

Definition of Breach

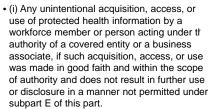
Breach

- Means the acquisition, access, use, or disclosure of protected health information in a manner not permitted under subpart E of this part which compromises the security or privacy of the protected health information.
 - (i.e. stolen laptop)



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(1) Breach excludes:





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Exclusions, con't.

- (ii) Any inadvertent disclosure by a person who is authorized to access protected health information at a covered entity or business associate to another person authorized to access protected health information at the same covered entity or business associate, or organized health care arrangement in which the covered entity participates, and the information received as a result of such disclosure is not further used or disclosed in a manner not permitted under subpart E of this part.
- Files that were transferred to wrong individuals within the organization – wrong name selected on email list

Exclusions, con't.

• (iii) A disclosure of protected health information where a covered entity or business associate has a good faith belief that an unauthorized person to whom the disclosure was made would not reasonably have been able to retain such information.



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Unauthorized/Improper Disclosure vs. **Breach**

Improper Disclosure

Within the organization, unintended receiver

Disclosure - not acquired, accessed or viewed

Breach

Outside the organization. cquired, accessed and/or viewed

Unknown recipient (stolen unencrypted laptop)

Breach Notification

The Final Rule was published on January 25, 2013 to be effective on March 23, 2013 with compliance required by September 23, 2013.

In 1996 HIPAA did In 1996 HIPAA did not require notification when patient PHI was inappropriately disclosed, covered entities may have chosen to include notification as part of the mitigation process. In 2009
ARRA/HITECH does require notification of certain breaches of unsecured PHI to the following:
Individuals
Department of Health and Human Services (HHS)
Media

On January 25, 2013, the Final Breach Notification Rule was published, requiring an entity to assess the probability that the protected health information has been or may be further compromised based on a risk assessment.

Application of Provisions and Penalties to Covered Entities 1996 CE responsible for BA, and subject to fines and penalties. HITECH/ARRA penalties introduced by increasing the fines and levels of penalties. Omnibus Rule- CE & BA responsible for the compliance and satisfactory assurances. Final modification which enhanced civil monetary penalties. Caris Consulting, LLC – 2015 HCCA

Penalty Considerations

- > Nature and extent of the violation
- > Nature and extent of the harm resulting from the violation
- > History or prior compliance with the administrative simplification provision, including violations by the covered entity or business associate, consideration of which may include but is not limited to:
 - Financial condition of the covered entity or business associate
 - Such other matters as justice may require

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Unsecure PHI

- > Unsecured PHI:
 - Means PHI that is not secured through the use of a technology or methodology specified by the "Guidance Specifying the Technologies and Methodologies that render PHI Unusable, Unreadable, or Indecipherable to Unauthorized Individuals for Purposes of the Breach Notification Requirements Under HITECH/ARRA; Request for information".

Compromising PHI Data

Data in Motion – data that is moving through a network, including wireless transmission;

Data at Rest – data that resides in databases, file systems, and other structured storage methods;

Data in Use – data in the process of being created, retrieved, updated, or deleted; or

Data Disposed – discarded paper records or recycled electronic media

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Have you implemented?



- > Encryption
 - Recommendations for the industry encryption standards to meet definition for "secured PHI"
- > Destruction
- Recommendations for the industry destruction standards to meet the definition of "secured PHI"
- > Storage
 - Recommendations for the industry storage of electronic media to meet the definition of "secured PHI"

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Risk Factors to Consider for Breach Notification

An acquisition, access, use, or disclosure of protected health information in a manner not permitted under subpart E is presumed to be a breach unless the covered entity or business associate, as applicable, demonstrates that there is a low probability that the protected health information has been compromised based on a risk assessment of at least the following factors:

- (1) The nature and extent of the protected health information involved, including the types of identifiers and the likelihood of re-identification
- (2) The unauthorized person who used the protected health information or to whom the disclosure was made
- (3) Whether the protected health information was actually acquired or viewed
- (4) The extent to which the risk to the protected health information has been mitigated

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Breach Discovery

- Discovery of an incident can be brought to your attention from internal systems or employees.
- Ensure appropriate policies and procedures are in place to identify and report a potential incident for further investigation
- · Clients or Patients can report an incident.
- Ensure all information about the data is obtained from the initial report. How was the information acquired, accessed or viewed, who received the information and whether or not the original information can be retained.
- External, non-related entities.
- Information that may have ended up at another organization but has been found or returned to the sender for further action.

