EHR Exam

Using Test Vignettes to Assess EHR Capabilities

Test vignettes help evaluate how EHR products handle common documentation needs.

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For those who are braving the EHR selection process, there is a great deal of guidance available on how to organize this difficult process. The steady advance of technical standards, functional standards, and product certification contributes much-needed help in compiling functional requirements. (These resources are also helpful to those who are looking to evaluate their current systems.) Organizations can also receive help in evaluating EHR systems through the use of testing protocols that apply established, professionally and legally accepted standards in the form of test vignettes.

Test vignettes . . . [AUTHORS: include a sentence or two here to explain what a test vignette is and how it is performed? (e.g., it's a script of a common healthcare transaction(s); a user sits down with a software system and follows the script, and evaluators judge how the system handles each task)]

In addition to highlighting important software features and functions, test vignettes also assist HIM staff and organization leadership compare the way the wide variability of EHR products handle key HIM functions. Vignettes also help illustrate how a provider's documentation policies and procedures may be reflected in an EHR they currently use or are considering for purchase.

About This Vignette

Test vignettes can be applied to any health record function. The vignette presented here tests an EHR system's ability to maintain a legal health record. The script focuses on evaluating functions pertaining to amendments, attestation, authorship, and nonrepudiation, as well as the auditing functions that support their integrity. Constructing the vigentte began with reviewing the core requirements of medical records as legal business records in a computerized environment.[1]

No one encounter will include the many functional challenges that this vignette contains. The vignette is not intended to be a typical encounter; instead it presents a test environment that includes a number of common challenges to the documentation workflows that occur in normal practice environments. The vignette does not include all variants that a testing protocol should measure in the course of an HIM-focused, due-diligence process. It is intended as a presentation of one type of testing for one set of critical functions. It is most appropriate as a script for a live or remote demonstration, but it might possibly serve as part of a request for information.

The scenario starts with a review of the context and the system functions being examined. It includes possible suggestions regarding general assurances required for a system's evaluation, especially when testing a system for possible purchase. The script of the scenario appears in the table. The organization will provide the vendor with the identification and system permissions of the users featured in the script. The analytic questions shown in red in the "observation" column help guide the evaluator's queries. (They are not intended as instructions for the persons working directly with the software or as questions for the vendor.) These questions address authorship, attestation, nonrepudiation, and auditing, seeking to identify the system's ability to:

→Track exactly who did what tasks and when
→Support changes in, and additions to, documentation that occurred during the course of an encounter by changing of authors
→Support changes in, and additions to, an encounter that have occurred after the encounter is attested (signed)
→Re-attest a re-opened encounter, including supporting documentation for the changes as an extraordinary event

Throughout the review, the utility of audit functions should also be noted—where the audit supports differentiation and where it may not, specific to the targeted areas for authorship, attestation, integrity, and amendments. The vendor should be requested to provide a printed copy of the audit report or audit views that substantiate the scenario events that require auditability. Evaluators should also note the required skill set and system security access level.

The objective here is documentation veracity, not speed. The vignette is one example of how testing protocols can be used to compare the ability of different systems to perform common HIM functions. ❖

Note

1. AHIMA. "Update: Maintaining a Legally Sound Health Record—Paper and Electronic." *Journal of AHIMA* 76, no. 10 (2005): 64A-L. Available online at www.ahima.org.

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Scenario: Testing Legal Functionality

Scenario Context

An established patient presents with a scheduled appointment for an annual physical. The patient already has PFSH, medications, labs, and radiology information in the system. The visit is in a primary care practice where staff trust is high, intake staff members have the discretion—in line with practice policies and procedures—to do common tests when deemed highly likely to be needed or as specifically established as standard operating procedure (e.g., U/A on a first-trimester pregnancy)

Purposes

1. Demonstrate system capabilities to support authorship and to demonstrate timeliness, attestation, and nonrepudiation
2. Demonstrate system business rules for building information using common convenience tools and the ability to differentiate the employment of these tools
3. Demonstrate amendment functions
4. Demonstrate appropriately detailed audit features and functions
5. Highlight how each product handles key documentation events and supports authenticity in the system's audit functions

Demonstration Requirements

1. System must be substantially the same as that generally installed at a client site.
2. A similar test run on a randomly chosen user site must yield substantially the same results.
3. System must support multiple user identifications within the same encounter. Each report should include, in a separate document if necessary, highlighted key information.
4. If the tested system has features or functions the vendor would like to emphasize for special notice or clarification, please include in a separate document, referring back to the test protocol to indicate the context of its relevance.
5. If an opportunity for a verbal explanation is requested, please provide the point of contact and a one-sentence indication for the need. Please note that this added information will not be considered part of the evaluation, testing, and verification process.
6. The report must include a printed copy of the output of the documentation, the version that would represent what would be sent in response to a request for a copy from another medical office or from a third-party payer.
7. The audit report must include a printed copy of the output of the audit and the steps necessary to produce the report.

