

AUDITOR'S REPORT

HARRIS HEALTH SYSTEM RADIOLOGY CHARGE CAPTURE



April 30, 2015

**Barbara J. Schott, C.P.A.
Harris County Auditor**

Mike Post, C.P.A.
Chief Assistant County Auditor
Accounting Division

Mark Ledman, C.P.A., M.P.A.
Chief Assistant County Auditor
Audit Division



1001 Preston, Suite 800
Houston, Texas 77002-1817
(713) 755-6505

FAX (713) 755-8932
Help Line (713) 755-HELP

BARBARA J. SCHOTT, C.P.A.
HARRIS COUNTY AUDITOR

April 30, 2015

Mr. George Masi
President and Chief Executive Officer
Harris Health System
2525 Holly Hall
Houston, Texas 77054

RE: Harris Health System Radiology Charge Capture engagement for the three months ended May 31, 2014, except for information system access testing which is as of August 19, 2014

The Audit Services Department performed procedures relative to the Harris Health System (Harris Health) Radiology Charge Capture engagement. The objective of the engagement was to evaluate critical controls for charging for selected procedures provided through the Radiology Department. The following procedures were performed:

- Met with management in Radiology, Information Systems, and Financial Services to obtain an understanding of the critical internal controls for radiology charge capture.
- Tested radiology system automated controls for charging for completed exams, ensuring the correct radiology procedures are charged, and for ensuring exams are supported by physician orders.
- Observed and selectively tested controls for charging supplies utilized in performing interventional radiology procedures.
- Reviewed and evaluated controls for identifying, investigating, and resolving charges not captured.

The engagement process included providing former President and Chief Executive Officer, David Lopez with an engagement letter, you with a scope letter, and conducting an entrance and exit conference with Harris Health personnel. The purpose of the letters and conferences were to explain the process, identify areas of concern, describe the procedures to be performed, discuss issues identified during the engagement, and solicit suggestions for resolving the issues. A draft report was provided to you and your personnel for review.

The enclosed Auditor's Report presents the significant issues identified during our procedures, recommendations developed in conjunction with your staff, and any actions you have taken to implement the recommendations. Less significant issues and recommendations have been verbally communicated to your staff.

Mr. George Masi
President and Chief Executive Officer

We appreciate the time and attention provided by you and your staff during this engagement.

Sincerely,

A handwritten signature in blue ink, reading "Barbara J. Schott". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Barbara J. Schott
County Auditor

cc: Harris Health System Board of Managers
District Judges
County Judge Ed Emmett
Commissioners:
 R. Jack Cagle
 El Franco Lee
 Jack Morman
 Steve Radack
Devon Anderson
Vince Ryan
William J. Jackson

TABLE OF CONTENTS

OVERVIEW	4
RESULTS	5
ISSUES AND RECOMMENDATIONS	6
Establishing Work Queue Rules	6
Deactivating System Access	6
Recording Charges for Ultrasound Procedures	7
RISK ASSESSMENT AND SUMMARY OF RECOMMENDATIONS.....	9

OVERVIEW

Radiology services are provided at Harris Health hospitals, outpatient centers, and community health centers. Charges for most radiology procedures that are performed at Harris Health are captured through the Radiant Clinical Information System (Radiant). However, charges for Radiation Oncology and Nuclear Medicine are captured through other systems. Controls for charges not captured by Radiant were not tested in this engagement.

Radiant is one of several modules Harris Health has acquired from the clinical and patient information systems vendor, Epic. Radiant is interfaced with other Epic system modules such as electronic medical record, scheduling, and billing. Approximately 143,300 charges for inpatient and outpatient radiology procedures were captured through Radiant for the three months ended May 31, 2014. Total gross radiology procedure charges recorded to the financial records through Radiant during the period were \$171 million, which represented 23.4% of total gross inpatient and outpatient ancillary charges.

Physicians order radiology procedures through the Epic electronic medical record system. The orders are automatically sent to on-line reporting screens (work queues) in Radiant where designated personnel schedule the radiology procedures. After the radiology procedures are scheduled, they are automatically sent to Radiology Department employees (Radiology Technicians) and Radiologists work queues to perform the procedures.