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Breach Reporting

- Covered Entity/ Business Associate
- Agreements will specify the time reporting requirements for unauthorized uses and disclosures, incidents and breaches:
- Most agreements specify the information that is required within the
- A brief description of what happened, date of the breach, date of the discovery;
 Description of the types of unsecured PHI that were involved in the breach;
- Any steps individuals should take to protect themselves from potential harm resulting from the breach;
- Brief description of what the entity is doing to investigate the breach, to mitigate harm to individuals, and protect against future breaches; and
- Contact procedures for individuals to ask questions or learn additional information pertaining to the incident
- Reporting required to the covered entity no longer than 60 days from the date of discovery.

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Business Associate Impacts of Breach

Policies, procedures and training should be conducted to inform all employees handling e-PHI/PHI of the following breach tasks:

Identification

Investigation

Supporting documentation

· Notification letter to the Covered Entity

Breach Assessment

- · Evaluating the Incident
- Investigate the cause of the incident, define whether or not the incident is a breach by definition
- · Conduct the Breach Risk Assessment
- · Determine appropriate remediation
- Notify appropriate individuals
- LoProCo <u>Lo</u>w <u>Pro</u>bability that the data has been <u>Co</u>mpromised
- The Breach Risk Assessment should be completed immediately to determine whether or not there is a low probability of compromise
- If the conclusion is that there was a high probability of compromise

 notification is required

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Breach Assessment Low Probability **Factors** High Probability The nature and extent of the PHI involved, including Low probability that the information involved would High Probability the individuals can be the types of identifiers and the likelihood of reidentify who the individual(s) would be. identified. identification Was the unauthorized individual an ee of the Was the recipient someone other than a Who was the unauthorized person who received or accessed the PHI Covered Entity or another covered entity or an employee of a similar entity? entity that is required to protect Privacy? Whether the PHI was Is it probable that the Is there evidence that the actually acquired or viewed information was not information was acquired and /or viewed? Is it acquired or viewed? unknown? The extent to which the Were you able to get the PHI or make sure it was Were you unable to reduce the risk which in turn would risk to the PHI has been contribute to more than a low probability that the PHI properly destroyed? Caris Consulting, LLC - 2015 HCCA was compromised.

Breach Notification

- Covered Entity Plain language response
- · Notification to Individuals
- Written Notice (first-class mail / e-mail)
- Substitute Notice (out-of-date contact information, <10 individuals alternative communication, >10 individuals conspicuous notice for 90 days on the home page of the website.
- Additional Notice in Urgent Situations phone or other means
- Notification to the Media
- More than 500 residents of a State or jurisdiction, notify prominent media outlets serving the area;
- Without reasonable delay no later than 60 days after date of discovery;
- Content requirements remain the same.

Breach Notification

- · Notification to the Secretary
- Breaches involving 500 or more individuals, notification is required contemporaneously with the notice required to the individual and in the manner specified on the HHS Website.
- Breaches involving less than 500 must be logged and provided no later than 60 days after the end of each calendar year, report as required under the HHS Website.

To report a breach to the Secretary access this link:

 http://www.hhs.gov/ocr/privacy/hipaa/administr ative/breachnotificationrule/brinstruction.html

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Resolution Agreements

- HIPAA Settlement Underscores the Vulnerability of Unpatched and Unsupported Software
- \$800,000 HIPAA Settlement in Medical Records Dumping Case June 23, 2014
- Data Breach Results in \$4.8 Million HIPAA Settlements May 7, 2014
- Concentra Settles HIPAA Case for \$1,725,220 April 22, 2014
- QCA Settles HIPAA Case for \$250,000 April 22, 2014
- County Government Settles Potential HIPAA Violations March 7, 2014
- Resolution Agreement with Adult & Pediatric Dermatology, P.C. of Massachusetts December 20, 2013
- HHS Settles with Health Plan in Photocopier Breach Case August 14, 2013
- WellPoint Settles HIPAA Security Case for \$1,700,000 July 11, 2013
- Shasta Regional Medical Center Settles HIPAA Privacy Case for \$275,000 June 13, 2013
- Idaho State University Settles HIPAA Security Case for \$400,000 May 21, 2013

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Summary



- Analyze the incident against the definition of a breach
- Determine if it is a breach or unauthorized disclosure
- Investigate the incident, how many individuals are affected, why it happened, what can be done to prevent it in the future
- Conduct the Breach Risk Assessment
- Determine whether or not there is a Low Probability of Compromise or High Probability of Compromise
- Notify appropriate individuals

Un-Tech Your Tech:

A non-technical overview of Technical Safeguards, including network and end point security, describing available technology options for organizations of various sizes, to meet requirements.

