Cybereye
Solutions

*A Guide to Cybersecurity Basics for Small Healthcare Practices*

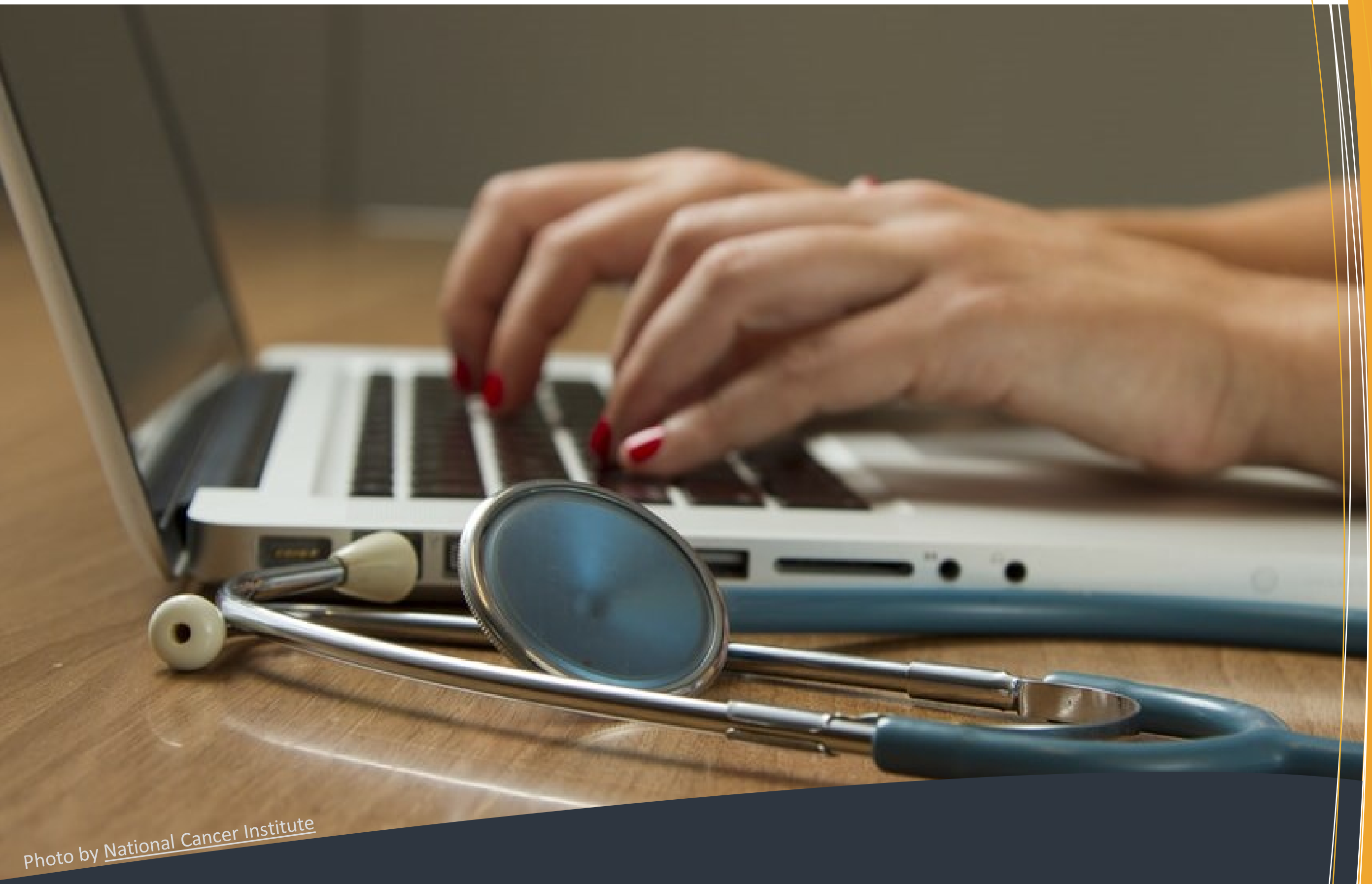


Photo by National Cancer Institute

# QUICK START GUIDE

## For HIPAA Security Rule Compliance

# Protecting Patient Records Is Critical

In the year 2020, cybersecurity incidents and attacks in healthcare increased over 55% from the previous year and cost the industry thirteen billion dollars[1]. With the COVID-19 pandemic dominating headlines and budget constraints threatening even the most basic of operations, healthcare organizations may be tempted to sacrifice cybersecurity, and to their own detriment. Small healthcare organizations face many of the same evolving cybersecurity risks as large organizations and a single cybersecurity incident can be financially catastrophic for a small practice.