Radiology Technicians perform most radiology procedures, although some radiology procedures such as interventional radiology procedures are performed by Radiologists with Radiology Technicians assisting.

Radiology Technicians record the start and completion of radiology procedures in Radiant and patients' accounts are automatically charged in the Epic billing system for all completed radiology procedures. Employees in the Radiology Department and Patient Financial Services monitor radiology charges for accuracy and completeness using work queues established through one of the Epic modules. Work queues are also monitored to ensure all radiology procedures started are completed, radiology procedures are not performed without physician orders, and that reports are completed for all radiology procedures.

If supplies are used in radiology procedures, Radiology Technicians manually record the supplies in Radiant, even if they are included in procedure charges and are not billed separately.

RESULTS

Based on the procedures performed, critical controls for charging for radiology procedures appear adequate. Automated controls in Radiant ensure that the charges for radiology procedures are recorded to patients' accounts and are accurate. Automated controls also ensure physician orders exist for radiology procedures performed.

Radiant controls allow identification and investigation of charges that are not recorded to patients' accounts. In addition, automated and manual controls ensure supplies used in major interventional radiology procedures are recorded.

Some opportunities to improve critical controls were identified and are presented below:

- Consideration should be given to performing periodic validation reviews of critical work queue rules to ensure their accuracy.
- Remove users no longer requiring access to the information system used for transcription of mammography procedure results (Penrad) and consider linking Harris Health employee access to their employment status.
- Record the ultrasound charges identified that were not recorded and instruct the locations effected to ensure charges are recorded until the situation causing un-recorded charges is corrected.

These issues are discussed in more detail in the following Issues and Recommendations matrix.

ISSUES AND RECOMMENDATIONS

Subject	Background	Issue	Recommendation	Management Response
Establishing Work Queue Rules	Radiant delays the processing of certain radiology charges that require additional scrutiny. The charges are sent to and displayed on the computer screens (work queues) of Radiology Department employees to review for accuracy or completeness. The charges are sent to the work queues based on rules programmed into Radiant. When the Radiology Department employees complete their review, they approve the charges which are then processed.	The criteria for one work queue rule programmed into Radiant from the total population of thirty-one work queue rules, all of which were tested, was inconsistent with the intent as expressed in the work queue definition. According to the definition, charges greater than \$26,000 were to be sent for review. However, the rule programmed into Radiant sent only charges greater than \$30,000. As a result, certain charges were not being inspected as intended, increasing the risk that inaccurate charges could be processed.	Patient Financial Services Management should request the rule be corrected and should consider reviewing past charges which should have been reviewed but were not. In addition, consideration should be given to performing periodic validation reviews of critical work queue rules to ensure their accuracy.	Patient Financial Services Response: We agree with your findings and with IT's assistance, Patient Financial Services had this work queue updated upon identification of the problem (August 2014 Change Control 40044). Patient Financial Services will continue to work with IT – through current change control processes – to make sure that changes to existing work queues are tested and approved before updating them in production.
Deactivating System Access	Transcription of mammography procedure results is documented using the Penrad information system. Penrad is accessed by physicians and Harris Health employees. Penrad	As of August 19, 2014, 51 of 172 (29.7%) users with access no longer required access to Penrad. Not timely deactivating access to Penrad increases the risk of unauthorized or	Information Technology Management should remove the access for the 51 users identified and implement routine review procedures to identify and deactivate Penrad users that	Information Technology Management Response: IT Imaging is in agreement with the finding and the auditor's recommendation. - IT Imaging removed access for the 51

