EXAMINATION/ASSESSMENT NOTES, GRAPHICS, AND CHARTS

CHAPTER OUTLINE

Workflow
Standards: Functional and Content
  Functional Standards
  Content Standards
Documentation
  Templates and Free-text Narrative
  Graphics and Charts

OBJECTIVES

Upon completion of the chapter, the student will be able to:

1. Describe the general workflow associated with a health care provider’s examination or special assessment activity.
2. Identify common sources for locating examination and assessment content standards applied to ambulatory practice settings.
3. Differentiate structured data from unstructured data by providing examples of each.
4. Explain why using templates to capture documentation in an electronic health record (EHR) is generally preferred over free-text narrative.
5. Describe the purpose and content of the growth chart.
6. Explain why graphing capability is seen as a basic functional criterion for an ambulatory EHR.

KEY TERMS

examination protocol
free-text narrative
graphic displays
growth chart
point of care
templates
7. Explain how the design of the data collection tools used to document examination and assessment findings in an EHR can affect the completeness and timeliness of the data in the patient record.

8. Describe how computer hardware choices and EHR workstation placement can affect the efficiency of the examination or special assessment activity.

Introduction

As a first step in their clinical interaction with a new or returning patient, each type of primary health care provider in an ambulatory practice setting engages in an examination or assessment activity. Results of the examination or assessment set the foundation upon which the health care provider makes decisions regarding additional diagnostic tests needed and/or appropriate treatment options to present to the patient. Well-designed EHRs support the examination or assessment methods of each type of health care provider and effectively guide the provider in thoroughly documenting an examination or assessment. As a result, well-designed EHR systems introduce efficiencies into the provider’s examination or assessment activity and improve the completeness of the provider’s documentation of findings.

Workflow

The specific focus of an examination or assessment as well as the detailed activities involved in the examination workflow will vary significantly based on the health care provider’s medical specialty (e.g., obstetrician, orthopedist, cardiologist) or professional discipline (e.g., physical therapy, occupational therapy, speech therapy). However, an overview of the general workflow for an examination or assessment visit to a health care provider is presented in Figure 7-1 (Bowman, 2005).

As described in Chapter 5, a patient’s visit begins with registration activities, during which personal identification data is collected from the patient (e.g., name, address, birth date) along with a statement regarding the patient’s reason for this visit. Then, in most instances, a medical assistant and/or nurse will ask the patient to explain the reason for the visit and describe any problems or symptoms being experienced. At that time, measurements of height, weight, blood pressure, temperature, and so forth will be taken as appropriate. All of that data is then documented in the EHR so it will be available to the primary health care provider conducting the examination or assessment. The provider will explore further the patient’s description of the current problem(s) being experienced (the “reason for visit” or the “chief complaint”). If the patient has been referred by another health care provider for an examination or assessment, the referral letter and/or the continuity of care record will also be available within the EHR for review. The patient’s description of the problem, the information in the referral letter, and the data in the continuity of care record are significant because they guide the health care provider in selecting a specific focus for the examination or special assessment. As a result, the health care provider will initiate

![Figure 7-1: General Examination or Assessment Visit Workflow](image-url)
a series of actions designed to gain a better understanding of the potential underlying causes of the patient’s problem. This may involve a full or partial review of systems, a full or partial physical examination, and obtaining additional data through various types of diagnostic tests. The data gathered from these activities—along with a review of the patient’s problem list, medication list, allergy list, and medical history (diagnoses and procedures)—allow the practitioner to establish a diagnosis and to begin treatment planning. In every case, the goal of the examination or special assessment activity is to further define the problem and move toward establishing an accurate diagnosis. Then the most effective plan of care can be presented to the patient based on the examination or assessment findings.

## Standards: Functional and Content

The various types of functional, content, and vocabulary standards that are applied to ambulatory EHR systems were introduced in Chapter 3. Examination notes, graphics, and display charts are specifically addressed by these standards.