### HOW A CYBERSECURITY INCIDENT CAN IMPACT A SMALL PRACTICE

- Loss of patient records
- Revenue lost during IT outages
- Replacement cost of IT assets
- HIPAA-related fines
- Reputation risk
- Stolen bank passwords or SSNs
- Interruption of patient care
- Inability to bill for services
- Risk of legal fees
- Detriment to staff morale

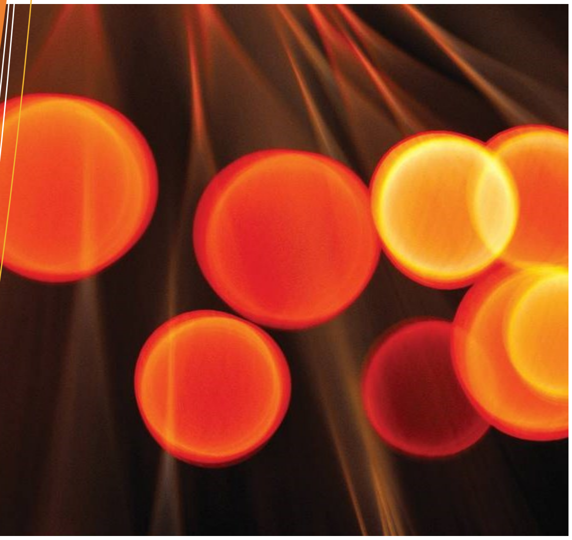
## **Small healthcare practices** don't have the luxury of a dedicated IT Shop

### IT'S A MATTER OF EXPERTISE

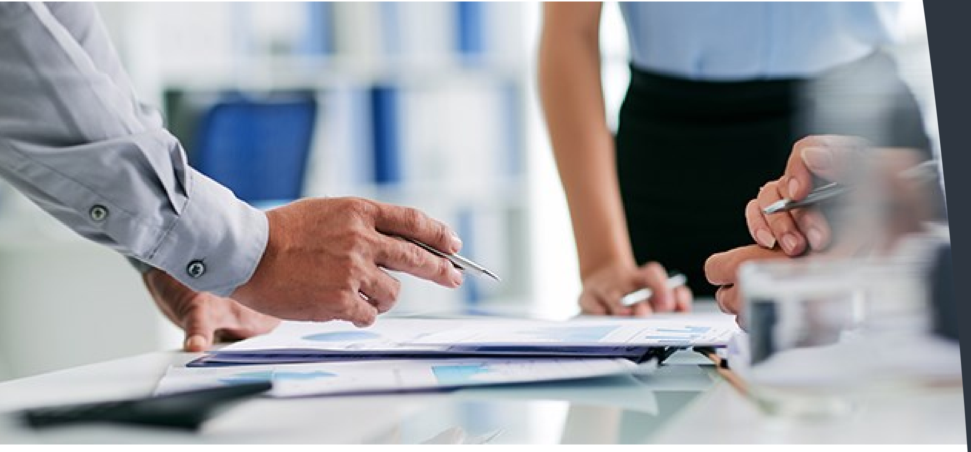
Without the support of the Federal Government or the budget for a private consulting firm to bolster cybersecurity efforts, small healthcare practices are forced to adopt a DIY (Do It Yourself) approach to cybersecurity and privacy protection. With over 30 different cybersecurity specialty areas defined by the National Institute of Standards & Technology (NIST), this is no trivial task. Despite a lack of dedicated IT personnel and the necessary monitoring and response tools, small practices face the same level of risk and evolving threats as every other large company in the United States.

### USING THIS GUIDE

This guide provides small practices with a basic understanding of the cybersecurity landscape, common risks facing the healthcare industry, and foundational activities needed to protect the digital systems and records your practice has come to rely on for daily business. This guide does not cover the full breadth and depth of HIPAA Security Rule, but serves instead as a first step.



[1] *Source:* Muncaster, P. (2021, February 18)



## The HIPAA Security Rule

Most healthcare providers are familiar with the HIPAA Privacy rule and its requirements to protect patient confidentiality. Healthcare practices of any size are also subject to the HIPAA Security Rule. The Security Rule requires appropriate administrative, physical and technical safeguards to ensure the security of electronic protected health information. In short, the HIPAA Security Rule means basic cybersecurity isn't optional. No cyber defense is perfect, but at a minimum, implementing good cybersecurity practices mitigates liability risk in the event of a cybersecurity incident, demonstrating a good faith effort on the part of the organization to protect organizational data and patient information.

