Using a Controls Framework to Address NIST, HIPAA, and GDPR Security Requirements and to Ensure Management of Cyber Threats
LEADING CYBER THREATS AND REGULATORY RESPONSE
Ransomware Attacks

- Phishing and Ransomware
  - Security Awareness and Training and Security Reminders
  - Be Prepared
  - Practice!
HIPAA Breach Highlights

500+ Breaches by Type of Breach
9/1/2015 – 8/31/2018

- Hacking/IT: 31%
- Unauthorized Access/Disclosure: 42%
- Theft: 20%
- Loss: 5%
- Improper Disposal: 3%
Vendor Cyber Risk Management

- NIST Guidance: [https://www.nist.gov/cyberframework](https://www.nist.gov/cyberframework)
- Remote Access Issues
Insider Threat

- Organizations must “[i]mplement policies and procedures to ensure that all members of its workforce have appropriate access to electronic protected health information ... and to prevent those workforce members who do not have access ... from obtaining access to electronic protected health information,” as part of its Workforce Security plan. See 45 C.F.R. § 164.308(a)(3).

- Appropriate workforce screening procedures could be included as part of an organization’s Workforce Clearance process (e.g., background and OIG LEIE checks). See 45 C.F.R. § 164.308(a)(3)(ii)(B).

- Termination Procedures should be in place to ensure that access to PHI is revoked as part of an organization’s workforce exit or separation process. See 45 C.F.R. § 164.308(a)(3)(ii)(C).

- February 16, 2017: Memorial Healthcare System (MHS)
  - $5.5 Million
Transmission Security

- When electronically transmitting ePHI, a mechanism to encrypt the ePHI must be implemented whenever deemed appropriate. See 45 C.F.R. § 164.312(e)(2)(ii).
- Applications for which encryption should be considered when transmitting ePHI may include:
  - Email
  - Texting
  - Application sessions
  - File transmissions (e.g., ftp)
  - Remote backups
  - Remote access and support sessions (e.g., VPN)
- June 10, 2015: St. Elizabeth’s Medical Center (SEMC)
  - $218,400
  - [https://www.hhs.gov/hipaa/for-professionals/compliance-enforcement/examples/semc/index.html](https://www.hhs.gov/hipaa/for-professionals/compliance-enforcement/examples/semc/index.html)
Software Patching

- The use of unpatched or unsupported software on systems which access ePHI could introduce additional risk into an environment.
- Continued use of such systems must be included within an organization's risk analysis and appropriate mitigation strategies implemented to reduce risk to a reasonable and appropriate level.
- In addition to operating systems, EMR/PM systems, and office productivity software, software which should be monitored for patches and vendor end-of-life for support include:
  - Router and firewall firmware
  - Anti-virus and anti-malware software
  - Multimedia and runtime environments (e.g., Adobe Flash, Java, etc.)
Training

- Most settlements include a training requirement
- OCR Publishes a Monthly Cybersecurity Newsletter
- OCR YouTube Page
  - https://www.youtube.com/user/USGovHHSOCR
Recent HHS Security Enforcement Actions

- December 18, 2017: 21st Century Oncology
  - $2,300,000
  - $2.3 Million Levied for Multiple HIPAA Violations at NY-Based Provider

- February 1, 2018: Fresenius Medical Care North America (FMCNA)
  - $3,500,000
  - Five breaches add up to millions in settlement costs for entity that failed to heed HIPAA’s risk analysis and risk management rules

- June 18, 2018: MD Anderson
  - $4.3 Million CMP
  - Judge rules in favor of OCR and requires a Texas cancer center to pay $4.3 million in penalties for HIPAA violations

- October 15, 2018: Anthem
  - $16 Million
  - Anthem Pays OCR $16 Million in Record HIPAA Settlement Following Largest U.S. Health Data Breach in History
Recent FTC Security Enforcement Actions

- Nov 29, 2017:
  - FTC Gives Final Approval to Settlements with Companies that Falsely Claimed Participation in Privacy Shield

