TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER
OFFICE OF BILLING COMPLIANCE

ELECTRONIC MEDICAL RECORD PLAYBOOK

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The information contained in this document is a resource for Texas Tech University Health Sciences Center (TTUHSC) to utilize during the on-going implementation of electronic medical record (EMR) systems at TTUHSC. It is to be stressed that the purpose of this document is to minimize the risk of liability due to improper documentation that can result in fraud/abuse liability, including False Claims Act liability and Civil Monetary Penalties. These laws impose liability/penalties if the provider knew or should have known that the claim was false. This knowledge factor includes acting in deliberate ignorance or reckless disregard of the truth or falsity of the information. Therefore, TTUHSC has a duty to conduct its activities (including EMR documentation) with due diligence and implement controls and standards to avoid the intentional or unintentional misrepresentation of information in the EMR that could be used to submit a claim. This document includes best practices as outlined by professional associations, the Center for Medicare and Medicaid Services (CMS) as well as lesions learned from other academic institutions that currently have EMR systems in place.

Some of the recommendations stated in this document will be the basis of future written compliance policies and procedures from the Billing Compliance Office (BCO).

A. EVALUATION AND MANAGEMENT (E/M) CODE SELECTION PROMPTS – USE OF EMR TO SELECT E/M

This is an important issue if the campus decides to use tools within the EMR system to identify the level of E/M code based on the provider's documentation in the EMR. Exclusive use of the 1995 or 1997 Documentation Guidelines (DG) for E/M services may not accurately reflect the true level of service provided. Also, the Compliance Office must establish certain parameters/guidelines for the proper use of code selection tools to ensure that E/M levels are coded based on medical necessity rather than the amount of documentation.

1. E/M CODE SELECTION TOOLS

Many vendors of EMRs tout that their EMR can save coding staff expenses with the E/M code selection feature which selects the level of E/M based on the provider's documentation. **DO NOT BUY INTO THIS!** An important aspect of coding E/M services is the medical necessity as it is supported by the documentation to code a particular level of E/M service. While a computer may calculate history and exam components, it cannot calculate medical necessity which must be taken into consideration for every encounter. These code selection

tools can create a trap for the unwary provider who relies solely on the code selector without evaluating the medical necessity supporting the reason for the visit (Chief Complaint) and the type of documentation in the EMR. DOCUMENTATION THAT IS NOT MEDICALLY NECESSARY MUST NOT BE COUNTED TOWARD THE LEVEL OF SERVICE.

a. Preventive Services (including well baby visits). Preventive visits have specific elements that must be completed, not based on medical necessity, but rather established criteria that may allow for the use of a one-click option to populate the medical record with the standard preventive service elements, with the provider taking responsibility for performing all of those elements that are documented via the EMR. This may be acceptable as long as the EMR allows the provider the ability to comment on any abnormal or unusual findings during the well visit exam.

b. Problem Focused/Sick Visits. E/M codes for problem focused/sick visits must ultimately be selected based on medical necessity, not on the volume of documentation in the EMR for that visit. Medical necessity is a cognitive process and cannot be easily quantified. Trailblazer, our CMS Medicare Advantage Contractor (MAC), has stated that medical necessity is based on the information captured in the History of Present Illness[1] (HPI). Trailblazer will be focusing more on ambulatory EMRs, especially looking for increases in higher levels of E/M services that may not be supported by medical necessity, thus resulting in higher levels of denials. The key to any payment under the Medicare program is that payment is only made for medically necessary services. Thus, it essential that someone objectively evaluate the E/M sick visit code selected by the EMR to confirm that it is supported by medical necessity based on the reason for the visit (Chief Complaint) and the provider's assessment/plan.

EMR SELECTION OF E/M LEVEL – POSITION OF THE BCO:

We will not approve any EMR system that does not require either the provider or coder to confirm that the selected level of a problem focused/sick visit E/M code is supported by medical necessity based on the reason for the visit and the documented assessment/plan of care. Copy-and-pasted or cloned documentation (see more details below) that is not medically necessary should not be counted towards the level of service billed. The lack of separate verification of the EMR selected code by the provider and/or coder can result in false claims liability if the level of E/M services selected by the EMR is not supported by medical necessity. The BCO will accept one-click options which fill in the entire criteria for a well visit provided there is the ability to comment on any unusual findings or elements not performed and the providers understand that their sign-off is an attestation that they provided the entire service, or in the case of residents and teaching physicians that the teaching physician was present and/or performed the level indicated; or supervised a Primary Care Exception (PEC) setting where applicable.

