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Subject: *Epic Electronic Medical Record System – Data Retrieval
AMAS Audit Project 2010-35*

Audit & Management Advisory Services (AMAS) has completed a review of UCSD Health System (UCSDHS) Epic Electronic Medical Record System (EMR) data retrieval policies and practices at the request of UCSDHS Revenue Cycle Administrator. This report summarizes the results of our review.

Background

The EpicCare (Epic) application is a product of Epic Systems Corporation of Verona, Wisconsin. Epic offers an integrated suite of health care software centered on a hierarchical object-oriented database system. All Epic applications leverage the same central database, and Epic data can be queried using built-in reporting tools for research and other analyses. UCSDHS has selected Epic as its primary clinical information system. The UCSDHS Epic Project Team (EPT) and UCSDHS Information Services have jointly provided oversight of Epic implementation. Epic has been fully implemented in the ambulatory care environment and is currently being implemented within inpatient patient care areas. As the EMR implementation has progressed, Epic has become a central part of the integrated system for creating and sharing clinical information.

Epic replaces the traditional paper chart by enabling providers to manage patient encounters and to document findings electronically. Use of electronic records can result in additional efficiencies such as standardization of forms, terminology and abbreviations, and data input. Epic provides the functionality to providers and other patient care and business unit staff to view visit schedules, patient demographic information, past medical history and problem lists, as well as medical procedure reports and results. Epic also provides the functionality to document visit findings; enter test orders; prescribe medications; and capture charges based on established user profiles.

***Epic Electronic Medical Record System – Data Retrieval Standards
Audit & Management Advisory Services Project 2010-35***

Medical record (MR) information is a systematic documentation of a patient's individual medical history and clinical care, and is contained within multiple electronic records systems in combination with financial and other types of data. Electronic MR documents, such as test results and physician summaries, are updated in the Patient Care Information System (PCIS) and integrated into Epic. Conversely, documents created in Epic are uploaded to PCIS after the attending physician finalizes an encounter. Epic and PCIS are the main repositories for MR information. These two systems provide real time updates to other patient care and business systems.

The Legal Medical Record (LMR) is defined in Medical Center Policy (MCP) 325.2, which establishes the guidelines for the content, maintenance, and confidentiality of MRs that meet the requirements set by State laws and regulations. MCP 325.2 also defines the portion of an individual's healthcare information that comprises the MR. UCSDHS HIS is responsible for maintaining the LMR.

Audit Objective, Scope and Procedures

The audit objective was to evaluate the processes used by HIS and business unit personnel to retrieve EMR documentation extracted to support of insurance claims and other requests, and to determine whether appropriate data retrieval systems have been established to ensure that protected health information (PHI) is extracted for external distribution in a consistent manner. In order to achieve our objective, we performed the following procedures:

- Reviewed UCSD policy and procedures and State law governing Medical Record information;
- Attended an on-line Epic Chart Review training module, and Epic Ambulatory Provider Patient Visit training;
- Interviewed select HIS, Patient Financial Services (PFS), UCSD Medical Group (MG), Ambulatory Services, and Health Sciences Compliance (HSC) personnel to obtain information about Epic daily processes;
- Interviewed one Clinical Systems Training Coordinator;
- Interviewed Epic Project Team leaders and security systems personnel;
- Obtained information regarding Epic Committees/User Groups and participation;
- Gained access to information regarding Epic roles based authentication; and,
- Attended the Medical Records Informatics Committee (MRIC) and Clinical Systems User Group meetings.

Conclusions

Based on our review procedures, we concluded that the Epic EMR system provided a robust mechanism for capturing patient care information, and assisted clinical staff with streamlining patient care processes. However, business unit requirements for standard medical record information display and output to ensure consistent production of information for external parties such as payers were not defined and documented as part of the system development process. As a result, inconsistent medical record extracts were being created by various business units. In addition, we noted that the Epic Project Team (EPT) did not include a dedicated HIS staff

*Epic Electronic Medical Record System – Data Retrieval Standards
Audit & Management Advisory Services Project 2010-35*

member with the technical expertise necessary to address business unit Epic needs and EMR administration as required by MCPs.

We also noted that in some cases, departmental and/or MCPs governing MR management and use for financial business operations were outdated or non-existent. These issues are discussed in detail in the balance of this report.

Observations and Management Corrective Actions

A. Business Process Assessment and User Training

Business unit requirements for standard medical record information display and output were not defined and documented as part of the system development process.

The processes used to extract EMR reports or other information from Epic were not consistent in various business units, including HIS, PFS, HSC and MG; and data elements included within the EMR extract reports were not well understood by the staff in those units. For instance, HIS received a request from PFS to provide physician orders to support an insurance claim. At the request of PFS, a paper document representing an order for oncology drugs was printed from an Epic module by HIS and returned to PFS. A similar request for documentation was received by another HIS staff member who separately printed the order information from Epic and submitted it to PFS. The two extracts produced contained different data elements. Prior to this review, PFS also received a number of charge denials based on a payer requirement that an order printed from Epic should contain the authorizing provider's electronic signature, rather than the clinical provider's name. Based on these issues, HIS and PFS agreed that a process for standardized report generation for claims support and release of protected health information to auditing, regulatory or legal bodies should be in place.

The EPT, through incremental Epic installations, has worked with each clinic individually to ensure that Epic system implementation has supported individual clinic workflows and medical practice needs. However, thus far, the EPT has not worked across the various HS business units to develop guidance on the use of Epic for business needs. The use of different methods to extract Epic data for business purposes is inefficient and could potentially result in clinical data being misinterpreted or misidentified.