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Scenario

Action	Observation
I. Intake—user 1	
A. Checks patient into the clinical workspace	
B. Updates allergies by adding a mild urticarial reaction to penicillin, treated at Hospital X's ED January 1, 2006	Can the system identify new information by user 1 in the encounter? Can the added allergy be identified in the system as associated with the encounter by date and user ID?
C. Documents vital signs: T/BP/P/R and weight	Does the system associate each data field input with user 1? Alternatively, are vital signs recorded in a table and is each new table a unique event that can be associated with a different user?
D. Documents presenting problem or chief complaint: annual physical	Does the system associate the information with the user 1 ID?
E. Documents basic HPI/ROS using the standard tools and functions within the system including those generally used by providers. (Please note separately if the system does not permit, under any setup options, a subset of intake users to employ the provider HPI and ROS tools). Within HPI/ROS:	
1. Identifies episodic fatigue and malaise or similar	
2. Identifies episodic visual blurring	
3. Identifies "no cardiac symptoms" as the patient reported item	Does the system separately identify or otherwise support the differentiation of information recorded as a "global" statement, or does it cue text that refers to specific findings?
4. Cues global "all other ROS items negative" function, if available	Does the system separately identify or otherwise support the differentiation of information recorded by a "global key" or aggregate documentation event? Does any coding accumulation in the background drive the same from aggregate documentation events (multiple system ROS documentation from a single key), or does coding accumulation differentiate individually selected from globally recorded events?
F. Removes ROS indication for "GI negative" and leaves it blank or null	If the system uniquely records global versus individual selection events, are the global events appropriately recorded as changed to unique events?
G. Orders a urinalysis	Does the system record orders by user?
H. Gives a tetanus immunization injection	Does the system record procedures by user? Does the system support reference to a standing order that legitimizes this as a task that can be undertaken by the intake staff?
I. Transfers encounter process to user 2	Does the system record user changes as an event or does it identify documentation events by user ID?
II. Provider signs into encounter—user 2	
A. Reviews PFSH records in system: no changes made	Does the system record "screen view" events where no changes are made? How does the system differentiate "review" events that support PFSH—does the user indicate an action to support that this event occurred? (Whether the system discriminates between "reviewed" as defaulted versus selected during an encounter is tested below.)
B. Reviews current medications: no changes made	Does the system record "screen view" events where no changes are made? How does the system differentiate "review" events that support medications review—does the user indicate an action to support that this event occurred? (Whether the system discriminates between "reviewed" as defaulted versus selected during an encounter is tested below.)
C. Reviews current allergies: notes the addition of new allergy	Does the system record "screen view" events where no changes are made?
D. Adds family history of PCN reactions	Does the system differentiate screen views from screen changes in the PFSH section?
E. Identifies new chief complaint not mentioned upon intake: abdominal pain	Does the system differentiate information input by multiple users?
F. Collects basic HPI for abdominal pain using standard functions in the system	Does the system differentiate information input by multiple users?
1. Occurrence irregular, occasional, not predictable 2. Associated with fatty meals 3. Located in the right upper quadrant, no radiation	

Scenario *cont*

Action	Observation
II. Provider signs into encounter—user 2	
G. Changes some of the information entered by user 1	Does the system preserve the original information recorded by user 1 and allow differentiation of user 1 and user 2 information?
1. Within vitals adds new, different BP reading	Does the system preserve the differentiation of information recorded by multiple users in all areas, including time of recording?
2. Within HPI/ROS: (a) Adds visual symptoms: episodic visual loss in right eye (b) Changes urinary from intake to indicate nocturia, twice per night (c) Leaves the rest blank or unchanged	Does the system preserve the differentiation of information recorded by multiple users in all areas, including time of recording?
H. Within physical exam, indicates positive and negative findings in at least five system exam areas including neurological, cardiovascular, and abdominal/GI using a mixture of positives and negatives. (Do not mention murmurs in cardiovascular examination.)	
I. Within physical exam, indicates skin/dermatological findings are all normal by a global key, if available	Does the system differentiate user input and, if "global key" documentation events are supported, how are they differentiated from unique selection?
J. Reviews the U/A result	Does the system differentiate user activities and how is clinical information review captured?
K. Completes the assessment or impression section	
1. Diagnosis: abdominal pain, possible cholelithiasis 2. Diagnosis: UTI	
L. Completes the plan section	
1. Diagnostic ultrasound of abdomen 2. Refer to general surgery 3. Patient instructed to call provider if fever, vomiting, worsening pain.	
M. Completes the documentation tasks and executes closing tasks and signature-equivalents.	How are closing events and signature events recorded? Identify in the accompanying report the steps undertaken by a user to execute a signature event. (Use screenshots if appropriate or helpful.)
N. If available, show how nursing or checkout staff can document any printed patient instructions after the encounter has been closed.	How are additional information events recorded? How are they identified as components of the encounter?
O. Provider recalls additional exam findings not documented; re-opens encounter to document ophthalmic exam and add to cardiac exam	How does the system record and differentiate the inputs from different authors made at different times? How are amendments supported and differentiated from the original, signed record? How are amendments connected to the original documentation? How are additions to documentation and to processes such as tests and referrals identified and preserved?
1. Adds PERRL, extra-ocular movements, inability to maintain lateral gaze, vision blurs 2. Adds funduscopic negative 3. Adds new cardiac finding: new systolic murmur, 3/6. 4. Adds new diagnosis: cardiac murmur, NOS 5. Adds new referral: cardiology 6. Adds new scheduled test: cardiac ultrasound	
P. Provider re-signs encounter	How does the system handle re-signature events and differentiate them from the original closing events? If the electronic medical record system is to be integrated or interfaced with a billing system, how does the documentation function interact with the billing system to avoid duplicate billing for the same event and to provide coding edits or corrections?