



# The Impact of Social Engineering on Healthcare

August 18, 2022





# Agenda

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- What is Social Engineering?
- Phases of a Social Engineering Attack
- Types of Social Engineering
- Personality Traits of a Social Engineer and Social Engineering Behaviors/Scenarios
- Impact of Social Engineering and Data Breaches
- Steps to Protect Your Organization
- Resources

## Slides Key:



**Non-Technical:** Managerial, strategic and high-level (general audience)



**Technical:** Tactical / IOCs; requiring in-depth knowledge (sysadmins, IRT)



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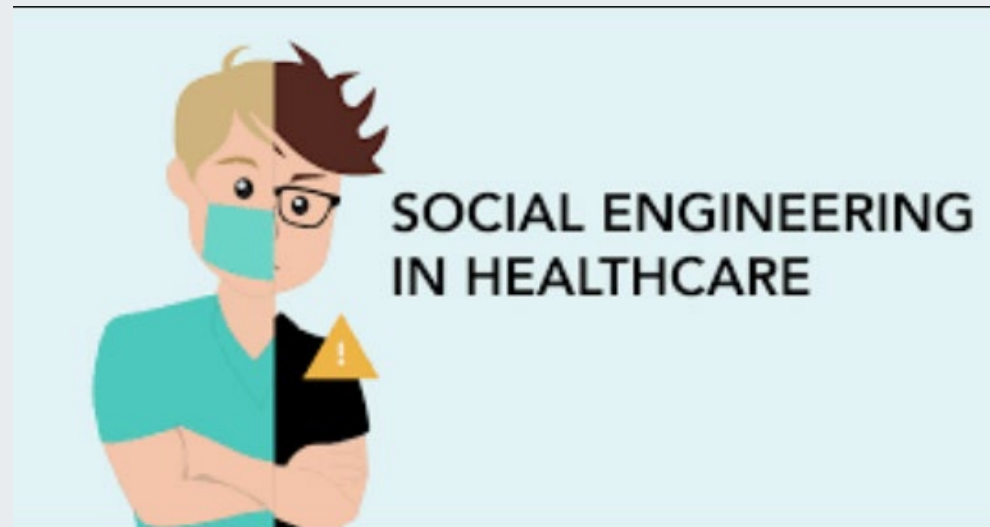
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# What is Social Engineering?

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Social engineering is the manipulation of human psychology for one's own gain. A social engineer can manipulate staff members into giving access to their computers, routers, or Wi-Fi; the social engineer can then steal Protected Health Information (PHI), Personal Identifiable Information (PII), and/or install malware posing a significant threat to the Health sector.



Source: Security Metrics

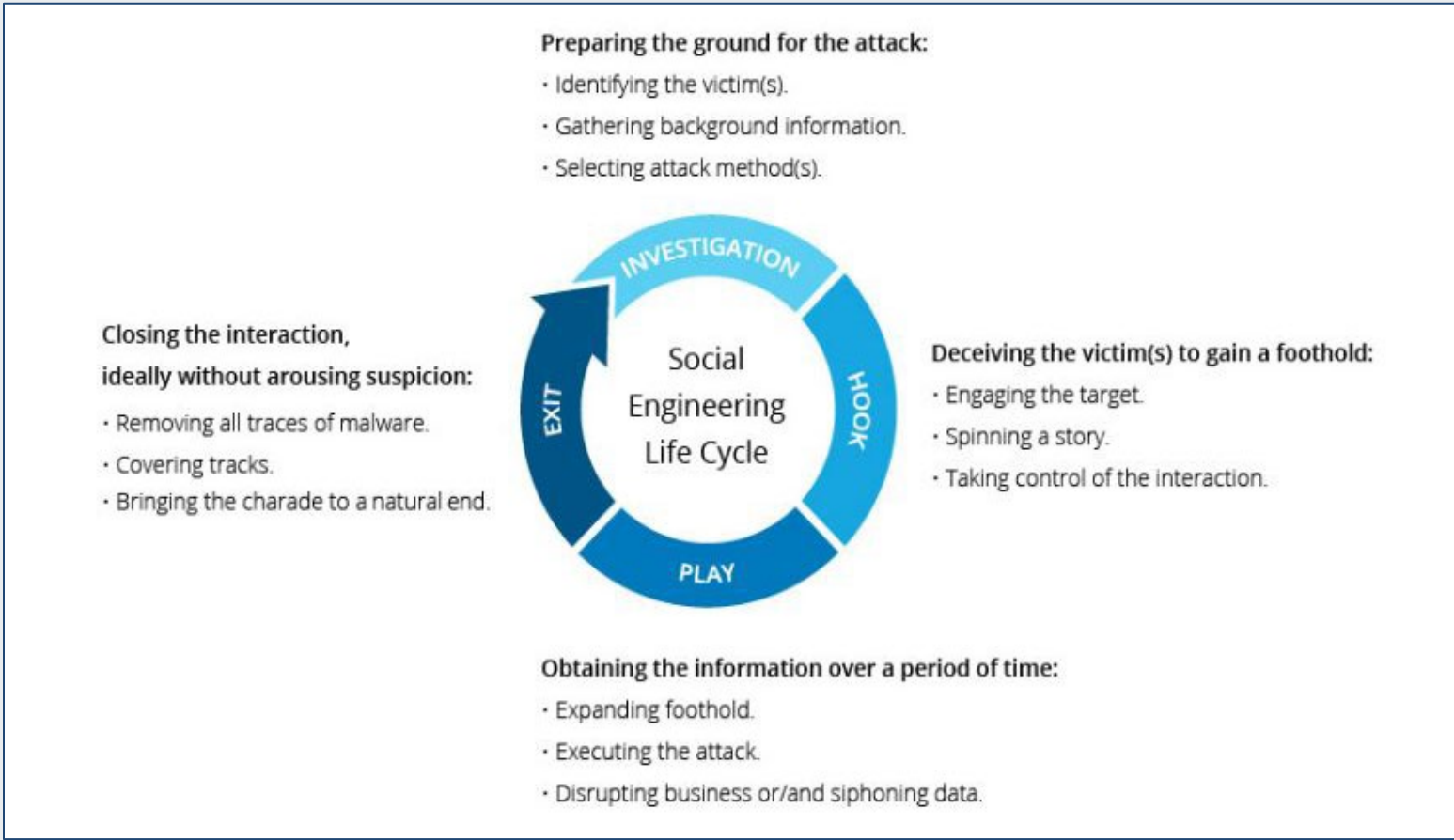


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# Phases of a Social Engineering Attack