## 1. Develop Good Policy

The foundation of any IT security program begins with information security policy. Fortunately, there is no need to reinvent the wheel when it comes to implementing information security policies. In the attachments, this getting started guide includes tailorable templates for the most common policy topics that can be adapted for use.

Information Technology policies should be provided to all staff, including temporary employees, during onboarding and annually thereafter. Employees should be required to sign or acknowledge the policies. Be sure to store policies in a centralized location, whether in hard copy or digital form, so they are always accessible to staff for reference.

As the cybersecurity program matures, the recommended approach to policy enhancement is the alignment of policy to the National Institute of Standards and Technology (NIST) Cyber Security Framework (CSF)[2]. As a step saver, the U.S. Department of Health and Human Services (HHS) provides a convenient crosswalk of the HIPAA Security Rule security requirements to the five CSF categories.

[2] Reference: *NIST Cyber Security Framework*

## 5 CYBER SECURITY BASICS Every Healthcare Practice Should Implement

### CREATE RULES TO LIVE BY 1

Develop clear and concise policy that staff can understand and follow

### CHOOSE PRODUCTS WISELY 2

Spend the time to research IT solutions that minimize cybersecurity burden

### MAINTAIN GOOD CYBERSECURITY HYGEINE 3

Don't let information technology products collect dust, create a regular update schedule for vendor software

### PRACTICE MAKES PERFECT 4

Put security practices in place to make security second nature, require frequent refresher training

### HAVE A BACKUP PLAN 5

Assume a system outage is going to happen and have a backup plan that all staff can follow to maintain operations and recover data records, if lost or damaged

## 2. Choose Technology Wisely

While strong security policy and standardized practices form a critical foundation, policy alone is not enough. Good cybersecurity requires the intelligent selection, acquisition, configuration and maintenance of hardware and software. In healthcare, that means not only desktops, laptops, mobile devices, and communication systems but also medical devices and electronic health record solutions. While confidentiality is a key focus for privacy, the availability of IT and integrity of the data within is also an important consideration for healthcare practices. When acquiring any new technology, consider the following:

- **Define Business Need**. Focus clearly on the problem to be solved- more features and functionality may mean more security burden.
- **Consider Alternatives**. Compare the features, functions, and costs of at least 3 vendors.  This comparison table may help.
- **Evaluate Security**. Know what security features come set as a default, versus those that must be added or customized later.
- **Securely Implement the Solution**. Make certain all customizable security settings have been properly configured and security maintenance responsibilities are well defined.

*Shared Passwords Can Quickly Become a Common Practice Without Clear Policy Enforcement & Good Security Culture – Never Allow Shared Login Credentials*

# **Strong cyber practices support good health** for patients and providers

## 3. Maintain Cybersecurity Hygiene

Though they are trained to help their patients navigate complex and chronic conditions, healthcare professionals recognize the importance of basic hygiene practices like handwashing, good nutrition, and regular exercise as preventive measures for a multitude of ills. Just like these basic health practices, many cybersecurity issues can be avoided through consistent cybersecurity hygiene within your practice.

Just as good nutrition alone does not prevent cancer, implementing these practices cannot guarantee prevention of an attack. However, each step taken will reduce organizational risk and ensure progress toward protecting the data of both the practice and its patients. A few key hygiene items to start with:

- **Enforce Strong Passwords.** Use strong passwords, enforce changes regularly, and prohibit sharing of passwords. Consider moving to the use of verification codes at login, as this multi-factor technique is the single most effective way to combat theft of login credentials.
- **Update Software**. Every system component has some form of software that requires regular updates to keep secure. Vendors release updates to address newly identified security flaws with their software, a lot like recalls issued by automobile manufacturers. Much like the free repair for a known automobile recall issue, software vendors offer free patches to immediately close known vulnerabilities and prevent them from being exploited. Visit software vendor sites to register for email alerts and authorize automated version/patch updates wherever possible.