ISSUES AND RECOMMENDATIONS

Subject	Background	Issue	Recommendation	Management Response
(Continued) Deactivating System Access	users that no longer require access must be manually deactivated.	inappropriate access to patient information.	no longer require access. Consideration should also be given to linking Harris Health employee access to their employment status (i.e. automatically deactivate their Penrad access if they leave Harris Health).	<p>identified users during the audit at the time of discovery.</p> <p>- The IT Imaging team has taken over ownership of user inactivation in PenRad from the Radiology Dept. and will perform a PenRad system audit bi-annually. The first bi-annual audit is scheduled to be complete by 1/31/2015.</p> <p>IT Imaging is currently planning a project to integrate PenRad user access with Active Directory. This project is estimated to be completed during July of 2015.</p>
Recording Charges for Ultrasound Procedures	Ultrasound procedure charges are recorded in Radiant at the completion of the procedure. Ultrasound procedures are performed by many Harris Health departments including Radiology, Obstetrics and Gynecology	A change to charge processing caused 88 out of 24,014 (0.4%) ultrasound procedures to not be charged to patients' accounts during the three months ended May 31, 2014. The charges were performed at OB/GYN	Patient Financial Services Management should record the charges for the 88 ultrasound procedures identified to the patients' accounts. They should also instruct the locations effected on how to ensure charges are recorded until	<p>Patient Financial Services Patient Response:</p> <p>We agree with your findings and Patient Financial Services had already identified the problem – through work queue rules that flagged the cases as having missing charges –</p>

ISSUES AND RECOMMENDATIONS

Subject	Background	Issue	Recommendation	Management Response
(Continued) Recording Charges for Ultrasound Procedures	(OB/GYN), Cardiology, Vascular, etc.	ambulatory care departments, with a combined gross charge amount of \$46,467, Not charging for all ultrasound procedures understates gross patient charges and could cause lost revenue for funded patients.	the reason for un-recorded charges is corrected.	and added the necessary charges after Audit Services had also identified the missing charges. As noted, there are queues that are designed to flag the cases when the charges are missing. This queue will continue to be the process for identifying these missing charges, and education will continue to be the process for assisting departments when charge related errors are identified.

RISK ASSESSMENT AND SUMMARY OF RECOMMENDATIONS

The risk matrix below presents the assessed level of risk or exposure identified during our procedures. Inherent risk relates to factors that because of their nature cannot be controlled or mitigated by management. Inherent risk includes factors such as legislative changes, number and dollar amount of transactions processed and/or complex nature of transactions. Control risks relate to factors that can be influenced or controlled by management. Controls such as policies and procedures, electronic or manual approvals, system security access, and separation of job responsibilities may be instituted by management in order to mitigate control risk. Control risk is assessed during the planning phase in order to establish the nature, timing, and extent of testing and at the conclusion of the engagement in order to incorporate actions taken to implement our recommendations. The overall risk considers a combination of inherent and control risks.

Inherent Risk:	Control Risk:		Overall Risk:
<input checked="" type="checkbox"/> High <input type="checkbox"/> Moderate <input type="checkbox"/> Low	Prior to Procedures	After Procedures	<input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low
	Adequate	Adequate	
Type of Procedures: Audit			
Purpose: To evaluate critical controls for charging for selected procedures provided through the Radiology Department			
Outstanding Audit Recommendations:			
Priority Rating:	Audit Recommendations: Harris Health System		
1	Request the rule error identified be corrected and consider reviewing past charges which should have been reviewed but were not. Consider performing periodic validation reviews of critical work queue rules to ensure their accuracy.		
1	Remove the access for the 51 users identified and implement routine review radiology procedures to identify and deactivate Penrad users that no longer require access. Consider linking employee access to Penrad with their employment status.		
1	Record the charges for the 88 ultrasound procedures identified to patient's accounts and instruct the locations effected on how to ensure charges are recorded until the reason for un-recorded charges is corrected.		
Priority Rating	<ol style="list-style-type: none"> 1. Implement immediately (30 – 90 days) – Serious internal control deficiencies; or recommendations to reduce costs, maximize revenues, or improve internal controls that can be easily implemented. 2. Work towards implementing (6 – 18 months) – Less serious internal control deficiencies, or recommendations that can not be implemented immediately because of constraints imposed on the department (i.e., budgetary, technological constraints, etc.). 3. Implement in the future (two – three years) – Recommendations that should be implemented, but that can not be implemented until significant and/or uncontrolled events occur (i.e., legislative changes, buy and install major systems, requires third party cooperation, etc.). 		