



UNIVERSITY OF CALIFORNIA

Office of Ethics, Compliance & Audit Services

Internal Audit Monthly Webinar Series

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Face the Future with Confidence

The Need for Robust HIPAA Security Risk Analysis Processes

Matt Jackson
Director, Protiviti

Kevin Dunnahoo
Senior Manager, Protiviti

INTRODUCTION & INDUSTRY BUZZ

IN THE NEWS



THE THREAT IS REAL

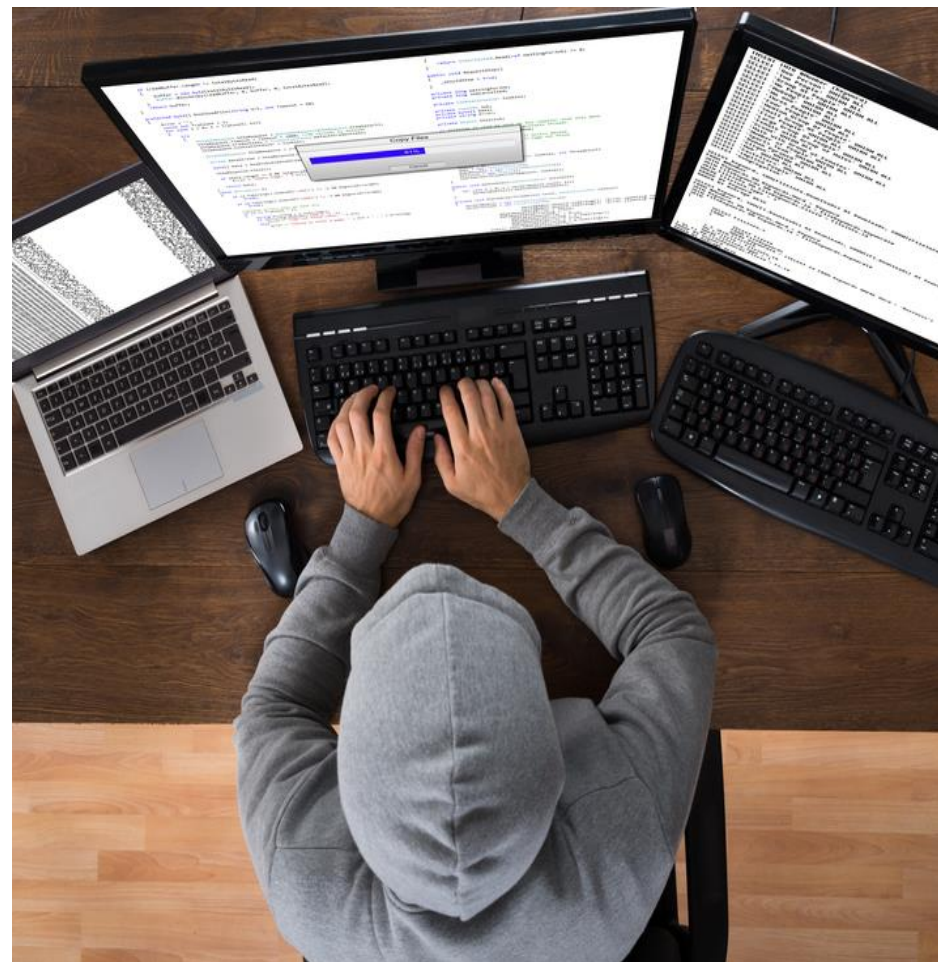
89% of healthcare organizations surveyed have suffered **at least one** data breach in the **last 2 years**

45% of CEs have experienced more than five data breaches over the past 2 years

61% of BAs experienced data breaches

Data breaches could be costing the U.S. healthcare industry an average of \$6.2 billion annually

The average economic impact of data breaches per organization is \$2.2 million



Source: *Sixth Annual Study on Patient Privacy & Security of Healthcare Data*. Ponemon Institute, May 2016