- **Install Anti-Virus/Anti-Malware Software.** Install antivirus software on every computer and system in the practice and set it to automatically update. Track the expiration of the license and set it to auto renew where possible to avoid unexpected gaps in coverage.
- **Create & Protect Data Record Backups**. Keep files secure by backing up important data offline, on an external hard drive, or in the cloud. This can help protect against many types of data loss, especially if bad actors gain access to one or more practice devices. Examine the encryption features of backup media. Always encrypt sensitive data to prevent any unauthorized access to patients' confidential data if equipment is lost, stolen, or compromised.

**When it comes to hygiene, discipline leads to success.** Assign responsibilities and mark the calendar with target completion dates for each series of tasks — things such as scanning for viruses with antivirus software, updating the operating systems of all devices, checking for security patches and changing passwords. Once staff begin to get the hang of cyber hygiene, it will become second nature.

## 4. Regularly Train Staff

The Healthcare Industry faces two primary threats that can be overcome through regular training: complacency among staff when it comes to privacy and security protocols; and social engineering attacks from bad actors who recognize the value of healthcare data.

When it comes to protocols for data privacy and security, *practice makes perfect*. At least once per year, all staff should be required to demonstrate their proficiency and compliance with cybersecurity practices related to their job duties.

Social engineering attacks entail an outside person or organization that manipulates a user with the intent to gain unauthorized access to systems or data. A social engineering attack can result in a breach through the simple action of clicking on a malicious link on the internet, opening an unsafe email attachment, or revealing login credentials to a hacker posing as IT support. Social engineering attacks exploit a common human desire to be helpful or a user's tendency to be curious.

Healthcare organizations are particularly vulnerable to attacks that disable, encrypt, or otherwise render useless their most valuable organizational data – patient records, in exchange for a large sum of money (records held for ransom). Ransomware attacks are frequently launched through malware embedded in a malicious link. This means falling prey to a ransomware attack is more likely if an organization is not maintaining proper cyber hygiene, including frequent staff training.

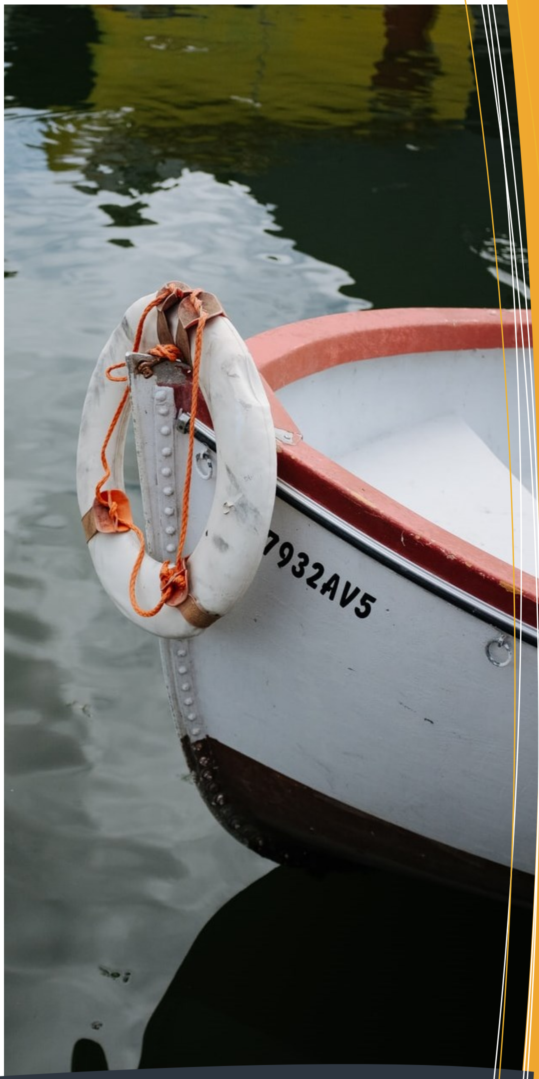
In October 2020, the FBI and the Cybersecurity and Infrastructure Agency released a special advisory alert noting "credible information of an increased and imminent cybercrime threat to U.S. hospitals and healthcare providers." This alert was driven by a notable surge in ransomware attacks. Ransomware attacks now account for about half of all data breaches in healthcare . [4]

Ongoing awareness training can **reduce the likelihood of a social engineering attack by up to 70%.**

[4] *Source: Muncaster, P. (2021, February 18).*

Healthcare organizations may find efficiency in tracking cyber security training alongside continuing education requirements. Ample free and low-cost training is now available from trusted government and nonprofit institutions. A sample training plan with links to some of these external training resources is provided in Attachment B.