### Functional Standards

Well-designed EHR systems function in ways that facilitate the review of existing patient data, the capture of new patient data, and the modification/updating of patient data by authorized health care providers. The Certification Commission for Healthcare Information Technology (CCHIT) functional criteria for ambulatory EHRs were introduced in Chapter 2. Table 7-1 presents a sample of the CCHIT criteria that are especially focused on how an EHR should support the health care providers’ examination activities.

### TABLE 7-1 Examples of Examination Associated Functional CCHIT Criteria for Certification of Ambulatory EHRs

<table>
<thead>
<tr>
<th>Functional Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC 1.2</td>
<td>Manage Patient History: Capture, review, and manage medical, procedural/surgical, social, and family history including the capture of pertinent positive and negative histories, patient reported, or externally available patient clinical history.</td>
</tr>
<tr>
<td>DC 1.2.1</td>
<td>The system shall provide the ability to capture, store, display, and manage patient history.</td>
</tr>
<tr>
<td>DC 1.2.2</td>
<td>The system shall provide the ability to capture structured data in the patient history.</td>
</tr>
<tr>
<td>DC 1.2.3</td>
<td>The system shall provide the ability to update a patient history by modifying, adding, removing, or inactivating items from the patient history as appropriate.</td>
</tr>
<tr>
<td>DC 1.2.4</td>
<td>The system shall provide the ability to capture patient history as both a presence and absence of conditions—that is, the specification of the absence of a personal or family history of a specific diagnosis, procedure, or health risk behavior.</td>
</tr>
<tr>
<td>DC 1.2.5</td>
<td>The system shall have the ability to capture history collected from outside sources.</td>
</tr>
<tr>
<td>DC 1.9.1</td>
<td>Manage Clinical Documents and Notes: Create, correct, authenticate, and close, as needed, transcribed or directly entered clinical documentation.</td>
</tr>
<tr>
<td>DC 1.9.1.1</td>
<td>The system shall have the ability to create clinical documentation or notes (henceforth &quot;documentation&quot;).</td>
</tr>
<tr>
<td>DC 1.9.1.2</td>
<td>The system shall provide the ability to display documentation.</td>
</tr>
<tr>
<td>DC 1.9.1.3</td>
<td>The system shall provide the ability to save a note in progress prior to finalizing the note.</td>
</tr>
<tr>
<td>DC 1.9.1.5</td>
<td>The system shall provide the ability to finalize a note—that is, change the status of the note from in progress to complete so that any subsequent changes are recorded as such.</td>
</tr>
<tr>
<td>DC 1.9.1.6</td>
<td>The system shall provide the ability to record the identity of the user finalizing each note and the date and time of finalization.</td>
</tr>
<tr>
<td>DC 1.9.1.7</td>
<td>The system shall provide the ability to co-sign a note and record the date and sign of signature.</td>
</tr>
<tr>
<td>DC 1.9.1.8</td>
<td>The system shall provide the ability to addend and/or correct notes that have been finalized.</td>
</tr>
</tbody>
</table>
Using the Electronic Health Record in the Health Care Provider Practice

Content Standards

As discussed in Chapter 4, there are numerous professional groups, governmental agencies, and accreditation organizations that have established standards regarding the content of health records. The Joint Commission, formerly known as the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), leaves the actual specification of the content required in an assessment to each accredited health care organization, but it does require that “the organization defines in writing the data and information gathered during assessment and reassessment” (2005). The Accreditation Association for Ambulatory Health Care (2005) specifies that entries in the patient record made at the time of an examination or assessment include:

- Chief complaint or purpose of visit
- Clinical findings
- Diagnosis or impression

The patient record content requirements specific to examinations or special assessment in the Centers for Medicare & Medicaid Services (CMS) Conditions of Coverage include:

- Identification and social data
- Pertinent medical history
- Assessment of health status and health need
- Physical examination
- Diagnostic and laboratory test results
- Physician orders
- Signatures of healthcare professionals involved (CMS, 2006)

In general, these Conditions of Coverage health record requirements are quite similar to the basic requirements set forth by other accreditation organization or licensing bodies.