Source: Imperva



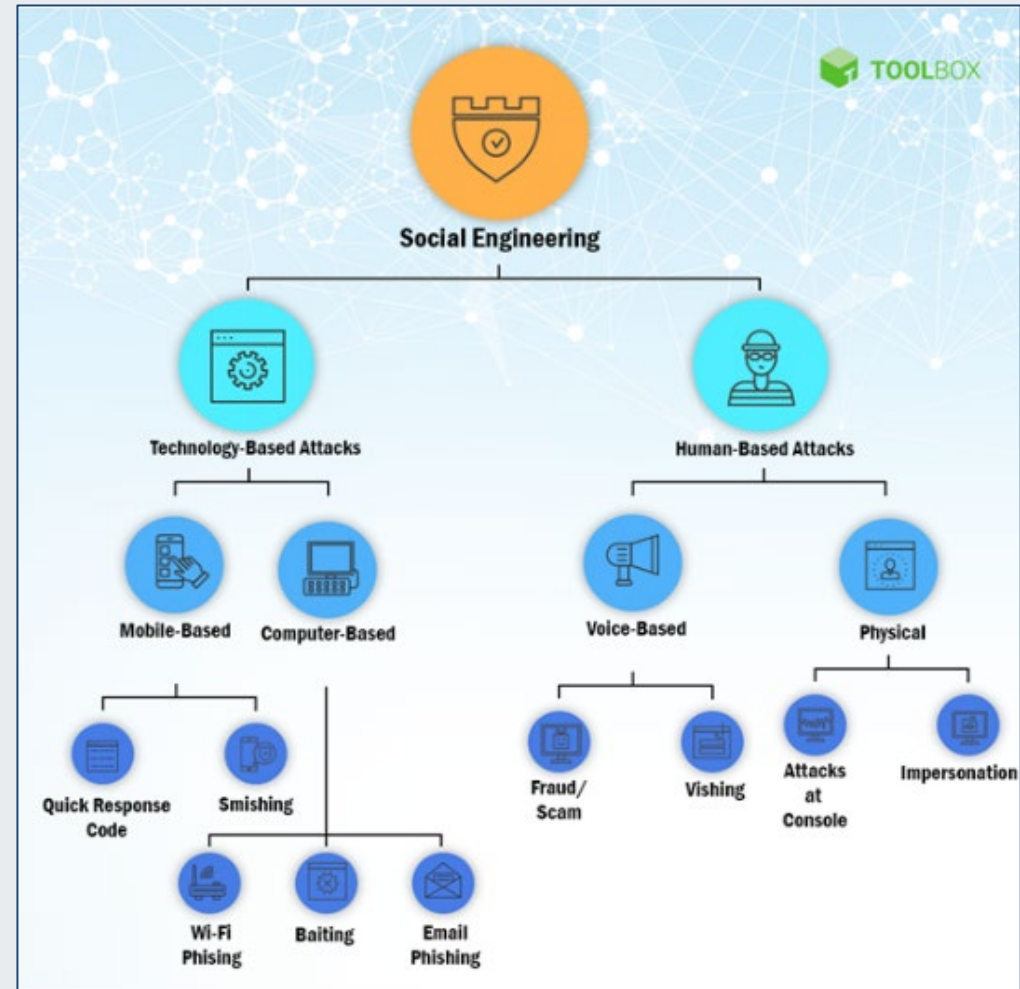
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# Types of Social Engineering Attacks

- Phishing
- Spearphishing
- Vishing
- Callback Phishing
- Business Email Compromise (BEC)
- Baiting
- Tailgating
- Deepfake Software
- Smishing
- Whaling



Source: SpiceWorks/Toolbox



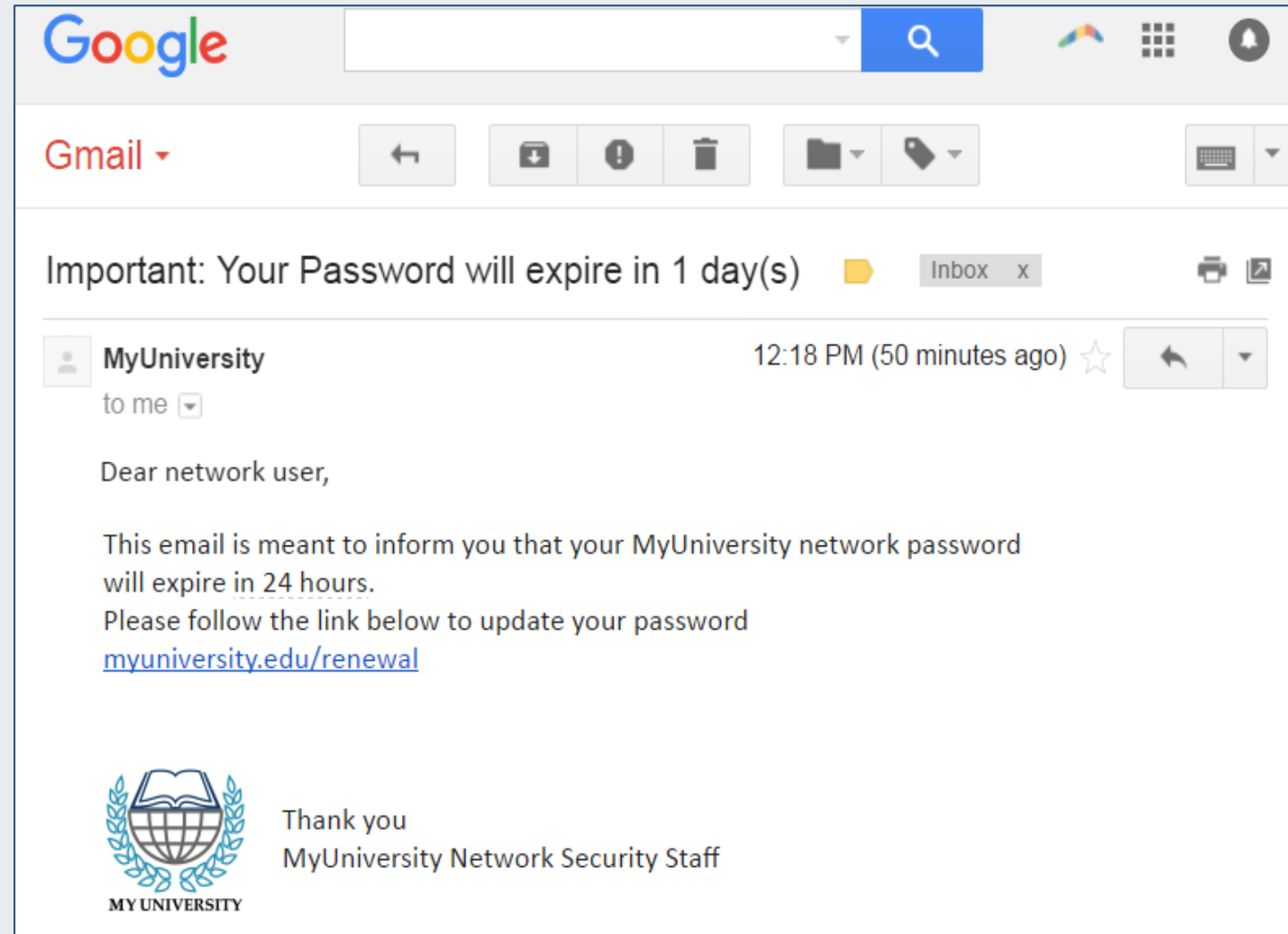
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# Phishing