[1] Provider Outreach Education Material, "Tips for Preventing Most Common Evaluation and Management Service Coding Errors" at http://www.trailblazerhealth.com/Publications/Job%20Aid/tips%20for%20preventing%20most%20common%20e-m%20coding%20errors.pdf

2. E/M CODING PROMPTS

Some EMR systems include a feature that notifies the provider when one or more history/exam elements are missing that, if documented, would increase the level of E/M service. While EMR system prompts can add value by providing guidance and alert the provider to possible inconsistencies, it is important that controls are in place to minimize the risk of upcoding that would be considered fraud/abuse because the documentation does not accurately reflect the services provided, but is merely there to bill a higher code.

The Certification Commission for Healthcare Information Technology (CCHIT) has recognized the value of E/M code selection tools as a means of assisting the provider in calculating an E/M code from encounter based on data that has been entered into the system and to show the basis of the calculation. However, it would be inappropriate for the EMR to suggest that additional data be added for the sole purpose of increasing an E/M code level. In a final report to the Department of Health and Human Services, Research Triangle Institute (RTI) International set forth various recommendations to enhance data quality in the EMR, including E/M coding requirement 5.2, which states:

> Prompts that are driven by E/M administrative processes shall not explicitly or implicitly direct a user to add documentation. This does not apply for additional documentation for E/M levels already achieved, for medical necessity or for quality guidelines/clinical decision support[2].

E/M CODING PROMPTS – POSITION OF BCO:
The EMR can provide assistance in selecting the appropriate level of E/M codes based on documented clinical information. However, it cannot implicitly or explicitly prompt the provider to add documentation that is specifically aimed at increasing the level of E/M service for coding/billing purposes. Prompts would be acceptable to add documentation for E/M levels already achieved based on medical necessity or for quality guidelines (i.e., PRQI criteria) or clinical decision support.

3. 1995 VERSUS 1997 DG - WHICH WILL BE USED TO CALCULATE LEVEL OF SERVICE?

- The **1995 DG** for a Comprehensive Exam (Levels 4/5 for Office Visits and Consults and Level 2/3 for Hospital Admits) require 8 body areas and/or organ systems[3] for a general multi-system exam. Currently, there are no specific criteria to determine what constitutes a complete single organ exam under the 1995 DG and therefore limiting the EMR to 1995 DG may result in

[2] Recommended Requirements for Enhancing Data Quality in Electronic Health Record Systems, May 2007 at http://www.rti.org/pubs/enhancing_data_quality_in_ehrs.pdf
[3] Trailblazer's E/M pocket reference card states that 8 body areas or organ systems can satisfy the requirements under the 1995 DG for a comprehensive exam.
http://www.trailblazerhealth.com/Publications/Job%20Aid/coding%20pocket%20reference.pdf

lower levels for specialist providers (i.e., Cardiologists, Ophthalmologists, Obstetrician/Gynecologists, Orthopedic Surgeons).

- The **1995 DG** Expanded Problem Focused (EPF) and Detailed (D) Exam both require documentation of 2 to 7 body areas and/or organ systems. According to our Carrier[4], the difference between these two levels of service is not the number of body areas and/or organ systems examined, but the detail in which the examined body areas/systems are described. This will require evaluation by either the provider and/or coder to verify if the exam is sufficient in detail to support a Detailed Exam rather than an Expanded Problem Focused Exam. Our Carrier utilizes the 1997 DG to differentiate extended exams from limited exams and to define a complete single organ system under the 1995 DG.[5]

- Limiting the EMR to 1997 DG may not be advantageous to general practitioners and general internal medicine providers because the criteria for reaching a general multi-system exam are more stringent under the 1997 DG.

DG - RECOMMENDATION OF BCO:
The BCO follows CMS' standards, which are that either the 1995 or 1997 DG may be used to code E/M services. A way to do this would be to input both 1995 and 1997 DG into the EMR system and let the provider and/or coder select the Documentation Guideline that is most advantageous based on the specialty of the provider (i.e., that will properly identify the level of documentation based on medically necessary documentation).