In addition, each type of health care professional engages in examination or special assessment activities using an approach that reflects that profession’s unique type of practice and its established methods for evaluating clients. For example, an examination performed by a physician, physician assistant, nurse practitioner, or chiropractor is generally structured first to address the “chief complaint” of the patient and then to follow a standard set of examination steps (examination protocol) that specifically eliminate or confirm the potential underlying causes of the “chief complaint.” Using the information gained through this process, the health care provider

TABLE 7-1 (Continued)

| DC 1.9.1.10 | The system shall provide the ability to record and display the identity of the user who addended or corrected a note as well as other attributes of the addenda or correction, such as the date and time of the change. |
| DC 1.9.1.11 | The system shall provide the ability to enter free-text notes. |
| DC 1.9.1.12 | The system shall provide the ability to filter, search, or order notes by the provider who finalized the note. |
| DC 1.9.1.13 | The system shall provide the ability to filter, search, or order notes by associated diagnoses within a patient record. |
| DC 1.9.1.14 | The system shall provide the ability to capture patient vital signs—including blood pressure, heart rate, respiratory rate, height, and weight—as discrete data. |
| DC 1.9.1.19 | The system shall provide templates for inputting data in a structured format as part of clinical documentation. |
| DC 1.9.1.20 | The system shall provide the ability to customize clinical templates. |
| DC 1.9.1.22 | The system shall be capable of recording comments by the patient or the patient’s representative regarding the accuracy or veracity of information in the patient record (henceforth “patient annotations”). |
| DC 1.9.1.25 | The system shall provide the ability to graph height and weight over time. |

can arrive at a clinical diagnosis and then determine appropriate treatment options accordingly. Other independent practitioners, such as a physical therapist in an independent practice situation, will follow a similar examination or assessment process when a patient presents with a new health complaint.

In spite of some differences among health care providers in the focus and methods of doing examinations or special assessments, there are several similarities. Each type of health care professional begins with reviewing and updating an existing patient history or collecting a new patient history that commonly has medical/surgical, psychosocial, and family components (see Figure 7-2). Each type of health care professional includes a review of patient problems, allergies, and medications and collects updates on them. Each type also collects current vital signs (blood pressure, temperature, pulse, respiration, etc.; see Figure 7-3) and conducts a general physical examination (see Figure 7-4) of the patient to obtain much of the objective data that contributes to the practitioner’s examination or special assessment findings.

Often a health care provider, such as a physical therapist, may receive a client based on a referral for assessment and/or an order for some type of physical therapy treatment program. In that case, the physical therapist will focus on a more in-depth initial evaluation (assessment) of the patient in order to determine muscle strength in each of the extremities, stability and flexibility of all or selected joints, and so forth. The outcome from the assessment is a series of (short-term and long-term)
functional goals for the patient. A physical therapy treatment plan based on these short- and long-term goals is developed that reflects specific activities and a timeline for each activity; these allow the patient to achieve progressively the physical capabilities established in the physical therapy goals.

Much the same process as described for the physical therapist would be followed for an occupational therapist’s examination of a patient, which generally begins with an already confirmed clinical problem or referral diagnosis and then focuses on more in-depth assessments that specifically address, in this case, the patient’s ability to handle activities of daily living: cooking, dressing, bathing, cleaning, driving,
shopping, and so on. The outcome of an occupational therapist’s initial evaluation (assessment) is also a series of short-term and long-term functional goals for the patient together with an occupational therapy treatment plan.