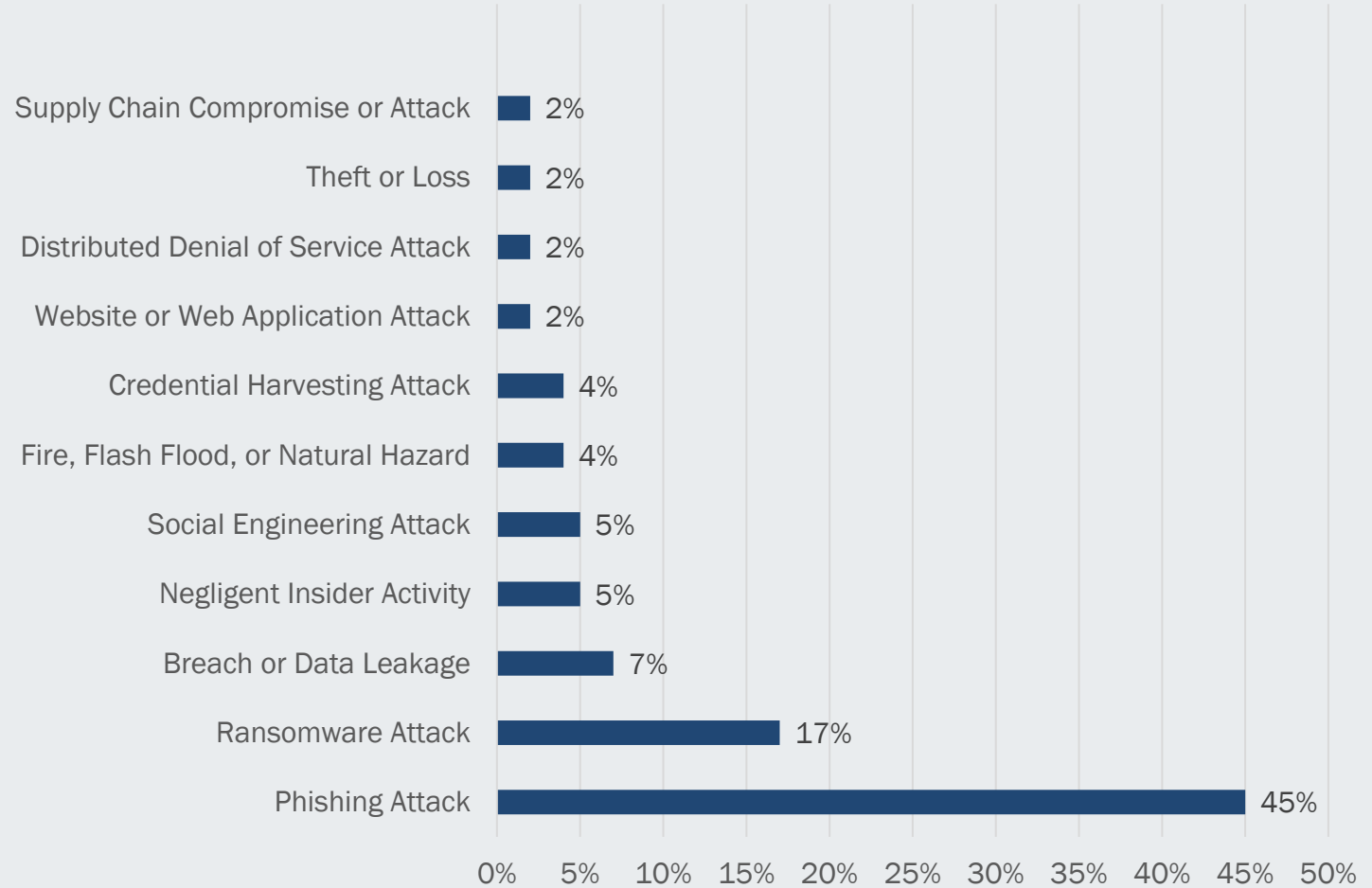
Phishing is a type of social engineering in which an attacker sends a fraudulent message designed to trick a person into revealing sensitive information, or to deploy malicious software onto the victim's infrastructure, such as ransomware.



Source: Imperva

# Phishing Attacks Top Threat to Healthcare

According to Carahsoft's 2021 HIMSS Healthcare Cybersecurity Survey, over a 12-month period, phishing attacks were the most common threat accounting for 45% of security incidents, followed by ransomware.