Currently, all Epic system clinical core elements are licensed and implemented by the UCSD Health System. Although the Epic system as currently configured would allow HIS to define and print out a portion or all of a MR as required to complete a standard record request, the purchase and implementation of an additional Epic module, Health Information Management (HIM) would better support release of MR information, creation of standardized extracts, and tracking PHI disclosures.

Comprehensive training materials in use at the time of our review included the Epic training tutorials targeted toward clinical operations. Clinical training consisted of both on-line

***Epic Electronic Medical Record System – Data Retrieval Standards
Audit & Management Advisory Services Project 2010-35***

modules, and/or on-the-job instruction. An introductory on-line training module addressed the basic use of Epic to find and review a patient's MR. This module was required of all patient care personnel prior to their participation in training sessions pertinent to their role. Training pertinent to business unit use and access to EPIC medical record information in support of business operations was limited. The development of EMR business unit training sessions or on-line modules would assist business unit staff in performing their job duties more effectively.

Management Corrective Actions:

1. The EPT and UCSDHS business unit management will collaborate to:
 - a. Identify the business needs for Epic data extraction and provide the proper access configurations and business staff training to support those needs.
 - b. Develop and communicate appropriate Epic training materials and ensure ongoing competency in record review and retrieval by all business unit staff.
2. The EPT will consider licensing of the HIM module to support standardized record release and tracking of disclosure and PHI utilization.

B. Technical Information System Support

The EPT did not include a dedicated HIS staff member with the technical expertise necessary to address business unit Epic needs and EMR administration as required by Medical Center Policies (MCP's).

MCP 320.2H, *Patient Records: Content, Maintenance, Retention, and Disposition* states that HIS will provide professional, technical advice and assistance to the office of the UCSDHS Chief Executive Officer, UCSDHS professional and administrative staff, and the Performance Improvement and Outcomes, and the MRIC, to ensure that MRs are properly maintained according to California Administrative Code and The Joint Commission on Accreditation of Healthcare Organizations (TJC) regulations. In addition, HIS is responsible for providing direct technical service in all matters of MR maintenance, storage, and disposition, which include: orientation and training of department employees in the provisions of State and Federal Law; coordination with patient care areas; liaison with outside organizations and agencies as pertains to medical record matters; and maintenance of appropriate records of transactions concerning storage and disposition of patient records.

HIS is authorized by policy to provide technical expertise concerning MR structure, maintenance, storage and disposition, including how MR information is captured and displayed within Epic. While the leadership team of HIS participated collaboratively

*Epic Electronic Medical Record System – Data Retrieval Standards
Audit & Management Advisory Services Project 2010-35*

with EPT leadership in Epic development, the EPT did not include a dedicated HIS staff member with the technical expertise to address business unit needs. As a result, MR information has not been consistently defined, displayed, and extracted for use within the business units, as prescribed in the MCP's.

Management Corrective Actions:

1. HIS management will hire a programmer analyst, or redeploy an existing staff member with appropriate technical expertise to address business unit use of Epic, and to provide EMR support as required by MCP 320.2H. This individual will participate on the EPT to provide expertise on MR.
2. HIS staff will receive appropriate Epic training.

C. Policies and Procedures

In some cases, internal and external policies and procedures governing MR management and use for financial business operations were outdated or non-existent.

Health Information Services

AMAS reviewed written policies and procedures for HIS internal processes for accessing secured medical record information (02.09; 03.04; 03.06). HIS policy and procedures were written specifically for paper based medical record documentation and did not reference the process for accessing, requesting, and reporting electronic MR data.

MCP 320.2H, *Patient Records: Content, Maintenance, Retention, and Disposition*, contains language supporting HIS' responsibility for MR information. The MCP stated that HIS had the authority and oversight to provide direct technical service in all MR matters. However, MCP 325.2 did not contain this same language. The HIS Director's role was referenced in MCP 325.2 LMR Section III.H.2, *Responsibility for the Medical Record*. It stated the HIS Director was designated as the person responsible for assuring that a complete and accurate MR was established for every patient, but not state that HIS has the authority and oversight in all MR matters. In addition, the policy is missing a series of steps that support the creation of the LMR.

Management Corrective Action:

HIS management will review and revise all MCPs referencing MR responsibilities and content, and ensure that the policies include electronic records, as appropriate.

*Epic Electronic Medical Record System – Data Retrieval Standards
Audit & Management Advisory Services Project 2010-35*

Patient Financial Services

Internal processes for using Epic to print MRs to support insurance claim requests were not documented or well understood. Epic data was accessible through various screens within the user interface. Therefore, PFS staff accessed data and printed records using ad hoc methods they identified while accessing the system. PFS policy and procedures that provide guidance on MR data extraction processes had not been developed. As a result, information used to support claims may be obtained inconsistently, and required information may be missing or misidentified.

Management Corrective Action:

PFS and HIS managements will jointly identify all business processes that require MR supporting documents and determine the standard method for document access and transmission. Written procedures will be created to provide guidance to PFS staff.

Audit & Management Advisory Services appreciates the cooperation and assistance provided by UCSDHS personnel during this review. Because we were able to reach agreement regarding corrective actions to be taken in response to the audit recommendations, a formal response to the report is not requested.

The findings included in this report will be added to our follow-up system. While management corrective actions have been included in the audit report, we may determine that additional audit procedures to validate the actions agreed to or implemented are warranted. We will contact you to schedule a review of the corrective actions, and will advise you when the findings are closed.

UC policy requires that all draft audit reports both printed (copied on tan paper for ease of identification), and electronic be destroyed after the final report is issued. Because draft reports can contain sensitive information, please either return these documents to AMAS personnel or destroy them at this time.

If you have any questions regarding this report, please call me at 534-3617.

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*Epic Electronic Medical Record System – Data Retrieval Standards
Audit & Management Advisory Services Project 2010-35*

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