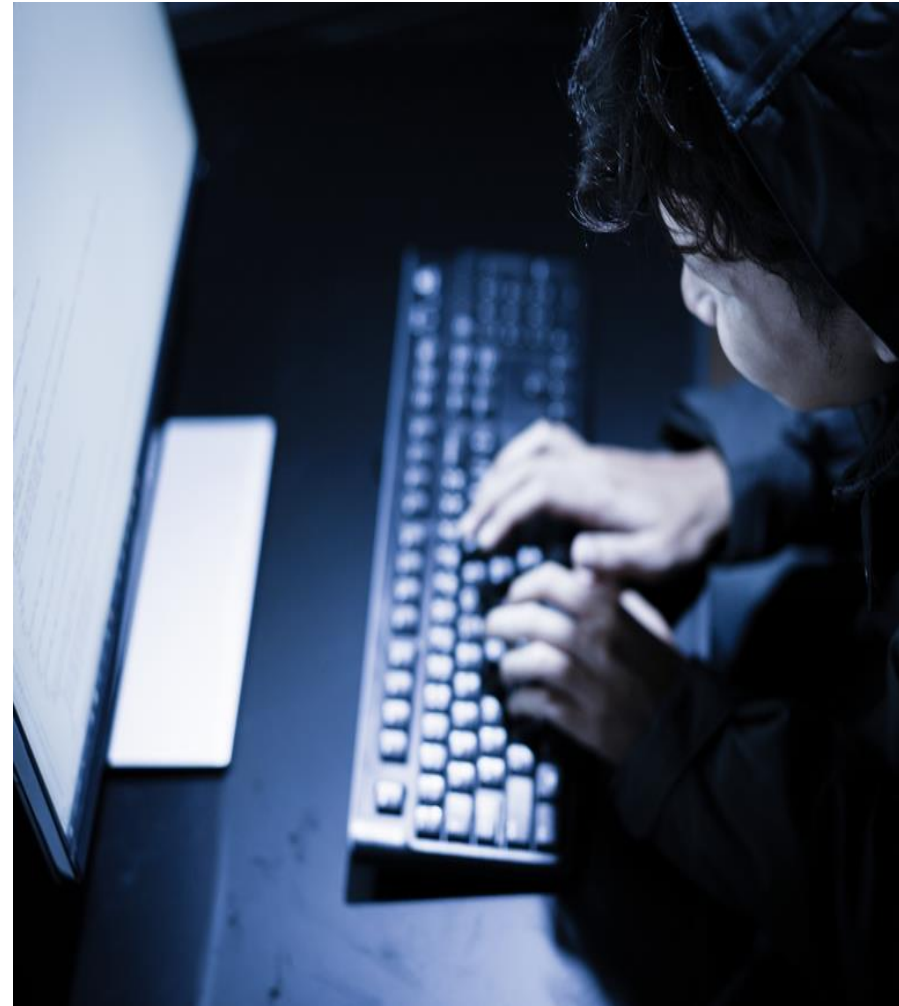
THE THREAT IS REAL

Criminal attacks are now the number-one cause of data breaches (cyber-attacks, malicious insiders, and/or paper medical file theft).

Attacks are targeting medical files and billing / insurance records.

CEs say 48% of medical identity theft's root cause was an unintentional employee action (phishing, social engineering, etc.).

Medical information is sold on the black market typically at a premium, reports range widely on the actual cost, but they go for well above the cost of stolen credit card info.



Source: Sixth Annual Study on Patient Privacy & Security of Healthcare Data. Ponemon Institute, May 2016

ENFORCEMENT IS HERE - AUDITS

Phase II will mostly consist of “desk audits,” but some will be selected for more comprehensive onsite audits during 2017.

All entities are eligible for selection for the onsite audits EVEN those who have already gone through a desk audit.

A report of the summarized findings will be created and made available sometime after the conclusion of the audits in 2017.

Desk Audit Scope

- Covered Entities and Business Associates
- Privacy – Notice of Privacy Practices (does not apply to BAs)
- Breach Notification – Timing and Content of Breach Notifications or Breach Risk Assessments
- Security – Risk Analysis and Risk Management

Audit Protocols – Updated and available now

- <http://www.hhs.gov/hipaa/for-professionals/compliance-enforcement/audit/protocol-current/index.html>

ENFORCEMENT IS HERE - INVESTIGATIONS

HIPAA compliance reviews and complaint investigations are even more thorough than the Phase II audits

Complaint Investigation – complaint driven

Compliance Review – breach driven

HIPAA Penalties vs. Settlements

- OCR most often “settles” and creates “corrective action plans”
- These amounts are vastly reduced compared to what they could enforce through actual civil monetary penalties under the HITECH Act

Trending Issues

- Lack of BAA
- BAA not updated after HITECH
- Incomplete or inaccurate Risk Analysis
- Lack of transmission security
- Patching of software
- Audit logs
- Insider threat
- Improper disposal
- Insufficient backup and contingency planning

AREA OF SCRUTINY



Deficient Risk Analysis!

EVALUATION VS. RISK ANALYSIS



Evaluation §164.308(a)(8)

- Gap assessment comparing compliance practices against the individual standards/requirements
- Guidance may be found at:
<http://www.hhs.gov/ocr/privacy/hipaa/administrative/securityrule/securityruleguidance.html>



Risk Analysis §164.308(a)(1)(ii)(A) and Risk Management §164.308(a)(1)(ii)(B)

- Identify and assess risks to all of your ePHI
- Take action to reduce risks and vulnerabilities to a reasonable and appropriate level
- Guidance may be found at:
<http://www.hhs.gov/ocr/privacy/hipaa/administrative/securityrule/rafinalguidance.html>

PERFORMING AN EVALUATION

OCR HIPAA Audit Protocol has been updated

Foundational starting point

Significantly enhanced, but still does not guarantee compliance

The screenshot shows the HHS.gov website with the "Health Information Privacy" section. The "Audit Protocol - Current" page is displayed, featuring a navigation menu on the left and a main content area on the right. The navigation menu includes categories like "HIPAA for Individuals", "Filing a Complaint", "HIPAA for Professionals", and "Newsroom". The main content area contains the title "Audit Protocol - Current", a paragraph explaining the OCR HIPAA Audit program, and a list of bullet points detailing the audit protocol's scope. The list includes requirements for privacy practices, administrative requirements, security safeguards, and breach notification. A note mentions the protocol's update to reflect the Omnibus Final Rule, and a section of general instructions follows, providing specific guidance for auditors.