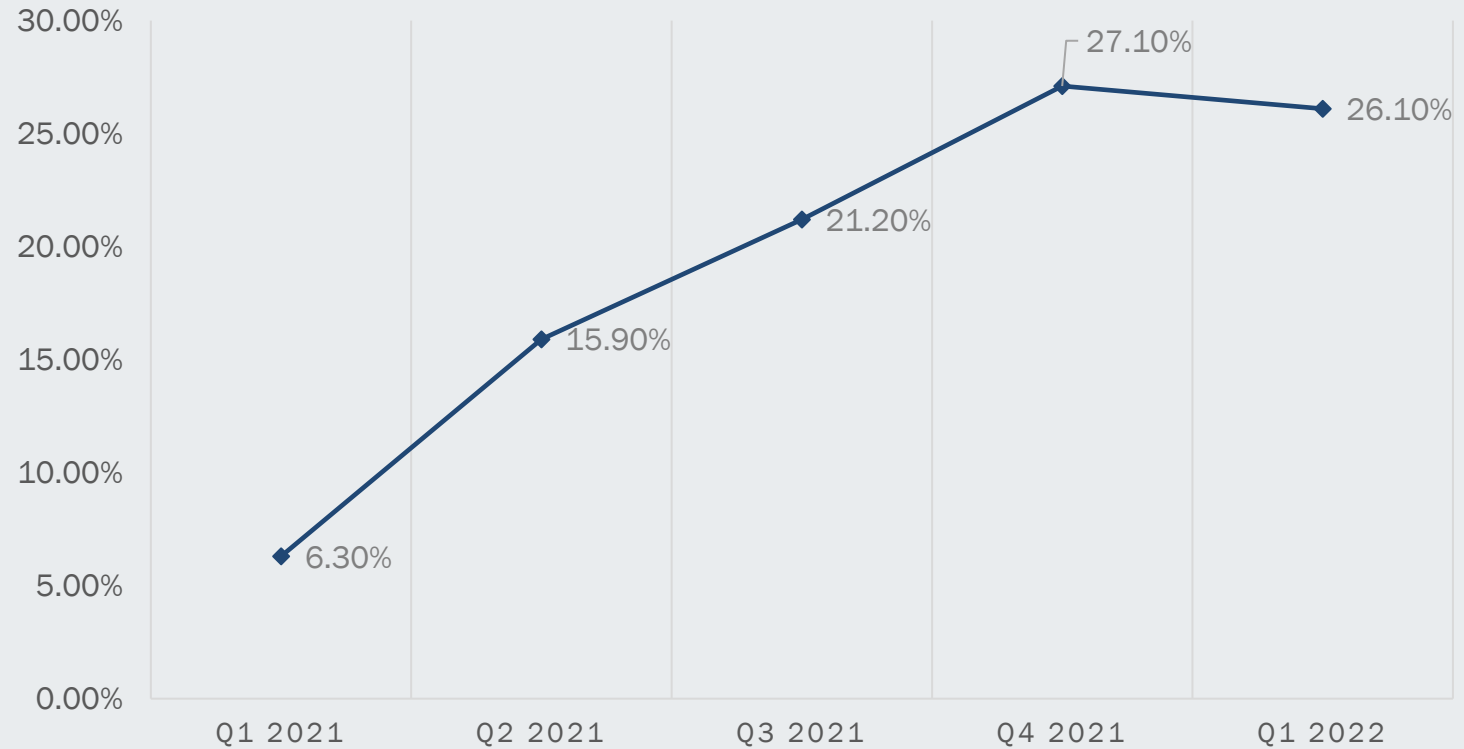
Source: MedCity News

# Vishing

Vishing or "voice phishing," involves some form of a phone call to perform social engineering that involves defrauding people over the phone, enticing them to divulge sensitive information.

Agari's Q2 2022 cyber-intelligence report shows that phishing volumes have increased by 6% compared to Q1 2022. However, the use of 'hybrid vishing' has increased by 625%.