Figure 7-5A and B and Figure 7-6A and B are examples from an EHR of the format and content reflecting initial evaluations or assessments from two different types of health care providers. When the data collection tools for documenting patient examination or assessment findings are being designed for the practice’s EHR, content standards relevant to that practice setting should be researched and then incorporated into the documentation tools, as appropriate.
Complete, accurate, and timely documentation of the findings from an examination or special assessment is an essential component of a health care practice's patient record system. A well-designed EHR system will assist the practice's health care providers to meet this expectation.

As explained in Chapter 3, having computer hardware and workstations that are selected to match the health care provider's documentation needs and that are appro-
appropriately installed or positioned in the examination room plays a major role in helping
the health care provider efficiently document in the EHR while interacting with or
caring for the patient; that is, documenting in the EHR at the point of care. Another
major factor in implementing an EHR that supports complete, accurate, and timely
documentation of examination or assessment findings is well-designed formats for
collecting the data from the health care provider. The CCHIT functional criteria for
ambulatory EHRs (CCHIT, 2007) require that the EHR “system shall provide the ability
to enter free-text notes” and “provide templates for inputting data in a structured
format at part of clinical documentation.” In addition, these criteria require that “the
system shall display numerical results in flow sheets and graphical form in order to
compare results.”

Templates and Free-text Narrative

It is certainly possible for a health care provider to document the subjective and
objective findings from a client examination or special assessment in free-text narrative
within the EHR. This can be accomplished by directly keying it into a specific
area of the EHR designed to receive typed text and scanned documents or by
dictating it and then having the transcribed report electronically fed into the EHR
in the area designated to capture such documents. People certainly enjoy reading
free-text narrative. Although EHR systems can accept, store, and display narrative
text, they are not yet capable of reading it. For example, vital signs data, allergies
listed, medications described, and laboratory test results stated within the body of a
transcribed narrative report cannot be pinpointed electronically and redisplayed in
the Vital Signs, Allergy, Medication or Lab Test display areas of the EHR. As a result,
such critical data may not be easily available to a health care provider who accesses
the EHR to check on a patient’s allergies, medications, vital signs, or lab test results.
In addition, data embedded in free-text narrative is not in a form that can be used by
the EHR system to trigger important alerts and reminders. (See Chapters 9 and 10 for
more information about EHR alerts and reminders.) It is thus not advisable to accom-
modate large amounts of free-text narrative in an EHR system, because such docu-
mentation limits the EHR system’s functional ability to display independent data to
the health care provider when and where it can be most useful. For this reason, when
an EHR system is implemented in a practitioner office setting, the practice group
should establish its own policies and guidelines specifying the types of situations
when free-text medical or clinical narrative text is acceptable.

To take full advantage of the capabilities of an EHR system, effective implementa-
tions involve the development and use of various types of general examination or
special assessment templates. These preformatted documentation guides are care-
fully designed to support each type of examination or special assessment situation
that the practice’s health care providers commonly perform. Each template contains
specific data fields that are required by the health care provider to document a com-
plete set of findings normally associated with a specific examination protocol. More-
over, the data fields are positioned within the template in a sequence that matches
the health care provider’s preferred examination or special assessment methods. Re-
fer back to Figures 7-4, 7-5, and 7-6 for examples of examination templates.

Each type of health care provider could have several available templates from which
to choose, with each template intentionally designed to support a specific type of
examination or special assessment. For example, one template could be a Newborn–
Six Week Examination; another template could be an Adult Annual Examination;
another could be a High-Risk Obstetric Examination. When the health care provider
selects a specific template to use during a patient visit, the provider is presented
with a structured set of data fields related to the patient’s problem; within each data
field, drop-down menus of common findings or free-text options are provided. As the
health care provider works through the data fields and makes appropriate selections or
free-text entries, the visit note is simultaneously constructed. Figure 7-7 depicts how
a visit note is developed through the selections made by the health care provider.
The subject of structured data elements and unstructured data elements was presented in detail in Chapter 3. When a health care provider documents examination or special assessment findings in templates, the data is mostly entered into structured data fields and may also be entered in some unstructured data fields with a limited character length. As a result, the data entered through structured data fields in templates is capable of triggering alerts and reminders. Also, structured data from the examination or assessment can be electronically deployed for viewing in other areas of the EHR (e.g., in vitals flow sheets, lab result flow sheets, problem lists, allergy lists, medication profiles). Over time, structured clinical data captured through templates and stored in the EHR database can be accessed for use in the practice’s management reporting systems to support its quality management efforts as well as its long-range business planning activities.