A provider and/or coder must evaluate the E/M code level when the 1995 DG are used and the exam is 'Detailed" to verify that the exam is sufficient enough in detail to support that level of E/M code.

B. E/M TEMPLATES

One advantage of an EMR system is to free up provider time documenting routine information in the medical record. However, it is important that the EMR does not take over the documentation for the provider, but that the provider is in control of the type and extent of information available through the EMR system that needs be included in the patient's medical record for each visit to identify the actual services provided and the medical necessity of each service. The focus of the BCO is to encourage providers to use the information available through the EMR to customize the patient's medical record so that the integrity and accuracy of the information cannot be put into question, whether it is for billing purposes or patient care.

[4] Provider Outreach Education Material, "Tips for Preventing Most Common Evaluation and Management Service Coding Errors" at http://www.trailblazerhealth.com/Publications/Job%20Aid/tips%20for%20preventing%20most%20common%20e-m%20coding%20errors.pdf

[5] Trailblazer Web-based Training – Comprehensive E/M Coding, 2006.

1. EXPLODING ELEMENTS

This refers to the function where an E/M element is checked off as normal or negative which then prompts the system to document a complete element even though that level of service may not have been provided.

EXAMPLE: The provider selects GI exam and the patient's medical record automatically places in the medical record all GI descriptions, such as "abdomen soft and non-tender, normal bowel sounds, not distended, organomegaly", etc., with no further input by the provider even though the provider may not have examined all of those GI areas.

If the provider does not perform each of these elements or fails to delete those items not performed, it not only raises fraud/abuse risks, but also quality of care and malpractice liability concerns.

EXPLODING ELEMENTS – RECOMMENDATION OF BCO:

- The EMR should require that the provider verify and click on each item within a specific element, whether it be in the History, Exam or Medical Decision Making sections to ensure that the documentation is patient specific. The BCO will audit based on the chief complaint which should carry through to the type of information documented in the history and exam.

- Each campus should consider establishing a committee (to include the Billing Compliance Director) to review and approve EMR templates to ensure that they are not only accurate, but complete for purposes of capturing the necessary information and are populated based on patient specific information selected by the provider.

2. DEFAULTS TO NEGATIVE

Similar to the exploding elements, some EMR systems allow for all the items within an element (i.e., ROS, PFSH, Exam) to be recorded in the medical record as negative unless the provider specifically documents otherwise. This too can result in inaccurate or incomplete information in the patient's medical record.

DEFAULTS TO NEGATIVE – RECOMMENDATION OF BCO:
Each element of the patient encounter should be selected and verified by the provider for problem focused/sick visits. Preventive services may allow for all items within an element to be recorded as negative IF the template outlines those elements that must be performed by the provider in accordance with the Medicaid well visit, Medicaid Initial Preventive Exam and the CPT preventive visit criteria.

3. CLONED/COPY AND PASTE DOCUMENTATION

One feature of most EMR systems is the ability to copy and paste (i.e., clone) documentation from a previous patient encounter or from another patient's medical record. Cloned documentation refers to medical record documentation that is identical regardless of the patient involved; or in the case of the same patient, regardless of the date of service. EMR system methods that may exist include, among others: (a) copy and paste functions; (b) copy note forward; and/or (c) save note as template option. The transition to an on-line medical record in the VA system resulted in the growth of copying and pasting along with its attendant risks, including inaccurate information and larger records containing redundant information already located in the EMR[6].

Basically, the documentation looks acceptable until you compare it to other charts for the patient and/or created by the provider and they all look the same, except the name or date, as applicable, has been changed. This type of activity can lead to inaccurate and sometimes contradictory information in the medical record and raise questions as to the validity of the service provided.

Example #1:

Chief Complaint (Documented by Nurse): Nausea and vomiting for 3 days.

ROS (Copy and Pasted by Nurse from previous visit): No complaints of nausea or vomiting.

Example #2:

Patient was seen in the family medicine clinic for 4 visits over the course of 5 months. Each visit documents performance of a pap smear (due to copying and pasting of information from previous visits without reviewing the information).