## Share of Reported Vishing Cases Among Response-Based Attacks

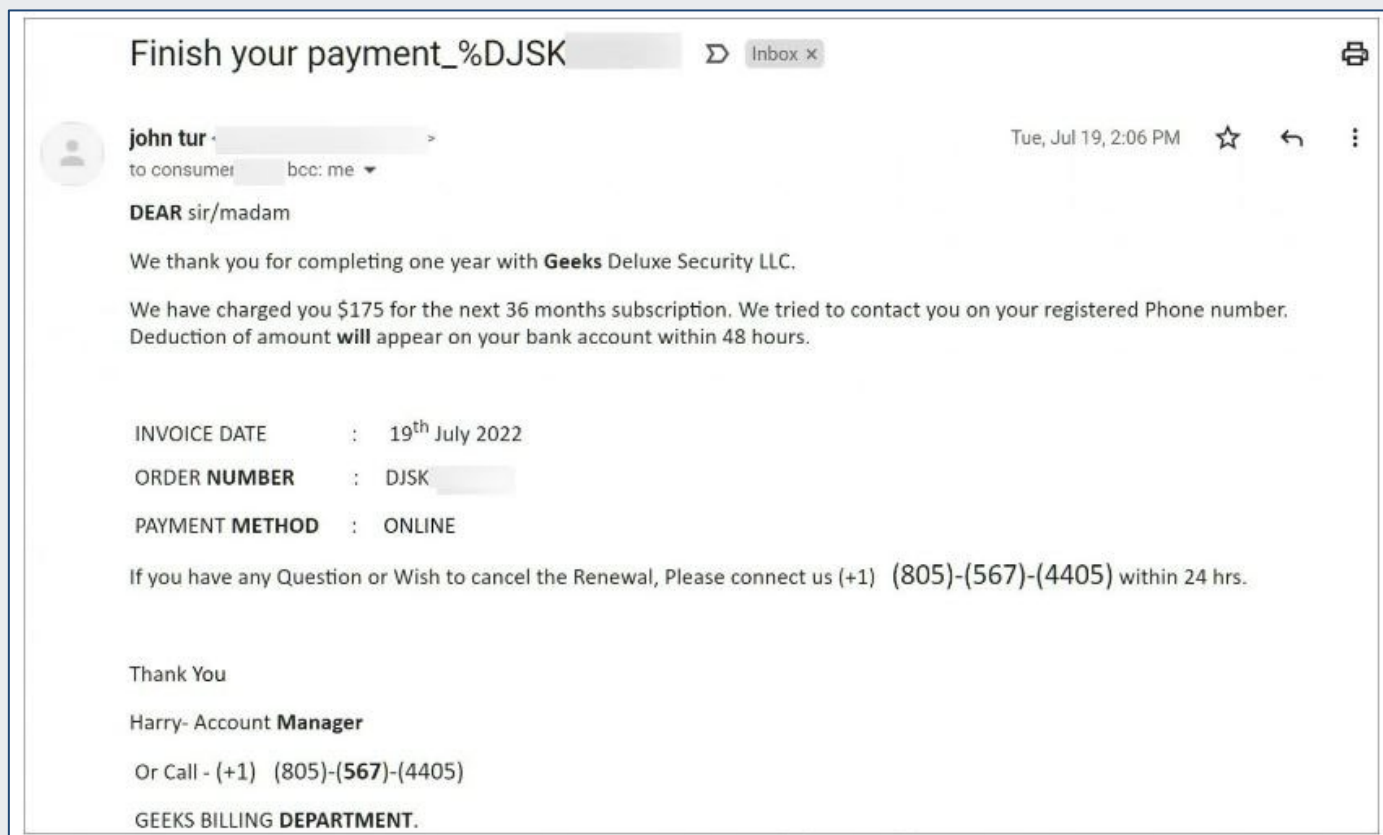


Source: Agari



# Callback Phishing

Callback phishing is a hybrid form of vishing. This type of social engineering attack usually involves sending the target a fake email and calling, before sending a fake subscription/invoice notice.

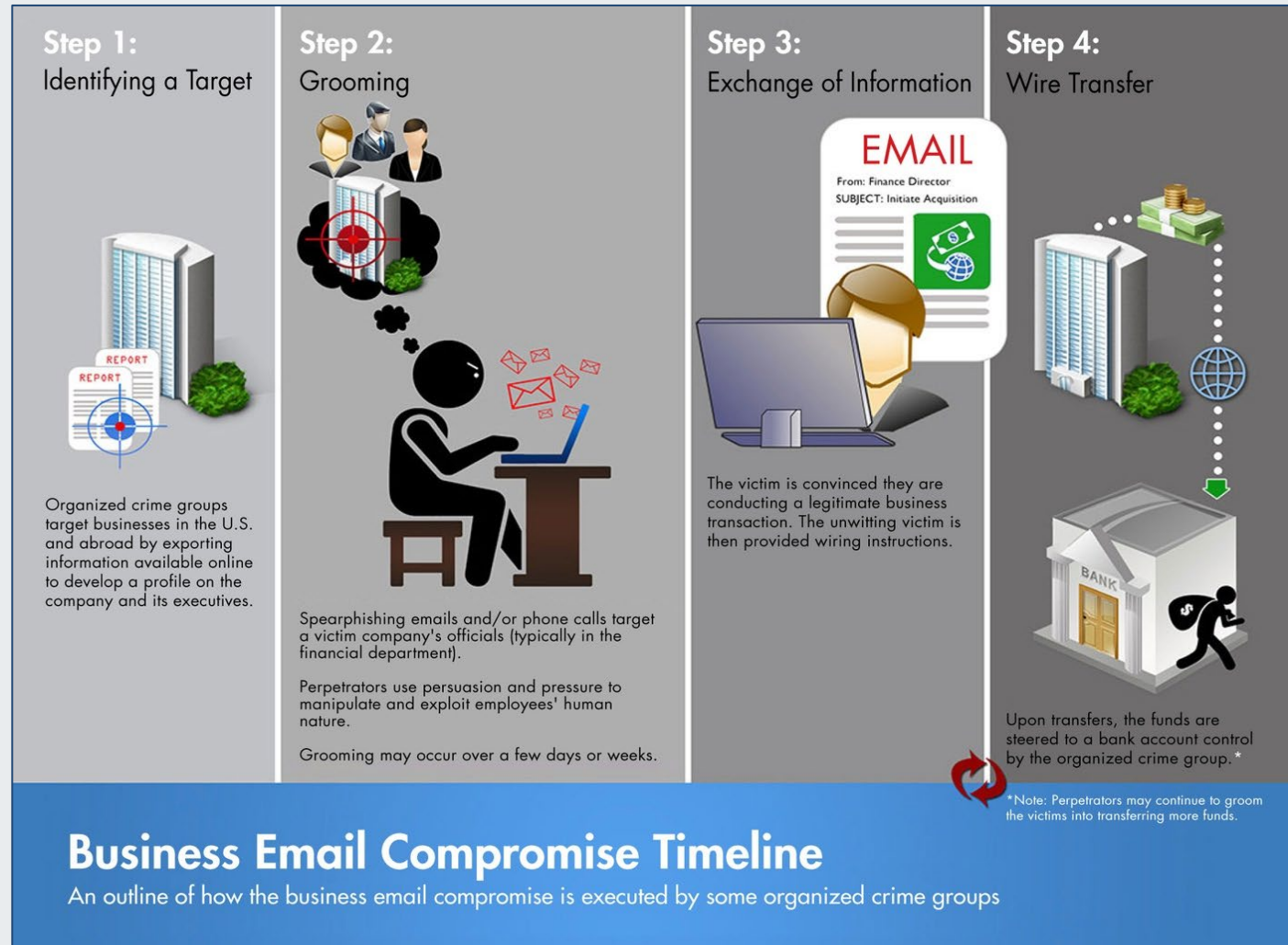


Callback phishing email sample.  
Source: BleepingComputer

# Business Email Compromise (BEC)

A business email compromise (BEC) is when a threat actor sends an email to their target posing as a trusted source with the intent to scam a business or defraud a company.

This type of attack can be difficult to detect and relies on impersonation, along with other social engineering tactics, to trick people into interacting on the threat actor's behalf.



Source: FBI

# Deepfake Software

The use of deepfake software involves a combination of voice cloning and video and allows anyone to take on the identity of trusted persona.



Source: Hitachi Systems Security



Want to see a magic trick? Tom Cruise impersonator Miles Fisher (left) and the deepfake Tom Cruise created by Chris Ume (right). | Image: Chris Ume

Source: The Verge

# Whaling

Whaling is a phishing attack that involves a fake email masquerading as a legitimate email in order to target senior executives.