- Nov 8, 2017:
  - FTC Gives Final Approval to Settlement with Online Tax Preparation Service

- Aug 15, 2017:
  - Uber Settles FTC Allegations that It Made Deceptive Privacy and Data Security Claims

- Feb 27, 2018:
  - PayPal Settles FTC Charges that Venmo Failed to Disclose Information to Consumers About the Ability to Transfer Funds and Privacy Settings; Violated Gramm-Leach-Bliley Act

- June 6, 2018
  - U.S. Court of Appeals, 11th Circuit Ruling in LabMD, Inc.
CYBERSECURITY REQUIREMENTS/CONTROLS
GDPR Requirements

- In the European Union’s General Data Protection Regulation (GDPR), Article 32 requires, “Appropriate technical and organizational measures to ensure a level of security appropriate to the risk”
- Examples include:
  - Encryption
  - Pseudonymization
  - Business Continuity/Disaster Recovery
  - “Regularly testing, assessing and evaluating the effectiveness of technical and organisational measures”
  - Evaluating processors/contractors
Other International Standards

- Canada, Singapore, China, and many other countries have similar language in their laws as do data sharing frameworks internationally about “adequate” security
- Too vague to be implemented on its own
HIPAA Security Rule

- The HIPAA Security Rule (45 CFR Part 160 and Subparts A and C of Part 164) details the security requirements for HIPAA covered entities and business associates.
- A risk analysis and appropriate response thereto is key to HIPAA security compliance.
- Based on a review of the requirements from the Rule and the results of a risk analysis, an entity can identify gaps in its security posture and implement corrective action plans.
- The risk analysis can also serve as the basis for decision making regarding addressable requirements in the Security Rule.
Implementing the NIST Cybersecurity Framework and Addressing Regulatory Requirements for the Protection of Personal Data

FRAMEWORK-BASED RISK ANALYSIS AND CONTROL SPECIFICATION
The NIST Cybersecurity Framework

- Provides an overarching set of guidelines intended to provide consistency as well as depth, breadth and rigor of organizational cybersecurity programs
- Complements rather than replaces an organization’s existing business or cybersecurity risk management process and cybersecurity program
  - Simply because the NIST Cybersecurity Framework lacks the prescription necessary for an organization to implement a program that achieves the many and varied outcomes specified by the Core Subcategories … hence the Informative References
Informative References provide an incomplete specification of necessary controls
Do not necessarily address regulatory or due care and due diligence obligations
Risk Analysis According to HIPAA

- The end result of risk analysis is a control specification that is intended to mitigate the risk associated with all “reasonably anticipated threats” to the security of ePHI.
- Unfortunately, as is indicated by two rounds of OCR audits, traditional risk analysis is difficult, especially for smaller healthcare providers.
- *If only there was another way we could leverage the NIST Cyber Framework’s Core Illustrative References …*
NIST
Risk Management Framework (RMF)

- NIST RMF embodied in multiple FIPS & NIST SP 800-series publications
- Primary documents are FIPS 199 (categorization) & NIST SP 800-53 (controls)
- Risk analysis is of common threats to sensitive information the federal government uses, a set of vulnerabilities common to the types of technology, systems, and information architectures generally used by the federal government, and categorization of the impact due to a loss of information security
- An appropriate baseline is selected based on level of impact—low, moderate or high—which federal agencies select to complete the risk analysis
- Agencies are then expected to tailor the NIST baseline to their specific needs
Healthcare Overlays of NIST SP 800-53

- An overlay* is a fully specified set of security controls, enhancements and supplemental guidance derived through the tailoring process
- Overlays help organizations achieve standardized security capabilities, consistency of implementation, & cost-effective security solutions, & may support
  - Industry/sectors (e.g., healthcare, public health)
  - Information technology (e.g., medical devices, cloud services)
  - Coalitions/partnerships (e.g., Joint HITRUST™ certification & EHNAC accreditation)
  - Statutory/regulatory requirements (e.g., HIPAA, PCI)
- Overlays become the new “gold standard” for the intended “community-of-interest”
Leveraging the HITRUST Overlay

Diagram showing the relationship between NIST Cyber Framework Core Functions, HITRUST CSF Control Categories, HITRUST CSF Control Objectives, NIST Cyber Framework Target Profile, NIST Cyber Framework Current Profile, and NIST Cyber Framework Implementation Tiers.