HHS.gov U.S. Department of Health & Human Services

Health Information Privacy

HIPAA for Individuals Filing a Complaint HIPAA for Professionals Newsroom

Audit Protocol - Current

The OCR HIPAA Audit program analyzes processes, controls, and policies of selected covered entities pursuant to the HITECH Act audit mandate. OCR established a comprehensive audit protocol that contains the requirements to be assessed through these performance audits. The entire audit protocol is organized around modules, representing separate elements of privacy, security, and breach notification. The combination of these multiple requirements may vary based on the type of covered entity selected for review.

- The audit protocol covers Privacy Rule requirements for (1) notice of privacy practices for PHI, (2) rights to request privacy protection for PHI, (3) access of individuals to PHI, (4) administrative requirements, (5) uses and disclosures of PHI, (6) amendment of PHI, and (7) accounting of disclosures.
- The protocol covers Security Rule requirements for administrative, physical, and technical safeguards
- The protocol covers requirements for the Breach Notification Rule.

The protocol is available for public review and searchable by keyword(s) in the table below.

Please note the protocol has been updated to reflect the Omnibus Final Rule. You may submit feedback about the audit protocol to OCR at OSOCRAudit@hhs.gov.

General Instructions:

1. Where the document says "entity," it means both covered entities and business associates unless identified as one or the other;
2. Management refers to the appropriate privacy, security, and breach notification official(s) or person(s) designated by the covered entity or business associate for the implementation of policies and procedures and other standards;
3. The auditor will be provided certain documents and items for review; not necessarily all policies and procedures;
4. Unless otherwise specified, all document requests are for versions in use as of date of the audit notification and document request;
5. Unless otherwise specified, selected entities should submit documents via OCR's secure online web portal in PDF, MS Word or MS Excel formats;
6. If the requested number of documentations of implementation is not available, the entity must provide instances from previous years to complete the sample. If no documentation is available, the entity must provide a statement to that effect.
7. Workforce members include entity employees, contractors, students, and volunteers; and,
8. Information systems include hardware, software, information, data, applications, communications, and people.

Source: HHS.gov

PERFORMING AN EVALUATION

2.3 Security Gap Evaluation - Observations and Recommendations Matrix

Standards / Requirement	Specification / Detail	Current Control Activities	Gaps / Improvement Opportunity	Management's Plan
Administrative Safeguards				
<p>Security Management Process §164.308(a)(1) §164.308(a)(1)(i) Implement policies to prevent, contain, and correct security violations.</p>	<p>Risk Analysis (Required) §164.308(a)(1)(ii)(A) Conduct an accurate and thorough assessment of the potential risks and vulnerabilities to the confidentiality, integrity, and availability of electronic protected health information held by the covered entity.</p>	<p>An annual risk analysis is required per the Information Security Risk Management policy that details the process. The policy requires that the IS Security Administrator produces a report annually detailing the risks to Client ABC's information resources and any remediation priorities.</p> <p>See Policy:</p> <ul style="list-style-type: none"> Information Security Risk Management 	<p>Gap: Although a policy exists, requiring an annual risk analysis, a sufficient and documented risk analysis does not appear to be performed every year.</p> <p>Client ABC should ensure that a formal risk analysis is completed and documented on an annual basis in accordance with OCR's July 2010 <u>"Guidance on Risk Analysis Requirements under the HIPAA Security Rule."</u> Minimally, this annual risk analysis should meet the nine key elements as defined by the OCR guidance which includes:</p> <ul style="list-style-type: none"> Scope of the Analysis Data Collection Identify and Document Potential Threats and Vulnerabilities Assess Current Security Measures Determine the Likelihood of Threat Occurrence Determine the Potential Impact of Threat Occurrence Determine the Level of Risk 	<p><i>TBD</i></p>

CYBERSECURITY CONSIDERATIONS & RISK ANALYSIS PROCESSES

AREA OF SCRUTINY



While high-level guidance has been issued, there are no baseline standards from the federal government in support of “risk analysis” efforts.

OCR issued “Guidance on Risk Analysis Requirements under the HIPAA Security Rule” on July 14, 2010

- Definitions
- Elements of a Risk Analysis
- 9 pages

NIST SP 800-30 – Guide for Conducting Risk Assessments

- 41 pages

Guidance on Risk Analysis Requirements under the HIPAA Security Rule

Introduction

The Office for Civil Rights (OCR) is responsible for issuing annual guidance on the provisions in the HIPAA Security Rule.¹ (45 C.F.R. §§ 164.302 – 318.) This series of guidances will assist organizations² in identifying and implementing the most effective and appropriate administrative, physical, and technical safeguards to secure electronic protected health information (e-PHI). The guidance materials will be developed with input from stakeholders and the public, and will be updated as appropriate.

We begin the series with the risk analysis requirement in § 164.308(a)(1)(ii)(A). Conducting a risk analysis is the first step in identifying and implementing safeguards that comply with and carry out the standards and implementation specifications in the Security Rule. Therefore, a risk analysis is foundational, and must be understood in detail before OCR can issue meaningful guidance that specifically addresses safeguards and technologies that will best protect electronic health information.

