinical process, and all supporting technologies, job aids and procedures, are ready.

Procedure testing investigates questions such as:

• Does an appropriate procedure exist?
• Has the procedure been updated?
• Does the procedure have the proper controls relative to the risks?

ORT does overlap with User testing. Therefore, careful planning of ORT and User testing can be combined to enhance efficiency and minimize redundancy.
Test Leadership

Too few testing functions perform a comprehensive risk assessment and then develop a test strategy commensurate with the risks identified. Many simply do not know how. Even more concerning, those in leadership roles charged with hiring Test Managers for ICD-10 will not know how to evaluate and rate a candidate for such a job. Deferring to generally recognized top performers can fall short if those performers don’t have the right experience, domain knowledge or mindset. Cross-functional/application team influence are key skills for any ICD-10 Test Manager. The Test Manager will have to be creative without compromising test objectives because the Test Manager will have to integrate many disparate systems teams and constraints (see Test Environments below).

Test Data

There is no ready ICD-10 test data. Teams that normally conduct testing within the organization will hit a wall when they go to test ICD-10 enabled upgrades with ICD-10 data. It may not be a simple matter of randomly generating ICD-10 diagnostic and procedure codes because of the semantic layer involved.

Today’s ICD-9 test beds are mainly (and perhaps exclusively in some organizations) drawn from production data. Imbedded in the data is a semantic correlation between diagnoses and procedures. For example, someone diagnosed with diabetes but having a procedure to correct a hernia would trip all sorts of medical necessity triggers. In today’s claim processing environment, these types of mismatches trigger requests for clarification.

The relationships between diagnosis and procedure codes and between gender and diagnosis/procedure codes is built into today’s production data via correct coding and edits in the applications that prepare the claims. However, what happens when the codes for both diagnosis and procedure codes completely change and there exists no map between them?

The “semantic layer” to the test data described above works with those applications where semantic layer checks are performed. For example, if a test objective is simply to ensure that ICD-10 data is populating a screen correctly or that an interface can move ICD-10 data from one application to the next, then randomly generating ICD-10 data probably will work fine. However, if testing converted ICD-10 business rules/edits that check for semantic consistency is the objective, the test data will have to be carefully engineered/defined for every semantic layer/business rule test. This will rely heavily on the given organization’s specific “crosswalks.” However, these crosswalks are not the crosswalks between ICD-9 and ICD-10, but between ICD-10 diagnosis and procedure codes. This nuance will affect payers in their adjudication engines as they stall payment of claims that trip medical necessity triggers. It will also affect providers via the edits that flag these same claims before they become a submitted claim.

If left unmanaged, the situation described above will force individual application teams to design/engineer their own test data for EVERY application. This can
(and is expected to) become time consuming and a lost opportunity for cost containment. Organizations should consider establishing an ICD-10 Test Data Lead role under the ICD-10 Test Manager to coordinate ICD-10 test data across the organization. This will pay dividends in two areas: 1) It will serve the ICD-10 program with a single consistent and cost efficient source of coordinated test data and 2) it will establish an ICD-10 test bed that will be required after 10/1/2013 until there is sufficient time for ICD-10 production data to be re-established and replace the designed/engineered test bed.

Testing Strategy

The applications upgrade strategy selected by organizations will, to a large measure, dictate test strategy. If a “big bang” approach is chosen, where applications are upgraded and tested for ICD-10 in one work plan, then testing will be constrained by interface partner testing readiness.

To eliminate this dependency, a two phase approach is recommended:

1) Phase 1: ICD-10 Compliant Code Base Implementation

Under this phase, the ICD-10 compliant version is tested only with ICD-9 codes and placed into production as soon as possible. IT organizations are well versed in these types of upgrades and existing test beds will support the required testing without alteration. IT teams will be constrained by the lack of availability of the ICD-10 compliant code set from the vendors and by the sheer number of upgrades they will need to perform. These teams may have to step out of their comfort zones to complete the overall schedule and perhaps implement the compliant versions sooner than is customarily done after release. The number of upgrades that need to be completed must be factored in so that all upgrades can be done and comprehensive end-to-end ORT testing completed on time.

2) Phase 2: ICD-10 Enablement

For execution purposes, this phase is divided into two parts:

a) Phase 2a – Enablement Analysis: Here an analysis is performed on the ICD-10 compliant version in Phase 1 above, only this time with components such as interfaces and specific ICD-10 functionality. Requirements are documented. Interface partner testing may or may not drive additional development activities such as up or down conversions depending on the interface partners Phase 2 schedule. This phase (Phase 2a) should be done in conjunction with or immediately after Phase 1 with the objective of utilizing the Phase 1 team to document these requirements by leveraging the knowledge they acquired through the Phase 1 implementation.

b) Phase 2b – Enablement Implementation: In this phase the requirements derived in the Enablement Analysis phase are implemented. Testing incorporates both ICD-9 and ICD-10 data. (The issues discussed under the Test Data section of this article are applicable here.) This phase can proceed immediately after Phase 1 and Phase 2a or can be delayed.
The phased approach above creates significant advantage by effectively decoupling the ICD-10 upgrade processes and maximizing program controls over the upgrade process. It also produces the advantage of moving the ICD-10 compliant versions into production as soon as possible, allowing them to stabilize under an ICD-9 data flow where they will remain until 10/1/2013.

Test Schedule
Depending upon the testing strategy adopted, coordinating test schedules will range in difficulty from moderate to complex. The test strategy described above will shift this difficulty toward the moderate side of the scale. IT teams need to coordinate their test schedules to complete Phase 1 and Phase 2 activities by the end of 2012, March 2013 at the latest. April through July 2013 should be reserved for ICD-10 end-to-end testing, including testing with critical trading partners. August through September should be reserved for any retesting or contingencies. Additionally, organizations should consider implementing a change control “black-out” period during this time to a) preserve the integrity of end-to-end testing results and b) prevent the reintroduction of issues through new code additions.

Test Environments
The last but perhaps most challenging part of ICD-10 testing will be the procurement of ICD-10 test environments. Program managers may assume they will be able to secure dedicated environments solely for ICD-10 development and testing. However, experience has shown that this will not be a reality since standalone development/test environments are costly and place additional workload on already stretched supporting personnel. Additionally, there will be a number of development requirements waiting to go live after 10/1/2013. Sharing environments will not only be a necessity, it will facilitate this testing. Furthermore, not all applications will have expensive development/test environments. This will force end-to-end (see ORT section) test planning as data moves through these applications. Finally, connecting all test environments just as they are in production is neither feasible nor cost effective. In these cases, the “sneaker net” will have to be employed between environments. While not sophisticated, it should work just fine, if planned and executed properly.

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