## WHAT IS WHALING

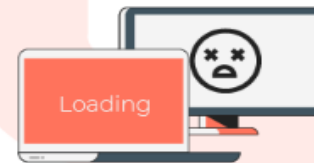
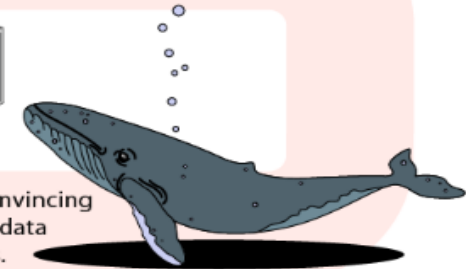
Whaling is a form of spearphishing that targets high ranking victims within a company.



The attacker does extensive research on their target victim and sends the first email.



The email is frantic but convincing and asks for business data or banking details.



The email leads the victim to a website where they enter personal data.



The attacker now has the access to sensitive personal or business information.

Source: Everyday Cyber

# Personality Traits of a Social Engineer and Social Engineering Behaviors/Scenarios

- The Dumpster Dive
- The Changing Passwords
- The Name-Drop
- The Walk-In
- The Unlocked Computer
- The Relaxing Conversation
- The Fake IT Guy
- The iPad Walk Out



Source: TechTarget



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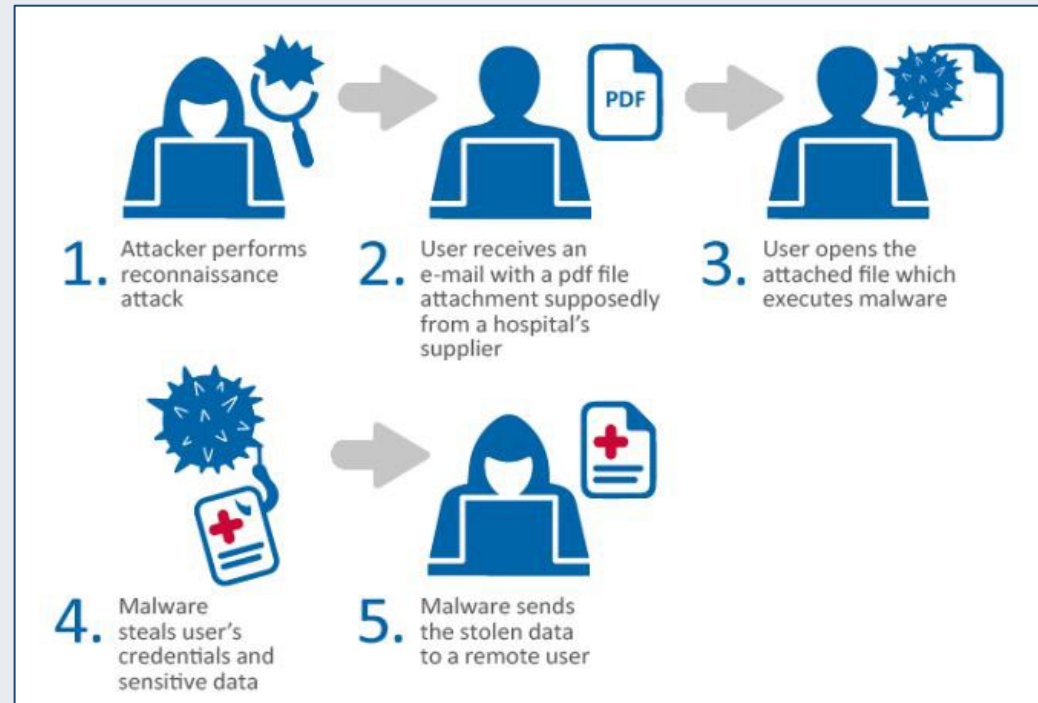


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# Why Is Social Engineering a Problem for Healthcare?

Social engineering can be difficult to identify, particularly in larger organizations where staff members do not always know their fellow coworkers. Some reasons social engineers target healthcare employees:

- People are naturally trusting
- People have a desire to help
- People want to look intelligent
- People do not want to get in trouble
- Some people take short cuts



Source: Research Gate



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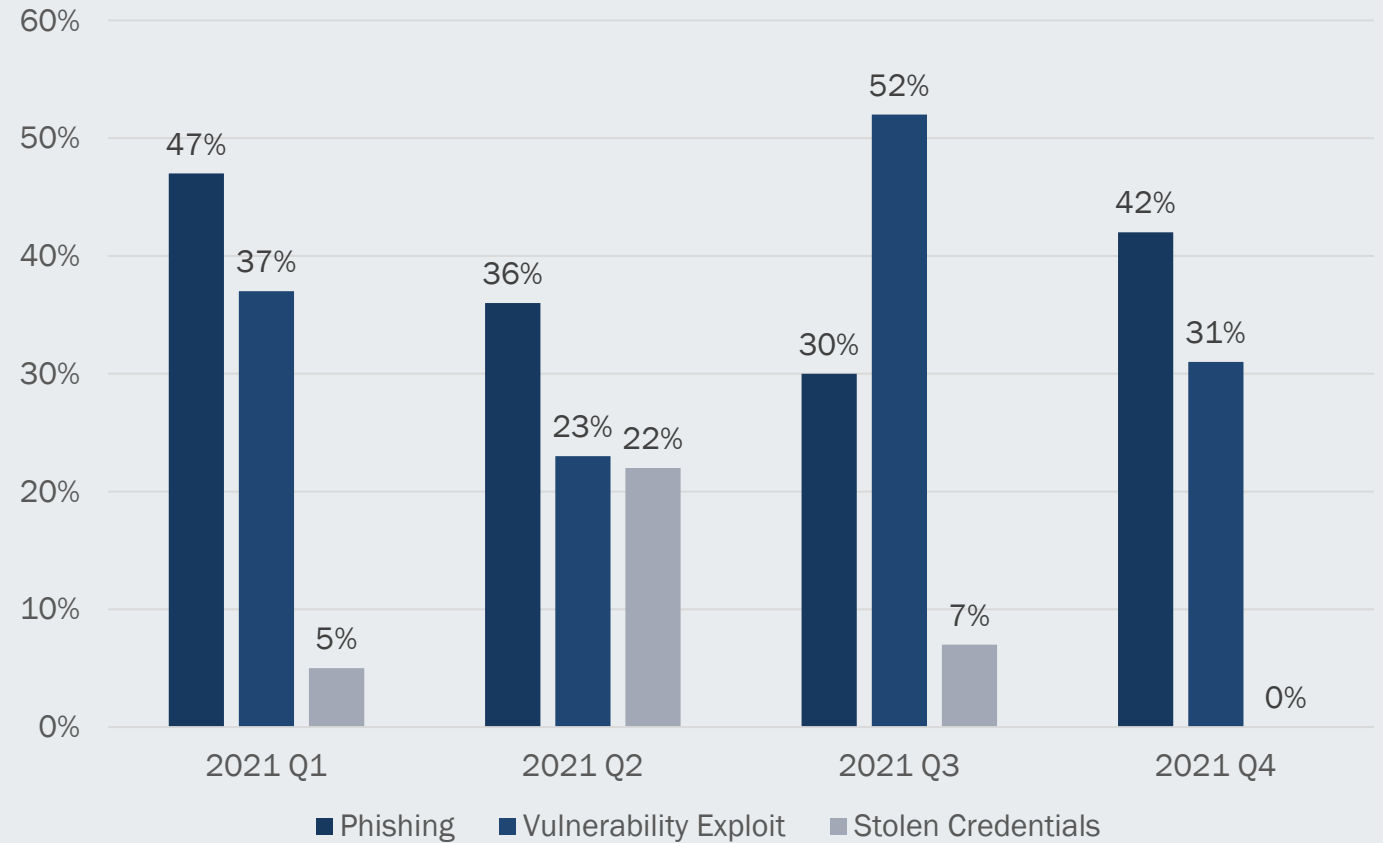