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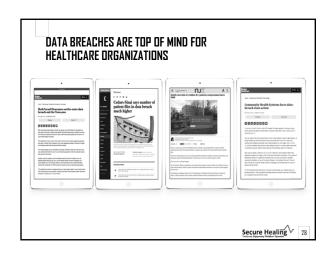
Agenda

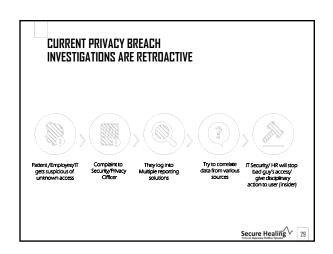
- The need of Security
- Information Security Basics
- Securing Data The ignored kind
- Recommended Open Source products

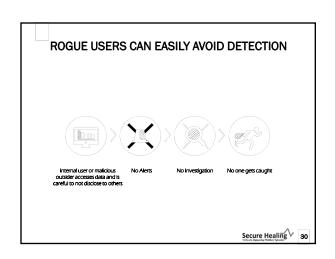
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Everything is networked









The Threat

- Cyber Criminals (financial data)
- Cyber-warriors (political/military)
- Corporate espionage (IP theft)
- Hacktivists (idealism)
- Individual Hackers (fame/thrill)
- Spammers (ad distribution)

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Covert Channels

- Clever misuse of network protocols
- Nearly undetectable
- Not that uncommon

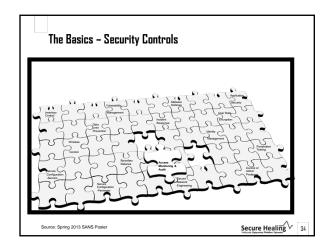


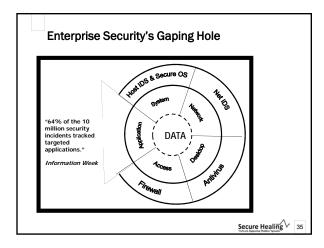
"They'll never see me coming!"

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The Basics - The OSI layers







Why Should I Care?

Let's just think this through...

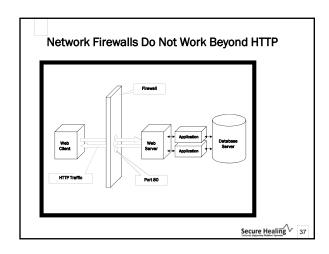
• How likely is a successful web application attack?

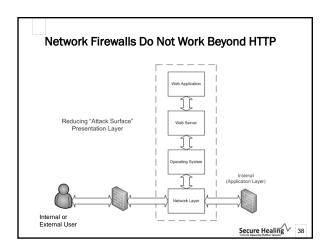
- Stunningly prevalent .. check the recent breach headlines
- Easy to exploit without special tools or knowledge
- Little chance of being detected

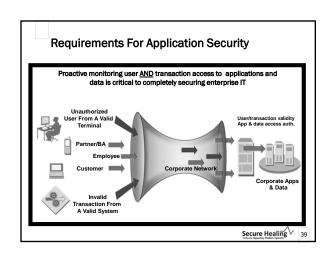
• Consequences?

- Disclosure of database contents
- Loss of authentication and access control for users
- Defacement
- Secondary attacks from your organization

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Layer-2, deep packet inspection firewalls do not see layer-7 attacks! Intent of attacks has shifted to financial gains. It used to be DoS/Disruptions The objective of attackers is to steal real world identity Today's Firewalls do not understand L7 protocols. Security Security Security Security Security Security Network Server Solver Caster, OWASP Solver Secure Healing 40

Monitoring

- Use IDS/IDP
- Offload logs to central repository
- Custom apps need to generate logs
- Understand what's going on situational awareness

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Sniffing

A sniffer is a program that monitors and analyzes network traffic and is used legitimately or illegitimately to capture data transmitted on a network



Defense-In-Depth

- Defense-in-depth is an information assurance (IA) strategy in which multiple layers of defense are placed throughout an information technology (IT) system.
- It addresses security vulnerabilities in personnel, technology and operations for the duration of the system's life cycle.

