OFFICE OF AUDITS & ADVISORY SERVICES



DATA LOSS PREVENTION AUDIT

FINAL REPORT

Chief of Audits: Juan R. Perez Audit Manager: Laura Flores, CIA, CFE, CGAP Auditor II: Rani Gorgis, CPA

Report No. A18-019

October • 2018





AUDITOR AND CONTROLLER
OFFICE OF AUDITS & ADVISORY SERVICES
5530 OVERLAND AVENUE, SUITE 330, SAN DIEGO, CA 92123-1261
Phone: (858) 495-5991

JUAN R. PEREZ CHIEF OF AUDITS

October 26, 2018

TO: Mikel Haas, Chief Information Officer

County Technology Office

FROM: Juan R. Perez

Chief of Audits

FINAL REPORT: DATA LOSS PREVENTION AUDIT

Enclosed is our report on the Data Loss Prevention Audit. We have reviewed your response to our recommendations and have attached it to the audit report.

The actions taken and/or planned, in general, are responsive to the recommendations in the report. As required under Board of Supervisors Policy B-44, we respectfully request that you provide quarterly status reports on the implementation progress of the recommendations. You or your designee will receive email notifications when these quarterly updates are due, and these notifications will continue until all actions have been implemented.

If you have any questions, please contact me at (858) 495-5661.

JUAN R. PEREZ Chief of Audits

AUD:RG:nb

Enclosure

c: Tracy M. Sandoval, Deputy Chief Administrative Officer/Auditor and Controller Damien Quinn, Group Finance Director, Finance and General Government Group

AUDITOR AND CONTROLLER
OFFICE OF AUDITS & ADVISORY SERVICES
5530 OVERLAND AVENUE, SUITE 330, SAN DIEGO, CA 92123-1261
Phone: (858) 495-5991

JUAN R. PEREZ CHIEF OF AUDITS

October 26, 2018

TO: Cathi Palatella, Director

HHSA - Child Welfare Services

FROM: Juan R. Perez

Chief of Audits

FINAL REPORT: DATA LOSS PREVENTION AUDIT

Enclosed is our report on the Data Loss Prevention Audit. We have reviewed your response to our recommendations and have attached it to the audit report.

The actions taken and/or planned, in general, are responsive to the recommendations in the report. As required under Board of Supervisors Policy B-44, we respectfully request that you provide quarterly status reports on the implementation progress of the recommendations. You or your designee will receive email notifications when these quarterly updates are due, and these notifications will continue until all actions have been implemented.

If you have any questions, please contact me at (858) 495-5661.

JUAN R. PEREZ Chief of Audits

AUD:RG:nb

Enclosure

c: Nick Macchione, Agency Director, Health & Human Services Agency
Tracy M. Sandoval, Deputy Chief Administrative Officer/Auditor and Controller
Dean Arabatzis, Chief Operations Officer, Health & Human Services Agency
Andrew Pease, Executive Finance Director, Health & Human Services Agency
Christy Carlson, Group Program Manager, Health & Human Services Agency



AUDITOR AND CONTROLLER
OFFICE OF AUDITS & ADVISORY SERVICES
5530 OVERLAND AVENUE, SUITE 330, SAN DIEGO, CA 92123-1261
Phone: (858) 495-5991

JUAN R. PEREZ CHIEF OF AUDITS

October 26, 2018

TO: Glenn N. Wagner, D.O., Chief Medical Examiner

County Medical Examiner

FROM: Juan R. Perez

Chief of Audits

FINAL REPORT: DATA LOSS PREVENTION AUDIT

Enclosed is our report on the Data Loss Prevention Audit. We have reviewed your response to our recommendations and have attached it to the audit report.

The actions taken and/or planned, in general, are responsive to the recommendations in the report. As required under Board of Supervisors Policy B-44, we respectfully request that you provide quarterly status reports on the implementation progress of the recommendations. You or your designee will receive email notifications when these quarterly updates are due, and these notifications will continue until all actions have been implemented.