Entries into the EMR must be patient and visit specific and contain the actual data collected by the provider based on medical necessity on that date of visit. Use of copy and paste functions from one note to another can lead to cloned documentation if the provider fails to update the information and make it specific to the patient for that date of service. Trailblazer has expressed concerns about the use of cloned documentation in the EMR setting.[7]

Another concern that arises with copy and paste functions (also referred to as "pull forward" function) is the ability to identify information that has been copied from another part of the record, not only to confirm the origin of the information (the author and date), but also to remind the provider that it needs to be reconfirmed and revised as necessary to accurately reflect the visit on that new

[6] Hammond, et al. "Are Electronic Medical Records Trustworthy? Observations on Copying, Pasting and Duplication" AMIA 2003 Symposium Proceeding. (2003): 269-273 http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=1480345&blobtype=pdf

[7] Trailblazer Bulletin, September 20, 2002.

date of service. Studies have indicated that providers who copy and paste information from a previous encounter (or another patient) have unwittingly or erroneously signed off/authenticated information that was duplicative, inapplicable and in some instances, erroneous or misleading.[8] A wrinkle in the academic setting is the potential ability of the Resident and/or Teaching Physician to copy a medical student's HPI, Exam or Medical Decision Making and paste it into the note to become part of the Resident's or Teaching Physician's documentation. (See C.2 below) This would be analogous to the Teaching Physician's linkage to a Resident's note in a paper record, but it is not acceptable for either the Resident or Teaching Physician to use the medical student's documented HPI, Exam or Medical Decision Making for patient care and/or billing purposes.

Another issue that can arise with the unregulated use of copy and paste functions is the inability to identify the original source of the information, thus creating legal and quality of care risks to the individual provider. The EMR must be able to identify all entries. Data pulled (copy and pasted) from other sources (i.e., previous visits, another patients record) should be identified within the medical record (i.e., different color font) and identifiable as to the author, source and original date of the copied/pulled information. CMS[9] and Texas Medicaid require that the documentation include the identity of the individual making the entry into the medical record.

AHIMA's Guidelines for EHR Documentation to Prevent Fraud includes a helpful resource (Appendix B) presenting good and bad cases of the copy and paste function to borrow data from another source[10].

CLONED/COPY AND PASTE – RECOMMENDATIONS OF BCO:
The BCO recognizes the value of allowing controlled copy and paste functions to ease documentation burdens for the provider. However, as outlined above, there must be specific policies, controls and audit trails in place to ensure that this function is not misused and/or abused, which could increase the risk of fraud, legal liability and poor quality of care.

- If copy and paste functions are available, there must be written policies and documented training on how that function can be used to ensure compliant and accurate documentation. The BCO should assist in providing this training.
- If copy and paste is allowed, the EMR system must have a way to identify the origin of the copy and pasted information, to include the original date and author of the pulled information as well as a behind the scenes audit trail.
- If copy and paste is allowed, the EMR system should require the provider to verify the accuracy and applicability of the information pulled in from another

[8] AHIMA, Guidelines for EHR Documentation to Prevent Fraud; http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1_033097.hcsp?dDocName=bok1_033097
[9] The Five Step Process (Trailblazer) http://www.trailblazerhealth.com/Publications/Job%20Aid/five-step%20process.pdf;
[10] Id, Appendix B

record to the current patient encounter and they must have the ability to modify as necessary to meet the current patient encounter needs for that date of service.

- Copy and paste functions should not allow the ability to copy and paste information from one patient's record to a different patient's record due to the risk of privacy breaches if PHI from the cloned documentation is not adequately removed.
- Copy and paste functions can be from a source document of common language provided it is made patient/visit specific as appropriate.
- We do not recommend allowing e-mail information to be copied and pasted into the EMR.

C. TEACHING PHYSICIAN DOCUMENTATION

1. EMR TEACHING PHYSICIAN MACROS

Recognizing the explosion of electronic medical record systems, in November of 2002 CMS specifically addressed use of computer generated macros by teaching physicians to personally document their participation/presence for E/M services involving residents. Specifically, CMS stated:

> In the context of an electronic medical record, the term 'macro' means a command in a computer or dictation application that automatically generates predetermined text that is not edited by the user.
>
> When using an electronic medical record, it is acceptable for the teaching physician to use a macro as the required personal documentation if the teaching physician adds it personally in a secured (password protected) system. In addition to the teaching physician's macro, either the resident or the teaching physician must provide customized information that is sufficient to support a medical necessity determination. The note in the electronic medical record must sufficiently describe the specific services furnished to the specific patient on the specific date. It is insufficient documentation if both the resident and the teaching physician use macros only.[11]

Since the macro substituting personal documentation of the teaching physician must be personally added to the medical record by the teaching physician, it is important that there be password protected access and entry into the medical record. It is important to ensure that only the teaching physician can add the E/M and/or time-based macros, both of which require personal documentation by the teaching physician. Since the EMRs are being developed for the ambulatory

[11] CMS Internet Only Manual, 100-04, Chapter 12, Section 100; http://www.cms.hhs.gov/manuals/downloads/clm104c12.pdf

setting, our focus will be on E/M macros being limited to use by the teaching physician only.