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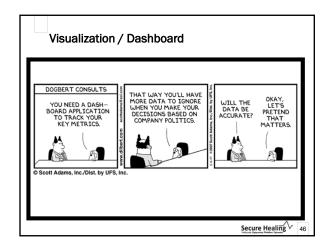
Defensive practices

- Firewall
 - Block outgoing unexpected ICMP or non-needed
 - traffic
- Intrusion Detection
 - Spotting known signatures
- Anomaly Detection
 - Spot unusual spikes in traffic/access
 - Any anomalous behavior (How hard is that?!)
- Disk Encryption
 - Does it stop malicious users/hackers?



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Visualization / Dashboard **Notice Scores and Generity** **Shouldery Software Scores** **Shoulder Stageand Capability** **Shoulder Stageand Capability



Summary

- Assume you will be targeted/hacked/breached by a rogue insider or malicious outsider
- Defenders need to look for indicators of compromise across many sources
- SIEM solution centralize data
- Start small with basic methods, test, and move to more advanced techniques
- Goal is to detect breach as early as possible and gather as much information as possible before starting incident response

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References

- Twenty Critical Security Controls for Cyber Defense: SANS/CAG
- Twenty Most Important Controls and Metrics for Effective Cyber Defense and Continuous FISMA Compliance by John Gilligan
- Security Metrics, Replacing Fear, Uncertainty and Doubt, Gary McGraw
- A Guide to Security Metrics (SANS Reading Room), Shirley C. Payne
- NIST Guides to Security http://csrc.nist.gov/publications/PubsSPs.html

Some New Open Source Security Products

- 1. Truecrypt: encrypt all the things.
- **2. Suricata**: leverages both signature and anomaly-based intrusion detection.
- **3. GRR Rapid Response:** An open source incident response tool currently in beta.
- **4. The Sleuth Kit:** The Sleuth Kit features a library and a collection of tools for investigating disk images, including volume and file system data.

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Thank you!

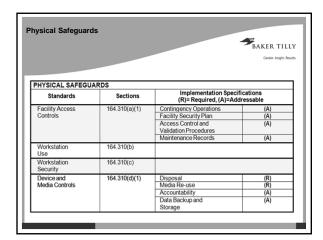
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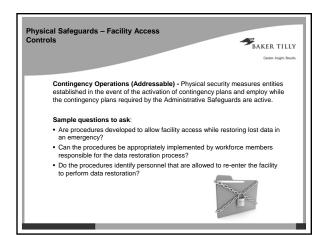
amit@securehealing.com Stop by at HCCA conference booth # 605

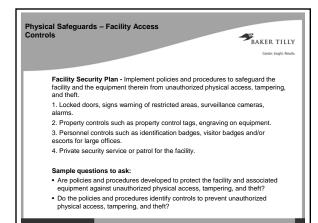
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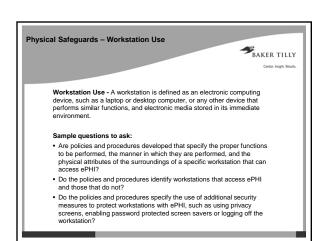




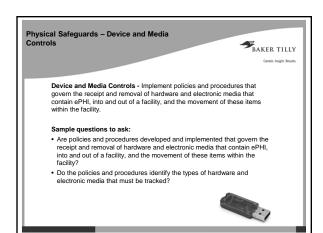


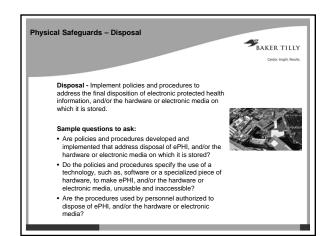
Physical Safeguards – Facility Access Controls Access Control & Validation Procedures - Implement procedures to control and validate a person's access to facilities based on their role or function. Sample questions to ask: • Are procedures developed to control and validate a person's access to facilities based on their role or function? • Do the procedures also identify visitor controls, such as requiring them to sign in, wear visitor badges and be escorted by an authorized person?

Physical Safeguards – Facilities Access Controls Maintenance Records - Implement policies and procedures to document repairs and modifications to the physical components of a facility which are related to security (for example, hardware, walls, doors and locks. Sample questions to ask: Are policies and procedures developed and implemented that specify how to document repairs and modifications to the physical components of a facility which are related to security? Do the policies and procedures specify all physical security components that require documentation?