If you have any questions, please contact me at (858) 495-5661.

JUAN R. PEREZ Chief of Audits

AUD:RG:nb

Enclosure

c: Ronald J. Lane, Deputy Chief Administrative Officer, Public Safety Group Tracy M. Sandoval, Deputy Chief Administrative Officer/Auditor and Controller Rosemarie Degracia, Group Finance Director, Public Safety Group

AUDITOR AND CONTROLLER
OFFICE OF AUDITS & ADVISORY SERVICES
5530 OVERLAND AVENUE, SUITE 330, SAN DIEGO, CA 92123-1261
Phone: (858) 495-5991

JUAN R. PEREZ CHIEF OF AUDITS

October 26, 2018

TO: Elise Rothschild, Director

Department of Environmental Health

FROM: Juan R. Perez

Chief of Audits

FINAL REPORT: DATA LOSS PREVENTION AUDIT

Enclosed is our report on the Data Loss Prevention Audit. We have reviewed your response to our recommendations and have attached it to the audit report.

The actions taken and/or planned, in general, are responsive to the recommendations in the report. As required under Board of Supervisors Policy B-44, we respectfully request that you provide quarterly status reports on the implementation progress of the recommendations. You or your designee will receive email notifications when these quarterly updates are due, and these notifications will continue until all actions have been implemented.

If you have any questions, please contact me at (858) 495-5661.

JUAN R. PEREZ Chief of Audits

AUD:RG:nb

Enclosure

c: Sarah E. Aghassi, Deputy Chief Administrative Officer, Land Use & Environment Group Tracy M. Sandoval, Deputy Chief Administrative Officer/Auditor and Controller Yuliya E. Leina, Group Finance Director, Land Use & Environment Group

AUDITOR AND CONTROLLER
OFFICE OF AUDITS & ADVISORY SERVICES
5530 OVERLAND AVENUE, SUITE 330, SAN DIEGO, CA 92123-1261
Phone: (858) 495-5991

JUAN R. PEREZ CHIEF OF AUDITS

October 26, 2018

TO: Jack Pellegrino, Director

Department of Purchasing & Contracting

FROM: Juan R. Perez

Chief of Audits

FINAL REPORT: DATA LOSS PREVENTION AUDIT

Enclosed is our report on the Data Loss Prevention Audit. As there are no findings and recommendations in the report pertaining to your department, no audit response is required.

Thank you for the courteousness and cooperation extended to the Office of Audits & Advisory Services during the course of the audit.

If you have any questions, please contact me at (858) 495-5661.

JUAN R. PEREZ Chief of Audits

AUD:RG:nb

Enclosure

c: April F. Heinze, Deputy Chief Administrative Officer, Community Services Group Tracy M. Sandoval, Deputy Chief Administrative Officer/Auditor and Controller Brian M. Hagerty, Group Finance Director, Community Services Group



AUDITOR AND CONTROLLER
OFFICE OF AUDITS & ADVISORY SERVICES
5530 OVERLAND AVENUE, SUITE 330, SAN DIEGO, CA 92123-1261
Phone: (858) 495-5991

JUAN R. PEREZ CHIEF OF AUDITS

October 26, 2018

TO: Daniel V. McAllister, Treasurer-Tax Collector

Treasurer-Tax Collector

FROM: Juan R. Perez

Chief of Audits

FINAL REPORT: DATA LOSS PREVENTION AUDIT

Enclosed is our report on the Data Loss Prevention Audit. As there are no findings and recommendations in the report pertaining to your department, no audit response is required.

Thank you for the courteousness and cooperation extended to the Office of Audits & Advisory Services during the course of the audit.

If you have any questions, please contact me at (858) 495-5661.