When a practice implements an EHR system, the development of templates is another critically important activity. Templates must be created to support the variety of types of examinations or special assessments commonly performed by each type of health care provider employed in that setting. In order to do this well, template development requires significant input from each type of practitioner. Input is needed to assure that each template is designed to help efficiently conduct and fully document each type of examination or special assessment performed in that practice setting.
Graphics and Charts

EHR systems are capable of providing graphic displays of any piece(s) of numerical data (height, weight, blood pressure, respiratory rates, laboratory test results, etc.) that has been entered into structured data fields within templates (see Figure 7-8). As indicated earlier in this chapter (see Table 7-1), ambulatory EHRs that are CCHIT certified are systems capable of displaying numerical results in graphical form to assist health care providers observe trends in clinical data and compare results over time.

A growth chart is another form of graphic display of numerical data that is commonly available in ambulatory EHR systems (see Figure 7-9). The growth chart is an important functional component of an EHR used in health care provider settings that serve pediatric patients—for example, family practice and pediatric specialists. The growth chart displays height and weight data that has been entered into the EHR through structured data fields within the physical examination template, vital signs template, or the growth chart itself. It shows the actual height and weight data points of a child as they compare to the expected height and weight data points for a child of the same age. This trended and comparative data allows the health care provider to easily monitor the child's physical developmental, identify developmental concerns, and initiate early interventions if necessary.

Summary

The examinations or special assessments conducted by health care providers in their practice setting establish a foundation from which treatment options and treatment plans emerge for a patient. Well-designed electronic health records (EHR) systems support the examination or special assessment methods of each type of health care provider. They also guide the provider to complete a thorough examination and to fully document both subjective and objective
findings. The large volume of structured data that can be entered into the EHR through well-designed templates makes it possible for the EHR system to generate a variety of patient-specific alerts and reminders and customized reports for both clinicians and administrators. There are situations where free-text narrative is an acceptable (and perhaps even a desirable) form of documentation for some examination or special assessment findings; in general, however, the majority of patient examination or assessment findings are best documented in an EHR using templates (structured data). Health care providers who spend much of their time in examination or special assessment activities will find that well-designed documentation templates in the EHR have the capacity to (a) enhance their productivity, (b) improve the quality of the data collected, which contributes to improved patient related communication among the health care provider team, and (c) improve the practitioner’s ability to carefully monitor and manage the patient’s health status over time.

FIGURE 7-9
Growth Chart from an EHR (Reprinted with permission of Cerner Corporation)

COMPUTER EXPLORATION

Using your MedWare Chart EHR software provided on CD with this text, and following the instructions in Appendix B, complete the MedWare Chart Computer Exploration Exercises associated with Chapter 7.

REFERENCES


REVIEW QUESTIONS

1. What is the purpose of the examination or special assessment performed by a health care provider when a client presents with a chief complaint or a referral diagnosis?

2. Why is it important for an EHR system to be easy for health care providers to use during an examination?

3. How can computer hardware choices and placement affect the efficiency of the examination or special assessment activity?

4. Why are templates composed largely of structured data fields preferable to free-text narrative for capturing examination documentation in an EHR system?

5. How does the design of the templates used to document examination findings in an EHR affect the completeness and timeliness of the data in the patient record?

6. What type of examination content do the CMS Conditions of Coverage require be included in the ambulatory practice's patient record?

7. What is the content and purpose of the growth chart?

8. Why is graphing capability seen as a basic functional criterion for an ambulatory EHR?