The guidance is not intended to provide a one-size-fits-all blueprint for compliance with the risk analysis requirement. Rather, it clarifies the expectations of the Department for organizations working to meet these requirements.³ An organization should determine the most appropriate way to achieve compliance, taking into account the characteristics of the organization and its environment.

We note that some of the content contained in this guidance is based on recommendations of the National Institute of Standards and Technology (NIST). NIST, a federal agency, publishes freely available material in the public domain, including guidelines.⁴ Although only federal agencies are required to follow guidelines set by NIST, the guidelines represent the industry standard for good business practices with respect to standards for securing e-PHI. Therefore, non-federal organizations may find their content valuable when developing and performing compliance activities.

All e-PHI created, received, maintained or transmitted by an organization is subject to the Security Rule. The Security Rule requires entities to evaluate risks and vulnerabilities in their environments and to implement reasonable and appropriate security measures to

¹ Section 13401(c) of the Health Information Techno

² As used in this guidance the term “organizations”

³ The HIPAA Security Rule: Health Insurance Refo

⁴ The 800 Series of Special Publications (SP) are av

NIST
National Institute of
Standards and Technology
Technology Administration
U.S. Department of Commerce

Special Publication 800-30

Posted July 14, 2010

**Risk Management Guide for
Information Technology Systems**

Recommendations of the National Institute of
Standards and Technology

ELEMENTS OF A RISK ANALYSIS

1 Scope of Analysis: an organization's risk analysis should include the potential risks and vulnerabilities to the confidentiality, availability and integrity of all ePHI that an organization creates, receives, maintains, or transmits. (45 C.F.R. § 164.306(a))

- All ePHI, regardless of the particular electronic medium in which it is created, received, maintained or transmitted or the source or location of its ePHI.
 - Hard Drives/USB Drives/Floppy Disks
 - CD/DVD
 - Cell Phones/PDAs
 - Backup Media/Transmission Media
 - Etc.

2 Data Collection: identify and document where the ePHI is stored, received, maintained or transmitted. (45 C.F.R. §§ 164.308(a)(1)(ii)(A) and 164.316(b)(1))

- Questionnaires, Interviews, Automated Scanning Tools

Source: OCR's "Guidance on Risk Analysis Requirements under the HIPAA Security Rule"

AREA OF SCRUTINY



Scope of your Risk Analysis is a big area for OCR



Audit protocol

- Does the entity...conduct an accurate and thorough assessment of the potential risks...to the confidentiality, integrity, and availability of all the ePHI it creates, receives, maintains, or transmits?
- Obtain and review the written risk analysis documentation for:
 - A defined scope that identifies all of its systems that create, transmit, maintain, or transmit ePHI
- The word “all” appears four different times in this one protocol



Resolution Agreements

- Failure to conduct risk analysis and implement risk management plans (MAPFRE 1/18/17 \$2.2m)
- Failure to conduct a thorough risk analysis of all of its ePHI (Lahey Hospital 11/24/15 \$850k)
- Neither entity had conducted an accurate and thorough risk analysis (New York Presbyterian and Columbia University 5/7/14 \$4.8m)

SCOPE – EXAMPLES

Applications	Asset Types
EHR	<ul style="list-style-type: none">• Desktops/Laptops• Server• SAN/Disk Array• Backup Tapes• USBs• Medical Devices• Printers• Mobile Devices
Email	<ul style="list-style-type: none">• Vendor Cloud• Desktops/Laptops• Mobile Devices (smartphones/tablets/etc.)
Network Shares	<ul style="list-style-type: none">• Server• Backup Tapes
Electronic Voicemail	<ul style="list-style-type: none">• Server• Backup Tapes• Desktops/Laptops

ELEMENTS OF A RISK ANALYSIS

- 3 Identify and Document Potential Threats and Vulnerabilities: identify and **document** reasonably anticipated threats and vulnerabilities to ePHI. (45 C.F.R. §§ 164.306(a)(2), 164.308(a)(1)(ii)(A), and 164.316(b)(1)(ii))
- Threat – “[t]he potential for a person or thing to exercise (accidentally trigger or intentionally exploit) a specific vulnerability.”
 - Natural – Floods, Earthquakes, Tornadoes, etc.
 - Human – Inadvertent data entry, malicious software upload, unauthorized access to confidential data
 - Environmental – Long term power failure, pollution, chemicals, liquid leaks
 - Vulnerability – “[a] flaw or weakness in system security procedures, design, implementation, or internal controls that could be exercised (accidentally triggered or intentionally exploited) and result in a security breach or a violation of the system’s security policy.”