JUAN R. PEREZ Chief of Audits

AUD:RG:nb

Enclosure

c: Tracy M. Sandoval, Deputy Chief Administrative Officer/Auditor and Controller Damien Quinn, Group Finance Director, Finance and General Government Group

Introduction

Audit Objective

The Office of Audits & Advisory Services (OAAS) completed an audit of the implementation of the Data Loss Prevention (DLP) initiative. The objectives of the audit are to evaluate the County's DLP risk exposure and to verify whether controls are in place and operating effectively to prevent unauthorized disclosure of confidential information.

Background

To ensure compliance with County policies regarding data protection practices¹, the County of San Diego (County) established the Data Loss Prevention initiative and developed procedures to safeguard personal information. As part of this initiative, the County uses WebSense software, an automated tool to prevent the inadvertent disclosure of Personal Identifiable Information and Protected Health Information (PII/PHI).

WebSense software detects and alerts employees of the presence of certain confidential information on their desktops and requires a conscious decision to proceed with moving the data from its original source. If the employee proceeds, the action is logged along with a copy of the confidential data for department review.

Each department has a DLP Coordinator responsible for analyzing and resolving DLP incidents containing PII/PHI data. DLP incidents are escalated for further review, as needed. If a possible unauthorized breach is found, the Office of Ethics and Compliance (OEC) is notified. OEC is responsible for conducting a formal investigation and determining if the event triggers any notification laws. The employee's manager and the Department of Human Resources (DHR) are notified if corrective action is necessary.

The County Technology Office (CTO) provided WebSense software training to DLP Coordinators, including handling of incidents and running queries and reports. Also, the DLP Coordinators can refer to the Enterprise Data Loss Prevention Guidelines developed by the CTO.

Audit Scope & Limitations

The scope of the audit focused on DLP incidents from FY 2015-16 through FY 2017-18. OAAS judgmentally selected the following departments to evaluate DLP process controls:

<u>COSD-1424 Security Management Plan</u> states that all user access to County Information and Information Systems shall t provided on a need-to-know basis to protect the information from unauthorized disclosure, damage, modification, or misuse.

¹ COSD Administrative Manual 0400-11 defines the classification, protection level, proper security and handling of County Information as all information, data, records and documents, of any kind, including but not limited to "public records" as defined by the California Public Records Act, created, stored, contained or transmitted on County Information Systems.

COSD-T424 Security Management Plan states that all user access to County Information and Information Systems shall be

Table 1: Departments Selected for Testing

Business Group	Department		
Public Safety Group	County Medical Examiner (CME)		
Land Use & Environment Group	Department of Environmental Health (DEH)		
Community Services Group	Department of Purchasing and Contracting (DPC)		
Finance & General Government Group	Treasurer – Tax Collector (TTC)		
Health & Human Services Agency (HHSA)	Child Welfare Services (CWS)		

Responsibility for analyzing, monitoring, and resolving DLP incidents for HHSA Departments has been assigned to the Agency Compliance Office (ACO). As such, audit testing for CWS DLP incidents was conducted with the ACO.

This audit was conducted in conformance with the International Standards for the Professional Practice of Internal Auditing prescribed by the Institute of Internal Auditors as required by California Government Code, Section 1236.

Methodology

To achieve the audit objectives, OAAS performed the following procedures:

- Reviewed State laws and regulations related to DLP practices.
- Examined applicable County policies and procedures related to DLP processes.
- Discussed DLP risks and controls with the CTO.
- Interviewed DLP Coordinators in each sampled department to obtain an understanding of their DLP process and relevant policies.
- On a sample basis, conducted detail testing to evaluate the following:
 - Incident review
 - Incident documentation
 - Timely resolution
 - Incident update status

Summary

Within the scope of the audit, there is reasonable assurance that the County's DLP risk exposure is minimized by the implementation of the DLP system. We found no instances of non-compliance with state laws pertaining to data breaches. However, OAAS identified opportunities to further improve existing controls to mitigate the risk of unauthorized disclosure of confidential personal information.

