



**CITY OF COLORADO SPRINGS
OFFICE OF THE CITY AUDITOR**

**10-13 MEMORIAL HEALTH SYSTEM
IT BACKUP PROCESS**

PUBLIC REPORT

JULY 22, 2010

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Office of the City Auditor

Public Report

Date: July 22, 2010

To: Honorable Mayor and Members of City Council
Members of the Memorial Health System Board of Trustees
Members of the Memorial Health System Audit Committee

Re: 10-13 Memorial Health System Information Technology Backup Process Audit

We conducted an audit of the internal security controls for Memorial Health System's (Memorial) Information Technology (IT) Backup Process.

The purpose of this audit was to review the IT Backup Process. The audit identified the various devices and media used during the backup process. Additionally, a review of policies and procedures was conducted to ensure Memorial IT staff was adhering to the written policies and procedures and that the policies and procedures followed best practices. The audit also covered secure storage and transportation of backup media.

We concluded that the Memorial IT Backup Process was generally effective. However, Memorial should enhance existing procedures and internal control measures. We identified three areas where internal controls could be strengthened. They are listed in the attached report.

As always, feel free to contact me if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Denny Nester".

Denny Nester
Interim City Auditor

Cc: Dr. Larry McEvoy II, Chief Executive Officer
Mike Scialdone, Chief Financial Officer
Dr. Jonathan Velez, Chief Medical Information Officer, Chief Information Officer
John Wyckoff, Compliance Officer

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Abbreviations and Acronyms used in this Report

Memorial Memorial Health System

Introduction

AUTHORIZATION

We conducted an audit of Memorial Health System's (Memorial) IT Backup Process. We conducted this audit under the authority of Chapter 1, Article 2, Part 7 of the Colorado Springs City Code, and more specifically parts 703 and 705, which state:

1.2.703: ENSURE PUBLIC ACCOUNTABILITY:

The City Auditor shall ensure that administrative officials are held publicly accountable for their use of public funds and the other resources at their disposal. The City Auditor shall investigate whether or not laws are being administered in the public interest, determine if there have been abuses of discretion, arbitrary actions or errors of judgment, and shall encourage diligence on the part of administrative officials.

1.2.705: DETERMINE EFFECTIVENESS AND EFFICIENCY OF PROGRAMS:

The City Auditor shall determine the extent to which legislative policies are being efficiently and effectively implemented by administrative officials. The City Auditor shall determine whether City programs are achieving desired objectives. The City Auditor shall review the administrative control systems established by the enterprises, department or group managers and by the City Manager, Utilities Executive Director and Memorial Hospital Executive Director and determine whether these control systems are adequate and effective in accomplishing their objectives.

ORGANIZATIONAL PLACEMENT

The Office of the City Auditor is structured in a manner to provide organizational independence from the entities it audits. This independence is accomplished by the City Auditor being appointed by and reporting directly to the City Council. The audited entity in this audit was Memorial Health System, which is an enterprise of the City of Colorado Springs under the direction of its Chief Executive Officer. The Chief Executive Officer reports to the Memorial Board of Trustees, who are appointed by the City Council.

SCOPE AND METHODOLOGY

The purpose of this audit was to review the IT Backup Process. The audit identified the various devices and media used during the backup process. Additionally, a review of policies and procedures was performed to ensure Memorial IS staff was adhering to the written policies and procedures and that the policies and procedures followed best practices. The audit also covered secure storage and transportation of backup media.

The audit was conducted in accordance with the *International Standards for the Professional Practice of Internal Auditing*, a part of the Professional Practices Framework promulgated by the Institute of Internal Auditors. The audit included such test of records and other supporting documentation as was deemed necessary in the circumstances. We reviewed the internal control structure and performed compliance tests. Sufficient competent evidential matter was gathered to support our conclusions. In order to prevent the unintentional distribution of proprietary information, which might compromise data security, parts of this report have been redacted and appear in the report as [REDACTED].

Introduction

BACKGROUND

A properly implemented data backup process is important to an organization's disaster recovery/business continuity plans. Improper data backups could jeopardize an organization's ability to provide their services if data is lost and cannot be recovered due to insufficient data backups.

OVERALL OPINION

We concluded that the Memorial IT Backup Process was generally effective. However, Memorial should enhance existing procedures and internal control measures. We identified three areas where internal controls could be strengthened. They are listed on the pages that follow.

***We have made no determination as to which findings are more important than others.
Therefore, the findings are not listed in order of importance.***

Findings, Recommendations, and Responses

1. [REDACTED]

[REDACTED]

[REDACTED]

Auditor's Recommendation:

[REDACTED]

MHS's Response:

We agree with this recommendation. Memorial Health System takes the security of our data very seriously. [REDACTED]

[REDACTED]

Findings, Recommendations, and Responses

2. Memorial was not informed when a [REDACTED] courier was no longer employed.

[REDACTED] had not been informing MHS when a courier was no longer employed. MHS should have been provided a list of current couriers in order to know who was authorized to transport media.

The risk of data compromise was increased since Memorial was not being informed by [REDACTED] [REDACTED] when a courier was no longer employed. A former [REDACTED] courier could pose as an authorized courier and possibly gain access to the backup media. Having the backup media, the unauthorized courier may be able to extract and misuse the data stored on the media.

Auditor's Recommendation:

We recommend Memorial be informed when a [REDACTED] courier's employment status changes.

MHS's Response:

We agree with this recommendation. We have communicated this need to [REDACTED]. [REDACTED] will revise their policies to ensure that Memorial Health System is notified via email when a driver is no longer employed. This information will be communicated to the appropriate personnel to ensure data is not given to an unauthorized individual. [REDACTED]
[REDACTED]

Findings, Recommendations, and Responses

3. Periodic inventories of offsite backup media were not performed.

Memorial was not performing periodic inventories of offsite backup media. Memorial had the ability to perform the inventories either onsite or virtually through [REDACTED] website.

Periodic inventories would help ensure that backup tapes are accounted for. If a tape was missing, it could be difficult to properly restore data in the case of a disaster. If data needed to be restored and a tape with the current data was missing, Memorial may only be able to restore outdated data if that tape exists. It would also be possible that entire copies of files would be missing not allowing for any type of recovery.

Auditor's Recommendation:

We recommend Memorial perform periodic inventories of offsite backup media.

MHS's Response:

We agree with this recommendation. Policies and procedures have been created to both perform and document periodic inventories of offsite backup media using [REDACTED] web facilities. [REDACTED]