Source: OCR’s “Guidance on Risk Analysis Requirements under the HIPAA Security Rule”

THREAT & VULNERABILITY – EXAMPLES

Assets	Threat	Vulnerability
Desktops, Laptops, Servers, etc.	Malware – theft of sensitive data	Lack of sufficient anti-malware (installed/updated)
Desktops, Laptops, Servers, SAN, etc.	Hacker – theft of sensitive data	Unpatched vulnerabilities in network systems
Desktops, Laptops, Smartphones, USBs, etc.	Burglar/Thief – theft of equipment	Media is not handled and guarded properly
Desktops, Laptops, Smartphones, USBs, etc.	Careless IT personnel – improper destruction/disposal or reuse of media	Media is not properly disposed of
Desktops, Laptops, Servers, SAN, etc.	System Cracker – social engineering	Employees are overly trusting and uneducated/unaware of social engineering tactics

ELEMENTS OF A RISK ANALYSIS

- 4 Assess Current Security Measures: assess and document the security measures an entity uses to safeguard ePHI (45 C.F.R. §§ 164.306(b)(1), 164.308(a)(1)(ii)(A), and 164.316(b)(1))
- Documentation – Policy, Procedure, Process, etc.
 - Practice – Physical or logical controls in place

Source: OCR's "Guidance on Risk Analysis Requirements under the HIPAA Security Rule"

SECURITY MEASURES – EXAMPLE

Assets	Threat	Vulnerability	Security Measures (Controls)
Desktops, Laptops, Smartphones, USBs, etc.	Burglar/Thief – theft of equipment	Media is not handled and guarded properly	1) Employees are educated to protect the physical security of the device on an annual basis
Desktops, Laptops, Servers, SAN, etc.	System Cracker – social engineering	Employees are overly trusting and uneducated/unaware of social engineering tactics	1) Employees are educated on social engineering threats annually 2) Social engineering tests are performed twice per year to assess employee awareness

ELEMENTS OF A RISK ANALYSIS

5

Determine the Likelihood of Threat Occurrence: **document** all threat and vulnerability combinations with associated likelihood estimates that may impact the confidentiality, availability and integrity of ePHI of an organization. (45 C.F.R. §§ 164.306(b)(2)(iv), 164.308(a)(1)(ii)(A), and 164.316(b)(1)(ii))

- Threat-source motivation and capability
- Nature of the vulnerability

Likelihood Level	Likelihood Definition
High	The threat-source is highly motivated and sufficiently capable, and controls to prevent the vulnerability from being exercised are ineffective.
Medium	The threat-source is motivated and capable, but controls are in place that may impede successful exercise of the vulnerability.
Low	The threat-source lacks motivation or capability, or controls are in place to prevent, or at least significantly impede, the vulnerability from being exercised.

Source: OCR's "Guidance on Risk Analysis Requirements under the HIPAA Security Rule" and NIST "SP 800-30 Risk Management Guide for Information Technology Systems"

ELEMENTS OF A RISK ANALYSIS

6 Determine the Potential Impact of Threat Occurrence: assess the magnitude of the potential impact resulting from a threat triggering or exploiting a specific vulnerability. (45 C.F.R. §§ 164.306(a)(2), 164.308(a)(1)(ii)(A), and 164.316(b)(1)(ii))

- Quantitative vs. Qualitative Assessment
- Loss of Integrity, Confidentiality, Availability

Magnitude of Impact	Impact Definition
High	Exercise of the vulnerability (1) may result in the highly costly loss of major tangible assets or resources; (2) may significantly violate, harm, or impede an organizations' mission, reputation, or interest; or (3) may result in human death or serious injury.
Medium	Exercise of the vulnerability (1) may result in the costly loss of tangible assets or resources; (2) may violate, harm, or impede an organization's mission, reputation, or interest; or (3) may result in human injury.
Low	Exercise of the vulnerability (1) may result in the loss of some tangible assets or resources or (2) may noticeably affect an organization's mission, reputation, or interest.

Source: OCR's "Guidance on Risk Analysis Requirements under the HIPAA Security Rule" and NIST "SP 800-30 Risk Management Guide for Information Technology Systems"

ELEMENTS OF A RISK ANALYSIS

7

Determine the Level of Risk: assign a risk level based on the average of the assigned likelihood and impact levels. (45 C.F.R. §§ 164.306(a)(2), 164.308(a)(1)(ii)(A), and 164.316(b)(1))

- Inherent Risk = Likelihood * Impact
- Residual Risk = Inherent Risk - Safeguards (Controls)

Risk Level	Risk Description and Necessary Actions
High	If an observation or finding is evaluated as a high risk, there is a strong need for corrective measures. An existing system may continue to operate, but a corrective action plan must be put in place as soon as possible.
Medium	If an observation is rated as medium risk, corrective actions are needed and a plan must be developed to incorporate these actions within a reasonable period of time.
Low	If an observation is described as low risk, the system's DAA must determine whether corrective actions are still required or decide to accept the risk.