A summary of noted exceptions by department is presented in Table 2 below:

Table 2: Summary of Audit Test Results and Related Recommendations

Department	Exceptions Recommendation	
CME	1	1
DEH	1	1
DPC	0	0
ACO	3	2
TTC	0	0
СТО	N/A	1

Finding I:

Data Loss Prevention Procedures Need Improvement

OAAS selected a judgmental sample of DLP incidents for detail testing. Table 3 below shows the number of sample items selected by department:

Table 3: DLP Incidents Sample Size²

Department	TTC	DPC	ACO	CME	DEH
Sample Size	30	10	30	19	30

The following issues related to the procedures and internal controls to manage incidents reported by the DLP automated system were identified:

DLP Incident Review Details Not Documented – OAAS found that the details of the review conducted to analyze DLP incidents is not consistently documented by the departments. Specifically, DEH, CME and ACO provided information on the resolution and disposition of the incidents selected for review. However, no supporting documentation was on file to substantiate the extent of the review conducted for such incidents.

Lack of documentation with the details of an incident review results in the inability to verify whether incidents were properly reviewed and resolved.

According to the Committee of Sponsoring Organizations (COSO), documentation is a necessary part of an effective internal control system. Documentation is required to demonstrate the design, implementation, and operating effectiveness of an entity's internal control system.

_

² The sample size selected was based on the respective populations of each department with a maximum sample size of 30. DPC had only a sample of 10 because that was the total population available to test and incidents rarely occur in that department. CME had a sample size of 19 because 11 of the 30 selected were test incidents, therefore not considered in the sample testing.

Escalated DLP Incidents Not Monitored for Resolution – According to the Enterprise DLP Guidelines provided by the CTO, DLP Coordinators are responsible for analyzing and escalating incidents to internal stakeholders, as necessary. They are also responsible for updating the incident status in the DLP system to ensure resolution.

OAAS identified one DLP incident at the ACO that was escalated for further review with no follow up conducted. As such, this incident has remained open since May 16, 2017.

Failure to monitor incident resolution and update the status in the DLP system, results in the inability to determine whether the incidents were properly resolved and could increase the risk of loss of confidential data.

Delayed Review and Resolution of DLP Incidents – OAAS found that DLP incidents are not consistently resolved in a timely manner. Specifically, the audit identified 4 out of 30 (or 13%) incidents tested within ACO that originated on January 4, 2016 with no action taken as of the date of audit fieldwork. Subsequent to OAAS' inquiry, the DLP Coordinator closed the incidents on January 5, 2018. However, they did not provide evidence that a review was conducted.

According to the Enterprise DLP Guidelines, the DLP Coordinator is responsible for analyzing DLP incidents, determining false positive, true positive/configuration issues, and updating the DLP incident in the system. Further, according to the California Civil Code 1798.29, a breach of data security should be disclosed in the most expedient time possible and without unreasonable delay. Delayed resolution of a potential data loss incident without justification could result in non-compliance with State law requirements.

While the CTO has provided training to DLP Coordinators on their responsibilities regarding analyzing, reviewing and reporting DLP incidents, the guidelines provided do not include procedures to ensure that the incident reviews are properly documented, monitored and resolved. In addition, the current guidelines provided by the CTO do not specify a reasonable timeframe of incident analysis and resolution. As such, there are no set criteria for departments to follow.

Recommendation:

To increase compliance with State mandates regarding notification of data breaches and ensure that DLP incident review is properly conducted, the CTO should:

1. Supplement existing guidelines for DLP Coordinators and include procedures to document incident review and resolution within the system. Also, within existing guidelines, establish a timeframe for conducting incident review to ensure compliance with State Regulation.

To ensure that DLP incidents are properly reviewed and resolved, CME, DEH, and ACO management should:

1. Document incident review and resolution within the system. If supporting documentation exceeds the system capacity, documentation should be maintained in an alternate location.

In addition, ACO should ensure that:

2. Incident review status is monitored and updated within the DLP system, including incidents that have been escalated for further review.

