MEMORANDUM

TO: Gulshan Sharma, MD, MPH, FCCP
Vice President, Chief Medical & Clinical Innovation Officer

FROM: Kimberly K. Hagara, CPA, CIA, CISA, CRMA
Vice President, Audit Services

DATE: May 24, 2018

SUBJECT: Infection Control Reporting
Engagement Number 2018-010

Attached is the final audit report regarding the Infection Control Reporting Audit. This audit will be presented at the next Institutional Audit Committee meeting.

Additionally, please find attached Audit Services audit recommendation follow up policy. Each of the recommendations is classified by type at the end of its identifying number: System Priority (SP), Risk Mitigation (R), or Process Improvement (P). As you will note in the policy, the classification of the recommendation determines the frequency of our follow up. All follow up results are reported quarterly to the Institutional Audit Committee.

Thank you for your cooperation and assistance during the course of this review. If you have any questions or comments regarding the audit or the follow-up process, please feel free to contact me at (409) 747-3277.

Attachments

c: Donna K. Sollenberger
Janak A. Patel, MD
Shirley K. Shores
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**Background**
The goal of the University of Texas Medical Branch's (UTMB Health's) "Best Care" initiative is to "Deliver the right care, at the right time, in the right way, for the right person - and have the best possible results - every patient, every time". As articulated on its webpage, the Healthcare Epidemiology Department (HCE) plays a key role in this initiative by establishing and maintaining "a proactive program of surveillance, prevention and control of healthcare-associated infections and occupational exposures to infectious diseases, utilizing policies/procedures, education, communication and epidemiological techniques to promote good outcomes".

The HCE surveillance program utilizes the Center for Disease Control and Prevention (CDC) and other nationally-recognized guidelines to meet state and federal mandates. UTMB Health participates in the CDC National Healthcare Safety Network (NHSN), a repository for the publicly reported data accessed by the Centers for Medicare and Medicaid Services (CMA) and the Texas Department of State Health Services (DSHS). Additionally, HCE reports applicable data to the Galveston and Brazoria County health departments as part of their community health monitoring program.

HCE's 2018 priority goals include:

- Prevention of healthcare-associated infections (HAIs) including central line-associated bloodstream infections (CLABSIs), catheter-associated urinary tract infections (CAUTI) and surgical site infections (SSI); and,
- Compliance with preventive processes such as hand hygiene, appropriate processing, transporting and storing of reusable medical equipment, preparation for emerging infectious diseases, prevention of occupationally-associated infections and the provision of a sanitary environment.

**Audit Objective**
The primary objective of this engagement is to review operational activities and select HCE reporting processes to provide reasonable assurance related to the integrity of internally and externally reported data and identify any opportunities for operational improvement.

**Scope of Work and Methodology**
The scope of work focused on current HCE operational activities and reporting processes. Data reviewed was reported by UTMB Health during calendar year (CY) 2017. The engagement methodology included:

- Assessment of operational design and functionality of the HCE including review of departmental policies and procedures and organizational structure.
- Operational process walkthroughs to gain an understanding of the daily monitoring and surveillance duties performed as part of infection control and other departmental activities.
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- Review of select healthcare-associated infections data for completeness of data identified internally and reported to national and local databases/reporting authorities.

The audit was conducted in accordance with the *International Standards for the Professional Practice of Internal Auditing* as promulgated by the Institute of Internal Auditors.

Audit Results
Policies and Procedures
The Healthcare Epidemiology Departmental (HCE) website lists over 100 infection control policies, practice standards and operational standards addressing topics such as hand hygiene, respiratory hygiene, personal protective equipment, infection prevention, cleaning and disinfection protocols, and waste disposal. Although HCE leadership indicated policies and procedures are reviewed on an ongoing basis, we noted the majority of policies and procedures related to areas of data analysis do not contain evidence of review within the last 3-5 years. Creating and retaining a cycle review of policies and procedures would aid in ensuring operational and regulatory alignment and compliance.

**Recommendation 2018-010-01-RL:**
The HCE Director should create a 3-5 year review cycle for all policies and procedures to ensure continued alignment with applicable regulatory guidance and industry leading practices. The policies and procedures should contain documentation of the date of the last review.

**Management’s Response:**
All policies that have not been reviewed in the past 3 years will be updated in 2018. We will attempt to review 10-20 policies per month. Some will require re-affirmation while some will require revision. Any significant policy change will be presented at the Infection Control Committee meeting prior to final posting. After this process is complete, all policies will be placed on a 3-year review cycle, with 1/3 due each year.

**Implementation Date:** 12/31/2018

Sentri7 Electronic Surveillance System
UTMB Health utilizes an electronic surveillance tool, Sentri7, for real time continual monitoring of possible healthcare-associated infections (HAIs). Additionally, reportable data can be uploaded from Sentri7 directly to NHSN. This implementation of Sentri7 helped reduce the number of manual data reviews performed in the infection surveillance process and increase the accuracy and completeness reportable data.

System Access Management
The HCE Director indicated Sentri7 users are added and/or deleted from the tool as necessary by either the Director or the HCE Business Analyst, without the use of a formal addition/deletion request process. User access is reviewed periodically to determine last use or
as user resets/password changes are required; however, this review is not routine or formally documented.

**Recommendation 2018-010-02-PL:**
The HCE Director should ensure system user additions, deletions, and password management requests are formally documented and tracked.

**Management's Response:**
A tracking system to document a monthly review of users including dates of additions, deletions, passwords and user roles has been implemented.