Tailoring Process:
(NIST SP 800-53, Ch. 3)
## Comparison of Risk Analysis Approaches

<table>
<thead>
<tr>
<th>Traditional Risk Analysis</th>
<th>Framework-based Risk Analysis</th>
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<tr>
<td>• Must be applied to all assets where ePHI “lives”</td>
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<tr>
<td>• <strong>Must ensure a complete evaluation of anticipated threats &amp; known vulnerabilities</strong> (i.e., starting at 0%) to design a comprehensive set of information security controls</td>
<td>• <strong>Although significant tailoring is done to create the overlay</strong> (starting at 80%<em>), the organization <strong>must perform additional tailoring via a targeted risk analysis to address any unique threats &amp; vulnerabilities</strong> (for the additional 20%</em>)</td>
</tr>
<tr>
<td>• Must be applied intelligently to specific assets within the organization</td>
<td>• Must be applied intelligently to specific assets within the organization</td>
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* Analogous to the Pareto Principle (also known as the 80/20 Rule, the law of the vital few, or the principle of factor sparsity), which states that, for many events, roughly 80% of the results (effects) come from 20% of the effort (causes). In this case, an organization must only provide a limited amount of effort to obtain a near complete specification of the security controls required to address reasonably anticipated threats to the sensitive information it uses.
Guidance on implementing the NIST Cyber Framework leveraging the HITRUST RMF was developed through the Healthcare and Public Health (HPH) Government and Sector Coordinating Councils (GCC/SCC), which is a public-private partnership that includes DHS, HHS and numerous industry organizations and associations.

INCENTIVIZING USE OF CONTROLS FRAMEWORKS
Incentivizing Use of Controls Frameworks

- Company resources are limited, and while the C-suite is increasingly sensitive to privacy and security concerns, there are still issues getting sufficient resources to the necessary departments.
- While there is much research on the return on investment for privacy and security programs, a more solid foundation of recognition of the use of assurance programs based on controls frameworks would add clear ROI.
- We are already seeing companies requiring such assurance programs be used by third party vendors to control supply chain risk.
- Governmental recognition of these programs would increase their visibility at the C-suite level and provide additional incentives to adopt such programs.
- Some clichés are true – a data sharing system is only as strong as its weakest link.
- We need to encourage more privacy and security assurance program use to ensure the weakest link is not, in fact, weak.
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HITRUST 2018 Snapshot

Background
1. Founded in 2007
2. HITRUST Alliance, Inc. is a non-profit responsible for frameworks, standards and methodologies
3. HITRUST Service Corporation is a for-profit responsible for training and tools

Adoption
1. HITRUST CSF is utilized by 81% of US hospitals and health systems and 83% of US health plans
2. HITRUST CSF is the most widely adopted control framework in the healthcare industry, according to a 2018 HIMSS survey
3. HITRUST CSF Assurance program is the most widely adopted program for assessing third party risk

Best Known For
1. Developing the HITRUST CSF – 9th major release
   – Development guided by a CSF Advisory Council comprised of AHA, AMA, AHIP, AGMA and other security/privacy experts
   – Basis for the health and public sector implementation guidance for the NIST Cybersecurity framework, recognized by Department of Homeland Security (link) and Department of Health and Human Services (link)
   – Deemed an acceptable controls criteria by the AICPA for a SOC 2 examination
   – Identified as an appropriate standard to safeguard Internet of Things (IoT) by NIST (link)
2. Operating the healthcare industry’s Information Sharing and Analysis Organization (ISAO)
Visit www.HITRUSTAlliance.net for more information

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