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# Impact of Social Engineering and Data Breaches

# Attacks Linked to Social Engineering

Percentage of Attacks Tied to Phishing, Vulnerability Exploitation, and Stolen Credentials, by Quarter, 2021



Source: IBM Security X-Force



# Average Cost of a Data Breach

## Top Five Countries or Regions with Highest Data Breach Cost:

- The United States = \$9.44 million
- The Middle East = \$7.46 million
- Canada = \$5.64 million
- The United Kingdom = \$5.05 million
- Germany = \$4.85 million

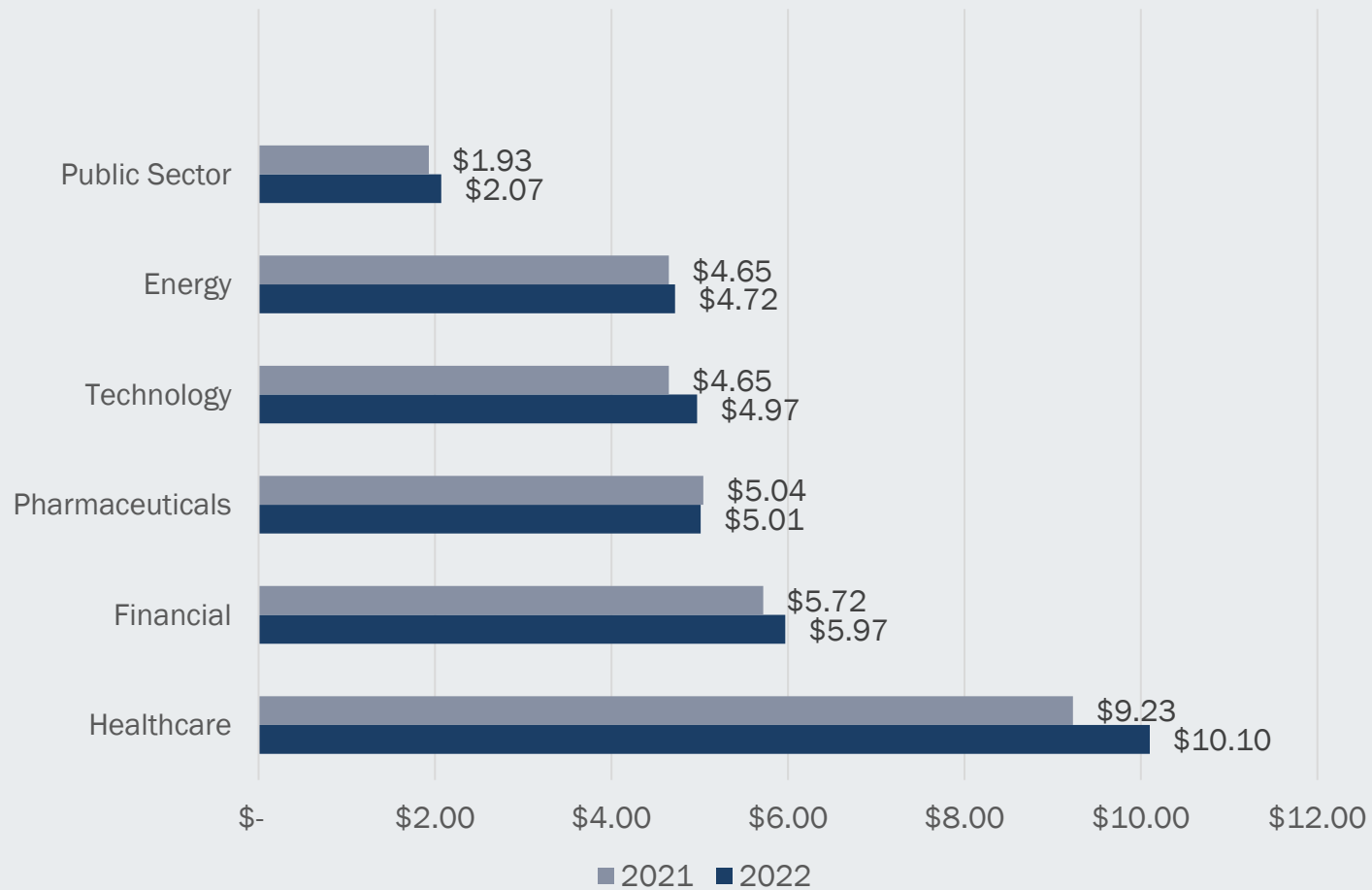
Average Total Cost of a Data Breach in Millions USD



Source: IBM

# Average Cost of a Data Breach By Industry

Average Cost of a Data Breach by Industry in Millions USD



Source: IBM

# Steps to Protect Your Organization

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- Implement backups with best practices
- Have a structured program for regular software updates
- Rollout sensible restrictions
- Impose proper credential tracking
- Train staff to be alert and cautious
- Train staff to verify all requests
- Hold every department accountable for security
- Increase physical security
- Hire a consultant
- Take advantage of resources



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# Resources

# Health Industry Cybersecurity Practices (HICP)



## Health Industry Cybersecurity Practices (HICP) Quick Start Guide - Small Healthcare Organization



## Health Industry Cybersecurity Practices (HICP) Quick Start Guide - Medium & Large Healthcare Organizations



### How is the HICP Publication Organized?

The HICP Publication includes a main document, two technical volumes, and a Resources and Templates Volume:

- The [Main Document \(MD\)](#) discusses the current cybersecurity threats facing the healthcare industry.
- [Technical Volume 1 \(TV1\)](#) discusses 10 Cybersecurity Practices for small healthcare organizations.
- [Technical Volume 2 \(TV2\)](#) discusses 10 Cybersecurity Practices for medium-sized and large healthcare organizations.
- The [Resources and Templates Volume](#) provides additional resources, templates, and supplementary materials.