**Implementation Date:** 8/31/2018

**Assignment of User Roles**
Sentri7 utilizes notifications/rules, both standardized and customizable, within the system dependent upon the type of HAI monitored. The software vendor writes and loads the standardized rules into the system. Customizable rules are created/changed/deleted as needed by users assigned in Sentri7 as System Administrators. Audit Services review of current system users indicated all users were assigned the System Administrator role. Assignment of this role to all staff increases the risk for intentional/unintentional additions, modifications, or deletions to the rules. Once apprised by Audit Services of the potential risks, the HCE Director assessed and modified current role assignments to the lowest level necessary to perform job responsibilities.

**System Maintenance**
Audit Services interviews with HCE personnel indicated the Sentri7 system vendor performs routine maintenance to ensure the software is current and specifications are in accordance to national guidelines. Maintenance occurs on a monthly and quarterly basis, and as needed if national guidelines are updated.

**Infection Control Data Collection**
Positive patient culture results are populated within Sentri7 in real time for continual monitoring of possible HAIs. Limited patient data associated to the culture result populates within Sentri7 from the EPIC system (i.e. patient MRN, admit date, culture date, result date). The Infection Preventionists then review the individual patient charts for additional patient information and factors as required by the CDC's standardized definitions to determine the possibility of an HAI event for NHSN reporting.

Similarly, limited patient data associated with surgical procedures performed is extracted from EPIC to Sentri7. Infection Preventionists then review the individual patient chart to gather the remaining necessary required patient data to complete Sentri7 forms for submission of surgical data to NHSN. Additional monitoring and chart reviews are performed as needed to determine if an HAI occurred for reporting to NHSN.

Audit Services interviews and walkthroughs with the HCE Infection Preventionists indicated they appear knowledgeable of their subject matter; keep thorough supporting documentation of
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events; and, conscientiously approach the identification of healthcare-acquired infections. If the pertinent data is not found within the patient's chart, the Infection Preventionists inquire with the healthcare workers that attended to the patient for further information/documentation.

Validation of Externally Reported Data
The Infection Preventionists, HCE Director and Medical Director review and discuss identified HAI related events prior to submission to NHSN. These discussions happen both during daily monitoring as well as more formally during departmental staff meetings. Additionally, the HCE department is subject to random audits by the CDC or the State of Texas to ensure that data is identified correctly and submitted in a timely fashion. Issues that may arise from these audits are discussed and addressed within the department or identified hospital care area.

Audit Services reviewed select HAI data generated from Sentri7 and NHSN to validate completeness of data reported within NHSN:

- **Catheter-associated urinary tract infections (CAUTI) and Methicillin-resistant staphylococcus aureus (MRSA):** System data for CAUTI and MRSA from both Sentri7 and NHSN was obtained and reviewed. Explainable discrepancies were noted between the data sets. Standard operational procedure is for data to be electronically transferred from Sentri7 to NHSN. However, there are occasions where data is entered directly into NHSN. The HCE Director indicated if a discrepancy were to be noted, the Director would investigate to determine why the reported data did not reflect expectation.

- **Surgical Site Infections (SSIs) – Knee Prosthesis (KPROs):** HCE uses a manual process to upload identified infection data to NHSN. No discrepancies were noted.

- **County Health Department Reportable Data:** The County Health Department (County) requires information to be submitted via fax. HCE retains hard copies of all submission. At year end, the County provides HCE a report indicating the total notifiable conditions by infection type and occurrence reported by UTMB Health during the year. This report is used by HCE in communicating results outside the department. Audit Services received a copy of the County's report from HCE to verify completeness of data submitted by UTMB Health to that reported by the County. Although no discrepancies resulted from our testing, we noted that HCE does not have a process in place to validate the completeness of data reported by the County.

**Recommendation 2018-010-03-PL:**
The HCE Director should develop and implement a process to validate the completeness of data reported by the County at year end.

**Management’s Response:**
We will implement a process to validate the data received by the county health department. This will be performed within a month of receiving the quarterly report from the Galveston County Health District.
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Other Observations
Manual Processes
The HCE Department relies heavily on manual logs and forms to retain and track data, resulting in multiple data extraction and input points that could potentially result in data or information errors ultimately impacting the data integrity. Additionally, current manual processes reduce the overall efficiency of the department. HCE and Clinical IS leadership are encouraged to explore future opportunities for additional system enhancements and data automation efficiencies.

Organizational Structure
The Infection Preventionist for the Angleton Danbury Campus (ADC) does not report to the Healthcare Epidemiology Department as only a portion of the employee’s job responsibilities relate to infection control. The absence of a more formal linkage does not allow full consideration of communication and training needs nor does it provide HCE supervisory input into the employee’s performance reviews.

Recommendation 2018-010-04-PL:
HCE should explore with ADC Nursing Leadership the feasibility of developing a more formal or matrix reporting structure to the Director of HCE to ensure the Preventionist’s infection control duties and training needs are appropriately considered in their overall job performance.

Management’s Response:
The department will discuss this with the executive leadership to develop an appropriate reporting structure for ADC infection control preventionist. The IP at ADC will begin integrating functions with the HCE department.

Implementation Date: 9/1/18
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Conclusion
Overall, based on the work performed, it appears the Healthcare Epidemiology Department’s operational activities and reporting processes are functioning as intended. Audit Services noted opportunities exist related to policies and procedures, Sentri7 access management, and validating infection data reported to the County Health Department.

We greatly appreciate the assistance provided by the Healthcare Epidemiology Department staff and hope that the information presented in our report is beneficial.

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