Source: OCR's "Guidance on Risk Analysis Requirements under the HIPAA Security Rule" and NIST "SP 800-30 Risk Management Guide for Information Technology Systems"

RISK DETERMINATION – EXAMPLES

Assets	Threat	Vulnerability	Security Measures (Controls)	Likelihood	Impact	Risk Rating
Desktops, Laptops, Smartphones, USBs, etc.	Burglar/ Thief – theft of equipment	Media is not handled and guarded properly	1) Employees are educated to protect the physical security of the device on an annual basis	High (5)	High (5)	Critical (25)
Desktops, Laptops, Servers, SAN, etc.	System Cracker – social engineering	Employees are overly trusting and uneducated or unaware of social engineering tactics	1) Employees are educated on social engineering threats annually 2) Social engineering tests are performed twice a year to assess employee awareness	Moderate (3)	High (5)	High (15)

ELEMENTS OF A RISK ANALYSIS

8 Finalize Documentation: the Security Rule requires the risk analysis to be **documented** but does not require a specific format. (45 C.F.R. § 164.316(b)(1))

9 Periodic Review and Updates to the Risk Assessment: conduct continuous risk analysis to identify when updates are needed. (45 C.F.R. §§ 164.306(e) and 164.316(b)(2)(iii))

Source: OCR's "Guidance on Risk Analysis Requirements under the HIPAA Security Rule"

ELEMENTS OF RISK MANAGEMENT

Risk management is the **implementation of security measures** to sufficiently reduce an organization's risk of losing or compromising its ePHI and to meet the general security standards.



Example Risk Management Steps

- Develop and implement a risk management plan [this plan describes what will be done to further mitigate the identified risk].
- Implement security measures.
- Evaluate and maintain security measures.

Source: HHS "HIPAA Security Series, 6 Basics of Risk Analysis and Risk Management"

RISK MANAGEMENT – EXAMPLES

Assets	Threat	Vulnerability	Security Measures (Controls)	Likelihood	Impact	Risk Rating
Desktops, Laptops, Smartphones, USBs, etc.	Burglar/ Thief – theft of equipment	Media is not handled and guarded properly	1) Employees are educated to protect the physical security of the device on an annual basis	High (5)	High (5)	Critical (25)
<u>Risk Management Plan:</u> 1) Encrypt all devices that may receive ePHI. Implement a MDM Solution to manage these devices. 2) Use the MDM solution to perform monthly inventory checks to see if any devices have gone missing and investigate. 3) Remotely wipe any devices that cannot be located.				Responsible Party: CIO Remediation Date: 10/1/2017		

RISK MANAGEMENT – EXAMPLES

Assets	Threat	Vulnerability	Security Measures (Controls)	Likelihood	Impact	Risk Rating
Desktops, Laptops, Servers, SAN, etc.	System Cracker – social engineering	Employees are overly trusting and uneducated or unaware of social engineering tactics	<ol style="list-style-type: none"> 1) Employees are educated on social engineering threats annually 2) Social engineering tests are performed twice a year to assess the employees awareness 	Moderate (3)	High (5)	High (15)
<p><u>Risk Management Plan:</u></p> <ol style="list-style-type: none"> 1) Increase education to occur quarterly through a variety of different avenues. 2) Communicate the results of the social engineering tests to reaffirm the issue with the workforce. 3) Use real-life examples to further enhance awareness. 				<p>Responsible Party: Education Team Remediation Date: 12/31/2017</p>		

AREA OF SCRUTINY



OCR will be looking for evidence that you took action on the identified risks in some form or fashion.

Audit Protocol

- Obtain and review documentation demonstrating the security measures implemented and/or in the process of being implemented as a result of the risk analysis or assessment. Evaluate and determine whether the implemented security measures appropriately respond to the threats and vulnerabilities identified in the risk analysis according to the risk rating and that such security measures are sufficient to mitigate or remediate identified risks to an acceptable level.
- Have this information **documented**.

HIPAA Penalty Enforcement

- February 1, 2017 – OCR levied a \$3.2 million civil money penalty against Children’s Medical Center of Dallas for lack of addressing known security risks.
 - Encryption was identified as a risk in 2007, was not remediated until 2013.
 - Children’s suffered 2 breaches during this time that encryption would have protected against.

TRENDING RISK AREAS

RISKS TO LOOK FOR IN YOUR ENVIRONMENT

TRENDING RISK AREAS – VENDOR MANAGEMENT



- Vendors are a key part of many healthcare organization's business processes, but have also been an avenue for compromising of PHI/ePHI.
- Threat: Vendor's are not diligent in their security measures.
- Vulnerability: Vendor's lack of controls may put your data at risk.
- Recommended Controls:
 - Robust contracts and BAAs that specify the requirements to protect the data and implications for failure to do so
 - Vendor management and assessment process up-front and ongoing to assess the controls the vendor has in place. Could be accomplished through:
 - Reviewing SSAE16 SOC Reports (third party's assessment of controls)
 - Questionnaire to vendor
 - Audits of vendor to test controls effectiveness
 - Process to monitor for new vendors (working with Contracting/AP/Supply Chain, etc.)