TEACHING PHYSICIAN MACROS – RECOMMENDATION OF BCO:

- Approved Macros: The Billing Compliance Office has approved teaching physician macros for TTUHSC EMR systems which are attached as Appendix A. These may be updated or revised from time to time. They should be used in any TTUHSC EMR system, with any requested changes pre-approved in writing by the Billing Compliance Officer and/or Institutional Compliance Officer.
- Teaching Physician Macros: The EMR must only allow the teaching physician to add the teaching physician macro for those services that must be personally documented by the teaching physician. This includes E/M services, time-based services, psychotherapy services, diagnostic services (along with any additional documentation required) via a secured password. In the hospital setting, it would also include anesthesia services and overlapping surgeries. These macros or supporting documentation cannot be added by residents or other office staff members. This will likely require role-based access to various areas within the EMR.

2. MEDICAL STUDENT DOCUMENTATION – BILLING ISSUES

While the medical student's documentation of clinical care is an important educational tool, the use of the medical student's documentation to support a billable service is very limited. The medical student's documentation of HPI, Exam or Medical Decision Making cannot be used to support an E/M service. Therefore, it is very important that the EMR system distinguish the medical student's documentation from that of the resident and/or teaching physician in determining the level of E/M services for billing purposes.

MEDICAL STUDENT DOCUMENTATION – RECOMMENDATION OF BCO:

The medical student's documentation of HPI, Exam and Medical Decision must not be captured (including any copy and pasted information by the resident and/or teaching physician) when determining the level of E/M service for billing purposes. The Billing Compliance Office audits will focus on this aspect of the EMR to ensure that billable E/M services are documented by authorized individuals.

D. OTHER DOCUMENTATION ISSUES

1. TIME-BASED CODES

Medicare has specific documentation requirements for time-based codes in the ambulatory setting. In particular the EMR should allow appropriate documentation of psychotherapy time as well as counseling/coordination of care when it constitutes more than 50% of the E/M service.

a. Counseling/Coordination of Care: When more than 50% of the provider's time is spent face-to-face with the patient, then the E/M level is selected based on time. In order to do this, the medical record must reflect the total time spent with the patient and describe the counseling/coordination of care activities[12]. In order to verify that more than 50% of the time was related to counseling/coordination of care activities, we strongly suggest that the provider also document the time spent in counseling/coordination of care activities. The best practice is to have the EMR not only prompt total time, but also time spent in counseling/coordination of care activities. While time in/time out is preferred, Trailblazer does not currently require it for documenting this type of time-based services, therefore, we will not enforce such a standard.

b. Psychotherapy Services and Prolonged Services: These services are billed based on time and therefore the medical record must reflect the time spent. Time should be reflected as time in and time out.

TIME-BASED CODES - RECOMMENDATION OF BCO:

a. Counseling/Coordination of Care: The EMR should have a location for the provider to indicate total time in the medical record along with a description box when counseling/coordination of care constitutes more than 50% of the time spent with the patient. We strongly favor also including space to allow the provider to document time spent counseling/coordinating care AND the total time along with the description box, such as:

"I spent [insert total time] with the patient, of which [insert time counseling coordination care] was devoted to discussing the following issues: [insert general description of items discussed]"

b. Psychotherapy Services and Prolonged Services: There should be a location in the EMR that allows the provider to document time-based services, such as psychotherapy and prolonged services, using a time-in and time-out methodology.

[12] 1995 and 1997 DG; http://www.cms.hhs.gov/MLNProducts/downloads/eval_mgmt_serv_guide.pdf

c. Teaching Physician: Only the teaching physician's time can be used to bill for services. It is important that only the teaching physician be able to enter time into the medical record when a resident is involved. There should be role-based access to ensure that only a teaching physician can enter time for time-based codes. See more details above on teaching physician issues in the EMR.