Office of Audits & Advisory Services

DEPARTMENT'S RESPONSE (COUNTY TECHNOLOGY OFFICE)



County of San Diego

MIKEL HAAS CHIEF INFORMATION OFFICER (619) 531-5570

COUNTY TECHNOLOGY OFFICE 1600 PACIFIC HIGHWAY ROOM 306F, SAN DIEGO, CA 92101 www.sandiegocounty.gov/cto

SUSAN GREEN **ASSISTANT CHIEF INFORMATION OFFIC** (619) 515-4337

October 22, 2018

RECEIVED

OCT 23 2018

TO:

Juan R. Perez, Chief of Audits

Office of Audits & Advisory Services

OFFICE OF AUDITS & ADVISORY SERVICES

FROM: Mikel Haas, Chief Information Officer

County Technology Office (CTO)

DEPARTMENT RESPONSE TO AUDIT RECOMMENDATIONS: Report No. A18-019 Data Loss Prevention Audit.

Finding 1: Monitoring and Tracking of Point of Sale (POS) Devices

DAAS Recommendation 1: Supplement existing guidelines for DLP Coordinators and include procedures to document incident review and resolution within the system. Also, within existing guidelines, establish a timeframe for conducting incident review to ensure compliance with State Regulation.

Action Plan: Agree. The DLP user guidelines will be updated to include:

- incident review and resolution procedures, a)
- timeframe for conducting incident review to ensure compliance with State Regulation. b)

Planned Completion Date: November 30, 2018

Contact Information for Implementation: Michael Teays, CISO

If you have any questions, please contact Mike Teays at (619) 316-5208.

Chief Information Officer

County Technology Office

CTO:MT:bm

DEPARTMENT'S RESPONSE (HEALTH AND HUMAN SERVICES AGENCY)



NICK MACCHIONE, FACHE AGENCY DIRECTOR

HEALTH AND HUMAN SERVICES AGENCY

DEAN ARABATZIS
CHIEF OPERATIONS OFFICER

1600 PACIFIC HIGHWAY, ROOM 206, MAIL STOP P-501 SAN DIEGO, CA 92101-2417 (619) 515-6555 • FAX (619) 515-6556

RECEIVED

OCT 18 2018

OFFICE OF AUDITS & ADVISORY SERVICES

Date: October 18, 2018

TO:

Juan R. Perez

Chief of Audits

FROM: Christy Carlson, Group Program Manager

HHSA, Agency Compliance Office

DEPARTMENT RESPONSE TO AUDIT RECOMMENDATIONS: DATA LOSS PREVENTION AUDIT

Finding 1: Data Loss Prevention Procedures Need Improvement

OAAS Recommendation #1: Document incident review and resolution within the system. If supporting documentation exceeds the system capacity, documentation should be maintained in an alternate location.

Action Plan: ACO agrees that including additional information in the DLP system will provide greater clarity of issue resolution. HHSA ACO has developed an 'HHSA DLP Coordinators Procedures' to supplement the 'Enterprise Data Loss Prevention Guidelines' developed by the CTO, which includes the following requirements:

- Incident status of 'new' shall be updated to indicate that the incident was reviewed and was either 'escalated' for further investigation or 'closed'.
- A reason code for incident status change will be required within the system.
- Incidents that are escalated will be investigated by the HHSA DHRO and all records relating to the investigation will be maintained confidentially within HHSA Human Resources.
- Incidents will be 'closed' within the system by DLP coordinators after the HHSA DHRO completes their investigation.

ACO will provide oversight of the process and review DLP reports monthly to ensure timely investigation and DLP status update. The updated HHSA DLP Coordinator Procedures will be provided at the standing HHSA DLP Coordinator – Quarterly Meeting scheduled on October 31, 2018.

Planned Completion Date: October 31, 2018

Contact Information for Implementation: Pilar Miranda, Privacy Officer

OAAS Recommendation #2: Incident review status is monitored and updated within the DLP system, including incidents that have been escalated for further review.