TRENDING RISK AREAS – MEDICAL DEVICES



- Threats: Hackers, Patients, Malware, etc.
- Vulnerabilities: Unpatched vulnerabilities, out of date operating systems, default user/admin credentials, weak wireless encryption, etc.
- Recommend Controls:
 - Physically secure devices
 - Segment applicable network segments
 - Regular vulnerability scans
 - Implement a life cycle management program for devices
- Need to be managed throughout the entire life cycle:
 - Planning and Requirements
 - Procurement and Contracting
 - Implementation
 - Maintenance
 - Decommission



FDA RECALLED:

- Hospira Symbiq Infusion System – Cybersecurity vulnerability
- Alaris Medley Large Volume Pump – Defective part

TRENDING RISK AREAS – BUSINESS CONTINUITY / DISASTER RECOVERY



- With the increased reliance on electronic records and applications in the healthcare industry, the more important it is to have proper business continuity/contingency/disaster recovery plans in place.
- Threats: Natural disasters, man-made disasters, cyber attacks, IT changes, etc.
- Vulnerabilities: Proper business continuity and/or disaster recovery (IT) plans are not in place or are not actionable, plans are not tested for readiness, etc.
- Recommended Controls:
 - Detailed Business Impact Analyses to determine key technologies, people, and processes, and required recovery time objectives (RTOs) and recovery point objectives (RPOs).
 - Documented Business Continuity and Disaster Recovery Plans.
 - Regular testing of the plans including operationally how workforce would continue functioning without critical applications/network access/etc.
 - Regular testing of the ability to recover critical applications, and the associated timeframe for doing so through different scenarios.

TRENDING RISK AREAS – SOCIAL ENGINEERING



- Threats: Attackers External or Internal
- Vulnerabilities: Users not aware of social engineering tactics
- Recommended actions:
 - Education, education, education (upon hire, annual reminders, ad-hoc updates, learning experiences, etc.)
 - Testing of your users, perform phishing efforts, do physical walkthroughs, perform phone calls, etc.
 - Ensure other security controls are strong.
 - Use multi-factor authentication where possible (does not mean two different passwords)
 - Administer least-privilege access (network, apps, devices, etc.)
 - Segment the critical data
 - Perform proactive penetration testing and vulnerability assessments to identify weaknesses and address accordingly
 - Have good backups and a solid and ready Disaster Recovery Plan

TRENDING RISK AREAS – SOCIAL ENGINEERING

Hotel Confirmation

Hotel Confirmation

4021 Washington Avenue . Waco, Texas 76701 USA

1-251-752-4446 [Hotel Website](#) [Map & Directions](#) [Plan Your Stay](#)



Reservation Confirmation: 81864412

For [USERNAME]

SILVER ELITE

CHECK-IN DATE **Monday, November 2, 2015**
CHECK-IN TIME **03:00 PM**

CHECK-OUT DATE **Thursday, November 5, 2015**
CHECK-OUT TIME **12:00 PM**

[Modify your reservation](#)

[Cancel your reservation](#)

Dear [NAME],

We are pleased to confirm your reservation. Details about your booking, your room(s), and your destination can be found below.

Sincerely,

Waco Area Guest Services

Delivery Notice

Your package has been delivered

Tracking # 59519131219

Ship (P/U) date:
Friday, 11/4/15
San Francisco, CA
US



Delivery date:
Saturday, 11/7/15
7:47 AM

Shipment Details:

Our records indicate that the following package has been delivered.

Tracking number:	59519131219
Status:	Delivered
Reference:	254360
Delivered to:	Location
Service type:	Free- 2Day
Packaging type:	Your Packaging
Number of pieces:	1
Weight:	2.08 lbs lb.
Special handling/Services:	Hold at facility

TRENDING RISK AREAS – SOCIAL ENGINEERING

Payment Notification

Online Payment Confirmation

March 8, 2016 10:14:02 PDT
Transaction ID: 8D31201J89381234S

Hello [NAME]

You sent a payment of \$339.95 USD to boadn3lkl (boadn3lkl@yahoo.com)

Thank you for your recent transaction. To see all the payment details, log in to your account.

It may take a few moments for this transaction to appear in your account.

Seller
boadn3lkl
boadn3lkl@yahoo.com

Note to seller
You haven't included a note.

Description	Unit price	Qty	Amount
NO DESCRIPTION WAS PROVIDED Item# 2312912331141	\$339.95 USD	1	\$339.95 USD
Total			\$339.95 USD
Payment			\$339.95 USD

IMPORTANT: To dispute this charge or if you believe you are receiving this message by mistake, please visit the [resolution center](#).

Transaction Email ID PP843 - 43dDASg5ASD11.

[Privacy](#) | [Security](#)

© 2005-2016 All Rights Reserved

Secure Email

You have received a secure email from Secure Messages Inc. that may contain confidential information.

[Click here](#) to login and view your secure email by 2016-05-27 11:26 PDT.



Secured by Encryption. Copyright 1999 Secure Messages, Inc. All rights reserved.

***** INCOMING FAX REPORT *****

Date/Time: Wed 28 May, 2016 06:58:11 GMT

Pages: 2

Resolution: Normal

Remote ID: 385-567-7335

Line Number: 4

Description: Internal Only

To download/view file please [click here](#)