2. AUTHORSHIP

An EMR must allow various individuals to make entries into the record. This not only includes ancillary personnel who may document preliminary information such as demographics, chief complaint and vitals, but also corrections to the medical record. In such situations it is vital that the author of the documentation be tracked, retained and displayed. Systems with only a single authorization for a visit note may create compliance risks if there is no ability within the system to identify who the author is of each entry. This is especially true when the service is a shared visit involving care provided by both a non-physician provider (PA, NP, etc.) and a physician.

In its report to DHHS, RTI International recommends the use of date/time/user stamp identification for each entry and that this information is retained when data is entered into the medical record on behalf of the provider.[13] For example, the record should be able to distinguish between information obtained and entered by staff as opposed to information entered into the record by staff on behalf of a provider.

AUTHORSHIP – RECOMMENDATION OF BCO:
The EMR system must have some means of identifying the author and date of each entry into the patient's medical record. The EMR system should have a back-end audit trail to verify who entered each item into the medical record, including the date of such entry.

3. CORRECTIONS/AMENDMENTS AND AUDIT TRAILS

Amendments and changes to the medical record must be accurately reflected and traceable to avoid improper alteration of the medical record. Such corrections must be dated, timed and authenticated. After the encounter has been authenticated by the provider, there should be a mechanism to amend and/or change the record that can be easily audited to prevent fraudulent, untraceable, alteration of the record. RTI International, standard 4.2.7 states that entries after the signature event should be retained as the original document and any changes/additions to the record thereafter must be handled as amendments that can be tracked through the system.[14] This audit function of the EMR system should always be activated in order to identify legitimate changes from improper

[13] Recommended Requirements for Enhancing Data Quality in Electronic Health Record Systems, May 2007 at http://www.rti.org/pubs/enhancing_data_quality_in_ehrs.pdf (Requirements 4.2.4 and 4.2.6)
[14] Recommended Requirements for Enhancing Data Quality in Electronic Health Record Systems, May 2007 at http://www.rti.org/pubs/enhancing_data_quality_in_ehrs.pdf

changes. The audit trail should include the identity of the user as well as the date and time of the amendment/change.

CORRECTIONS/AMENDMENTS – RECOMMENDATION OF BCO:
All entries into the EMR should include the author's credentials, electronic signature as well as a date and time. All entries into the EMR should be auditable by provider (i.e., author) as well as by date and time of entry. Once the record has been authenticated by the provider, corrections/amendments must be separately entered and noted in the EMR, with the identity of the author as well as the date and time of the corrected/amended entry. There should never be the ability to erase or otherwise obliterate information in the EMR system that has been authenticated.

RESOURCES

1. AHIMA e-HIM Workgroup: "Guidelines for EHR Documentation to Prevent Fraud" Journal of AHIMA 78, no. 1 (January 2007). http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1_033097.hcsp?dDocName=bok1_033097

2. Tips for Preventing Most Common Evaluation and Management (E/M) Service Coding Errors, by TrailBlazer Health Enterprises, LLC, September 2007

3. Medical Necessity for Evaluation and Management Services, by TrailBlazer Health Enterprises, LLC, September 2007

4. Tips for Correct Coding of E/M Services Based on Medical Necessity, Medicare Part B, Provider Outreach and Education

5. Articles on Compliance Strategies, Compliance Risks Grow with Electronic Medical Record Systems, reprint from the May 28, 2007 issue of REPORT ON MEDICARE COMPLIANCE.

6. Recommended Requirements for Enhancing Data Quality in Electronic Health Records, Final Report, June 2007 prepared by RTI International for the Department of Health and Human Services.

7. Foundation of Research and Education. "Report on the Use of Health Information Technology to Enhance and Expand Health Care Anti-Fraud Activities" (September 30, 2005) ONC Health Care Anti-Fraud Project Task Order HHSP23320054100EC http://library.ahima.org/expedio/groups/public/documents/ahima/bok1_031699.pdf

8. Hammond, et al. "Are Electronic Medical Records Trustworthy? Observations on Copying, Pasting and Duplication" AMIA 2003 Symposium Proceeding. (2003): 269-273 http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=1480345&blobtype=pdf

9. Hirschtick, Robert F. "Copy-and-Paste" JAMA Vol. 295, no. 20 (May 23/31, 2006): 2335-2336. http://jama.ama-assn.org/cgi/content/full/295/20/2335