Action Plan: ACO agrees that monitoring of the DLP reports provides additional assurance that HHSA data is being properly safeguarded. As noted above ACO provides oversight of the process and monitors DLP reports monthly to ensure timely investigation and DLP status update.

Planned Completion Date: Completed

Contact Information for Implementation: Pilar Miranda, Privacy Officer

If you have any questions, please contact me at (619) 338-2807

Christy Carlson

Group Program Manager

DEPARTMENT'S RESPONSE

(MEDICAL EXAMINER'S DEPARTMENT)



GLENN N. WAGNER, D.O. CHIEF MEDICAL EXAMINER (858) 694-2895 MEDICAL EXAMINER'S DEPARTMENT
5570 OVERLAND AVE, STE 101, SAN DIEGO, CA 92123-1215
http://www.sandiegocounty.gov/epe

STEVEN C. CAMPMAN, M.D. CHIEF DEPUTY MEDICAL EXAMINER (858) 694-2865

October 18, 2018

RECEIVED

OCT 22 2018

TO:

Juan R. Perez

Chief of Audits

OFFICE OF AUDITS & ADVISORY SERVICES

FROM:

Glenn N. Wagner, D.O., Chief Medical Examiner

Medical Examiner's Department

DEPARTMENT RESPONSE TO AUDIT RECOMMENDATIONS: DATA LOSS PREVENTION AUDIT

Finding I: Data Loss Prevention Procedures Need Improvement

OAAS Recommendation: Document incident review and resolution within the system. If supporting documentation exceeds the system capacity, documentation should be maintained in an alternate location.

Action Plan: During the audit a recommendation was made and immediately implemented to provide a comment to each incident during the DLP review. Following the exit conference with OAAS staff, the Medical Examiner DLP coordinator is now adding their initials and date of review for each incident.

Planned Implementation Date: Completed

Contact Information for Implementation: Theresa Liget, Administrative Services Manager

If you have any questions, please contact me at (858) 694-3072.

GW:tl

Attachment: DLP incident closure

Chief Medical Examiner

DEPARTMENT'S RESPONSE

(DEPARTMENT OF ENVIRONMENTAL HEALTH)



County of San Diego

ELISE ROTHSCHILD

DEPARTMENT OF ENVIRONMENTAL HEALTH

P.O. BOX 129261, SAN DIEGO, CA 92112-9261 Phone: (858) 505-6700 or (800) 253-9933 Fax: (858) 505-6786 www.sdcdeh.org AMY HARBERT ASSISTANT DIRECTOR

October 19, 2018

RECEIVED

TO: Juan R. Perez

Chief of Audits

OCT 23 2018

FROM: Amy Harbert, Assistant Director

Department of Environmental Health

OFFICE OF AUDITS & ADVISORY SERVICES

SUBJECT: DEPARTMENT RESPONSE TO AUDIT RECOMMENDATIONS: DATA LOSS

PREVENTION AUDIT

Finding I: Data Loss Prevention (DLP) Procedures Need Improvement

OAAS Recommendation: Document incident review and resolution within the system. If supporting documentation exceeds the system capacity, documentation should be maintained in an alternate location.

Action Plan: DEH agrees with the audit recommendations. The following actions were taken:

1. DEH's process was to review all DLP items, and when needed, take further action. However, the review effort was not being documented as written comments within the system. DEH agrees with the audit recommendation that written documentation of all actions, including the review step, is a good enhancement for documentation. DEH has developed a written procedure to address all findings and is documenting the review and resolution details of the DLP incident as comments in the system.

Completion Date: DEH began implementing this documentation enhancement on March 29, 2018. On June 11, 2018, a written procedure for this process was also formalized.

Contact Information for Implementation: Ryan Baxter, Information Technology Analyst

If you have any questions, please contact me at (858) 505-6672.

Amy Harbert Assistant Director

y Harbert