TRENDING RISK AREAS – RANSOMWARE

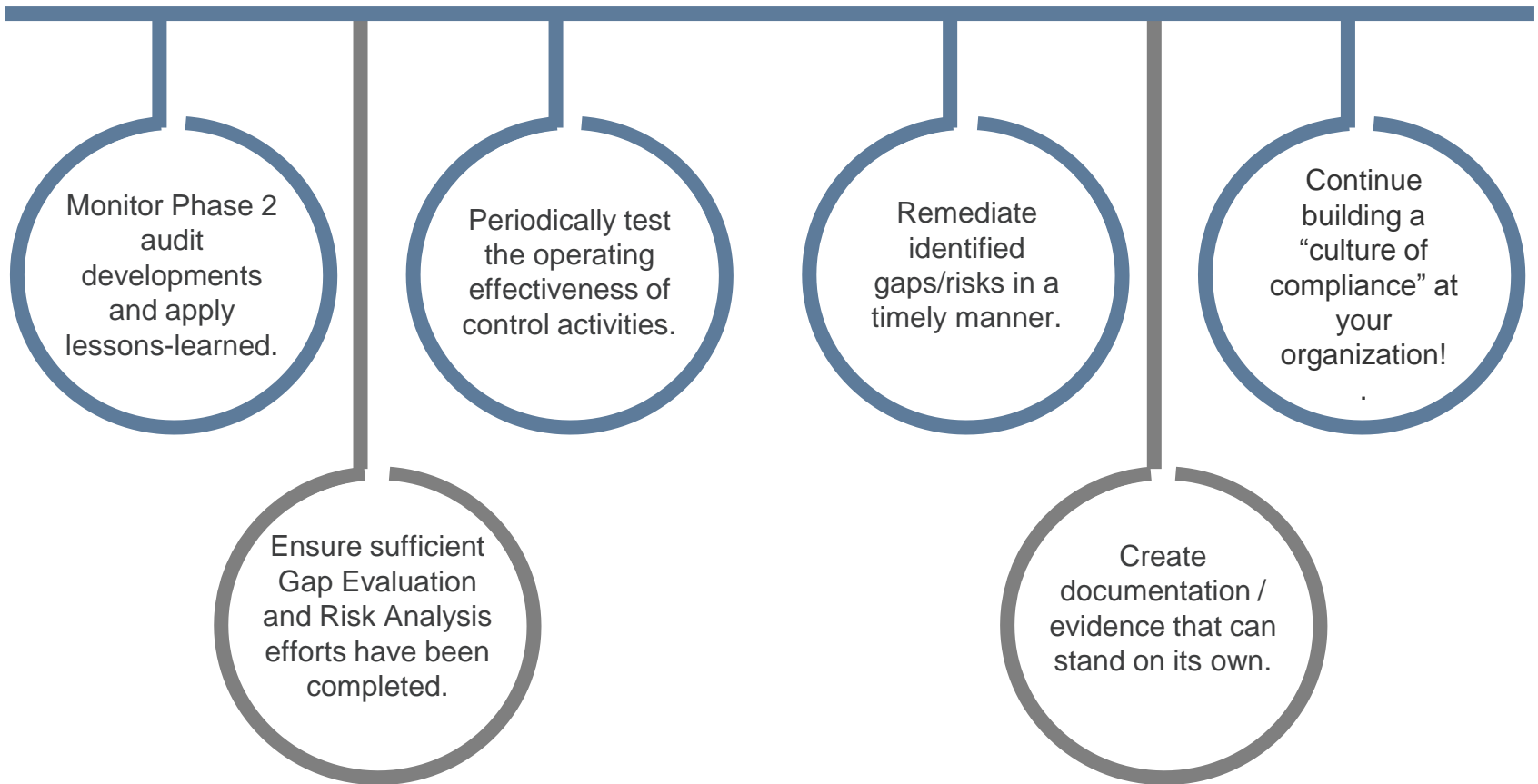


- Threats: Malware, Attackers External and Internal, Social Engineers/Phishing
- Vulnerabilities: Users not aware of threats, poor network security measures, lack of data backups
- Recommended Controls:
 - Education of workforce
 - Testing of network security controls through penetration testing
 - Testing of data backups and disaster recovery readiness
 - Block unnecessary tasks/privileges from users (block office macros, block executable file coming from external domains, restrict administrator tasks on workstations, etc.)
 - Have a plan

CLOSING REMARKS

WHAT YOU SHOULD BE DOING TODAY

Take action on the following:



CONTACT US

Matt Jackson

Director

matthew.jackson@protiviti.com

Phone: 469-374-2479



Matt is a founding member of Protiviti and is a Director in the Dallas office with more than 17 years professional experience providing operational, technology, and regulatory consulting and internal audit services to the healthcare industry. Matt serves as Protiviti's National Healthcare Information Technology and Security Solutions Leader. He is a frequent speaker on, and has published various articles related to, internal audit, compliance, and information technology improvement initiatives.

Kevin Dunnahoo

Senior Manager

kevin.dunnahoo@protiviti.com

Phone: 972-788-8529



Kevin is a Senior Manager with Protiviti's Dallas office and has more than 9 years of professional experience providing IT consulting and auditing services to the Healthcare industry. Kevin is a member of Protiviti's National Healthcare Practice and is a key lead for HIPAA Security Compliance services. In the Healthcare industry, Kevin has provided value to his clients through his insights and understanding of the HIPAA Security regulations, information security practices, business continuity, and IT audit. Kevin is a certified HCISPP, CISSP, ABCP, and HITRUST CSF Practitioner, and has also co-authored various Protiviti thought leadership whitepapers specifically related to HIPAA compliance and enforcement.

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