### How Can I Use this Quick Start Guide?

The HICP Publication encourages good cyber hygiene across your small practice. After reading this quick start guide, you will understand which HICP documents are most applicable to each role at your organization and what to do next. Look up your role in the matrix below so you know what you should read—and what you should delegate. Leadership and management are in the first column, technology professionals in the second column, staff users including practitioners, nurses, administrative professionals, and any network user are in the third column.



What's your role	Leadership & Management	Technology Professionals	Staff/Users (ANY network user)
What part of HICP you should read	MD – pages 5-10 MD – page 28 T1 – pages 3-4	MD – page 11 MD – page 28 T1 – Entire Document	MD – pages 15-26
What part of HICP you should pass along and to whom	<b>To Your Organization's Technology Professionals:</b> MD – page 11 MD – page 28 T1 – Entire Document	<b>To Your Organization's Leadership &amp; Management:</b> MD – pages 5-10 MD – page 28 T1 – pages 3-4	<b>To Your Organization's Leadership &amp; Management:</b> MD – pages 5-10 MD – page 28 T1 – pages 3-4
	<b>To Your Organization's Staff/Users:</b> MD – pages 15-26	<b>To Your Organization's Staff/Users:</b> MD – pages 15-26	<b>To Your Organization's Technology Professionals/ Third Party Service Provider:</b> MD – page 11 MD – page 28 T1 – Entire Document

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Source: HHS



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# CISA: Free Cyber Services & Tools

## Maximize the Organization's Resilience to a Destructive Cyber Incident

Service	Skill Level	Owner	Description	Link
Microsoft Security Compliance Toolkit 1.0	Basic	Microsoft	This toolset allows enterprise security administrators to download, analyze, test, edit and store Microsoft-recommended security configuration baselines for Windows and other Microsoft products, while comparing them against other security configurations.	<a href="#">Download Microsoft Security Compliance Toolkit 1.0 from Official Microsoft Download Center</a>
Authentication Tool	Advanced	Trusona	A passwordless authentication for WordPress admins that enhances security & usability.	<a href="#">Trusona for WordPress – WordPress plugin   WordPress.org</a>
HYPR Zero	Advanced	HYPR True Passwordless™ MFA platform	HYPR Zero is designed for smaller organizations and delivers passwordless multi-factor authentication.	<a href="#">True Passwordless MFA for Small Business Pricing   HYPR</a>
Windows Auto-Backup	Basic	Microsoft	This tool sets up automatic backups of Windows 10 and 11 operating systems.	<a href="https://support.microsoft.com/en-us/windows/backup-and-restore-in-windows-352091d2-bb9d-3ea3-ed18-52ef2b88cbef">https://support.microsoft.com/en-us/windows/backup-and-restore-in-windows-352091d2-bb9d-3ea3-ed18-52ef2b88cbef</a>
Google Backup & Sync	Basic	Google	This tool backs up files on Windows or Mac computers. <b>Note:</b> it does not allow users to restore their system; it only saves copies of files.	<a href="https://support.google.com/drive/answer/7638428">https://support.google.com/drive/answer/7638428</a>
Microsoft Threat Modeling Tool	Advanced	Microsoft	This tool is designed to make threat modeling easier for developers through a standard notation for visualizing system components, data flows, and security boundaries.	<a href="https://www.microsoft.com/en-us/securityengineering/sdl/threatmodeling">https://www.microsoft.com/en-us/securityengineering/sdl/threatmodeling</a>
Microsoft SecCon Framework	Advanced	Microsoft	This framework is designed to help prioritize endpoint hardening recommendations.	<a href="https://github.com/microsoft/SecCon-Framework">https://github.com/microsoft/SecCon-Framework</a>

Source: CISA





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# Questions



# FAQ

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## Upcoming Briefing

- 9/1 – Emerging Technology and the Security Implications for the Health Sector

## Product Evaluations

Recipients of this and other Healthcare Sector Cybersecurity Coordination Center (HC3) Threat Intelligence products are **highly encouraged** to provide feedback. To provide feedback, please complete the [HC3 Customer Feedback Survey](#).

## Requests for Information

Need information on a specific cybersecurity topic? Send your request for information (RFI) to [HC3@HHS.GOV](mailto:HC3@HHS.GOV).

### Disclaimer

These recommendations are advisory and are not to be considered as federal directives or standards. Representatives should review and apply the guidance based on their own requirements and discretion. The HHS does not endorse any specific person, entity, product, service, or enterprise.



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# About HC3

The Health Sector Cybersecurity Coordination Center (HC3) works with private and public sector partners to improve cybersecurity throughout the Healthcare and Public Health (HPH) Sector. HC3 was established in response to the Cybersecurity Information Sharing Act of 2015, a federal law mandated to improve cybersecurity in the U.S. through enhanced sharing of information about cybersecurity threats.



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## What We Offer

### Sector and Victim Notifications

Direct communications to victims or potential victims of compromises, vulnerable equipment, or PII/PHI theft, as well as general notifications to the HPH about current impacting threats via the HHS OIG.

### Alerts and Analyst Notes

Documents that provide in-depth information on a cybersecurity topic to increase comprehensive situational awareness and provide risk recommendations to a wide audience.

### Threat Briefings

Presentations that provide actionable information on health sector cybersecurity threats and mitigations. Analysts present current cybersecurity topics, engage in discussions with participants on current threats, and highlight best practices and mitigation tactics.



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