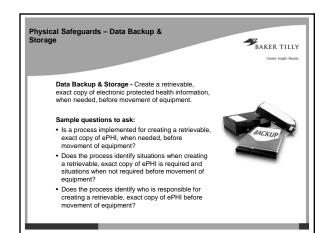
Physical Safeguards – Workstation Security Workstation Security - Implement physical safeguards for all workstations that access electronic protected health information, to restrict access to authorized users. Sample questions to ask: • Are physical safeguards implemented for all workstations that access ePHI, to restrict access to authorized users? • Have all types of workstations that access ePHI been identified, such as laptops, desktop computers, personal digital assistants (PDAs)? • Are current physical safeguards used to protect workstations with ePHI effective?

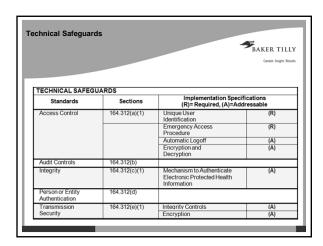


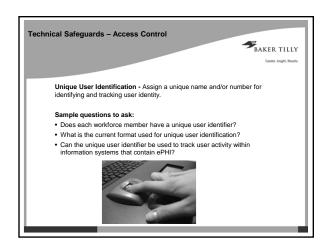


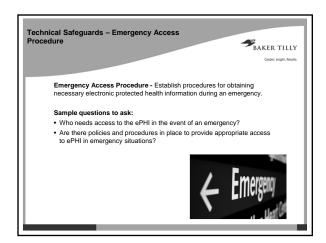
Physical Safeguards – Media Re-Use BAKER TILLY Control Player, Brank. Media Re-Use - Implement procedures for removal of electronic protected health information from electronic media before the media are made available for re-use. Sample questions to ask: • Are procedures developed and implemented for removal of ePHI from electronic media before re-use? • Do the procedures specify situations when all ePHI must be permanently deleted or situations when the electronic media should only be reformatted so that no files are accessible?

Physical Safeguards – Accountability Accountability - Maintain a record of the movements of hardware and electronic media and any person responsible therefore. Sample questions to ask: Is a process implemented for maintaining a record of the movements of hardware and electronic media containing ePHI? Have all types of hardware and electronic media that must be tracked been identified, such as hard drives, magnetic tapes or disks, optical disks or digital memory cards? If there are multiple devices of the same type, is there a way to identify individual devices and log or record them separately, such as a serial numbers or other tracking mechanisms?

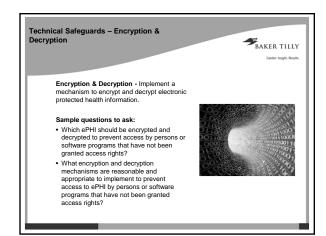


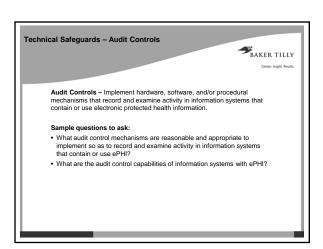






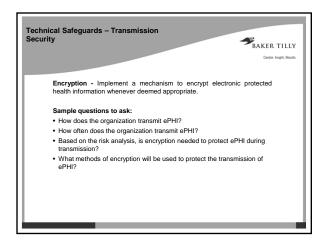
Technical Safeguards – Automatic Logoff BAKER TILLY Contro legist. Results. Automatic Logoff - Implement electronic procedures that terminate an electronic session after a predetermined time of inactivity. Sample questions to ask: • Do current information systems have an automatic logoff capability? • Is the automatic logoff feature activated on all workstations with access to ePHI?





Technical Safeguards – Person or Entity Authentication Person or Entity Authentication – Implement procedures to verify that a person or entity seeking access to electronic protected health information is the one claimed. Sample questions to ask: What types of authentication mechanisms are currently used? What level or type of authentication is reasonable and appropriate for each information system with ePHI? Are other authentication methods available that may be reasonable and appropriate?

Integrity Controls - Implement security measures to ensure that electronically transmitted electronic protected health information is not improperly modified without detection until disposed of. Sample questions to ask: • What security measures are currently used to protect ePHI during transmission? • Has the risk analysis identified scenarios that may result in modification to ePHI by unauthorized sources during transmission? • What security measures can be implemented to protect ePHI in transmission from unauthorized access?



Administrative Safeguards – Security Awareness BAKER TILLY Confor length Result.
Protection From Malicious Software (Addressable) – Procedures for guarding against, detecting, and reporting malicious software.
Security Reminders (Addressable) - Periodic security updates.
Log-In Monitoring (Addressable) - Procedures for monitoring log-in attempts and reporting discrepancies.
Password Management (Addressable) - Procedures for creating, changing, and safeguarding passwords.

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