### 5. Have A Backup Plan



Healthcare professionals who have completed their education in recent years are digital natives and will be naturally at ease with a variety of electronic medical records and digital devices. The tradeoff for this level of familiarity with technology is a lack of experience in working without it.

In the event of an outage, the practice must have a clear set of alternative work procedures instructing staff on how to proceed without the usual hardware/software tools. Any team can handle an outage of a few hours; but in the current cyber threat landscape, outages are lasting an average of 16 days[3].

Things to consider and plan for include collecting payment, accessing patient records, and synchronization of data records post-incident. Employees should be required to review the plan annually and organizations should conduct an annual Table-Top Exercise to test the procedure to ensure employees are capable and confident in conducting business during an IT system outage. A sample test plan is included in Attachment C.

## CALL TO ACTION

The HIPAA Security Rule applies to practices of all shapes and sizes. We've covered the basics. Whether you are following the DIY approach, or enlisting help from a company like Cybereye, you can establish or improve your cybersecurity program – STARTING TODAY.

○ Establish HIPAA Policy

○ Identify IT Products & Apply Security Settings

○ Create an IT Backup Plan

○ Train Staff on Policy & Plans

○ Assign Cyber Hygiene Processes

○ Review Program Annually

[3] Source: Palmer, D. (2020, January 23).

# A PUBLIC/PRIVATE PARTNERSHIP: HARNESSING THE POWER OF ACADEMIA & INDUSTRY

Cybereye Solutions, a commercial services provider in the field of information security governance, risk and compliance, is pleased to present this free Quick Start Guide as a resource for healthcare practices.

The Quick Start Guide was prepared as a collaborative academic project between Cybereye Solutions and the University of South Carolina, through the Master's of Health Information Technology Program. The University of South Carolina prepares students with expertise in management of both health care systems and information technology. Blending technology curriculum with course work covering current clinical trends, government regulations and healthcare-specific practices, this Program is designed to create a highly skilled workforce and lead the industry in technologically advanced and efficient health care systems.

This engagement reflects the interest and commitment of both USC and Cybereye Solutions to foster ongoing collaboration between academia and industry, providing significant benefits to healthcare providers, and patients.

## ABOUT THE AUTHOR

Maria Petrie, CISSP, HCISPP is a Registered Nurse and seasoned cybersecurity consultant who brings a passion for clinical transformation powered by technology. Prior to specializing in healthcare, Maria spent more than a decade advising Federal Government clients on matters of cybersecurity policy and governance.

Leveraging her past experience coaching a new healthcare practice through an avoidable HIPAA security & privacy incident, Maria brought lessons learned to this Quick Start Guide as part of her Master's of Health Information Technology Program at the University of South Carolina. She sought out collaboration with Cybereye Solutions to transform the academic exercise into practical application, bringing the Guide to life as a resource for small healthcare practices.

## ABOUT CYBEREYE SOLUTIONS

After over 20 years of specialized experience building transformational cybersecurity programs for Federal Government and Commercial clients, Kim Maurer established Cybereye Solutions, to bring affordable, and realistic roadmaps for governance, risk and compliance to small and mid-sized companies.

Cybereye was founded on the belief that building, implementing and maintaining cyber programs can and should flex with the changes of a growing business. Cybereye Solutions offers customizable consulting services for HIPAA compliance and program implementation. Visit cybereyesolutions.com to learn more.

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# ATTACHMENT A

***[SAMPLE] Acceptable Use Policy***

IT assets are an important part of the busines of providing healthcare. To protect patient privacy and the organization, all employees are expected to adhere to this Acceptable Use policy when utilizing IT assets.

**Access & Ownership**

- IT assets required for performance of duties will be provided on site or issued to individuals upon hire
- IT assets include hardware (examples include laptop computers, desktop computers, mobile phones, tablets, pagers/paging devices, etc.) and software (licenses to electronic healthcare records, enterprise email access, and any other IT software access necessary for the performance of job duties).
- All IT assets remain the property of _*(organization name)*__ and must be returned upon separation from employment.
- Theft or damage to devices or knowledge of compromised credentials (i.e. lost badge, stolen password) must be reported immediately to supervisor and __*(IT manager, facility security, or other appropriate personnel).* Employees who do not return devices may be subject to civil penalty.
- Bring your Own Devices (BYOD) is __*permitted/prohibited*_ at __*organization name*__.

**Acceptable Use**

- IT assets are for the exclusive purpose of patient care, support of patient care, and other work activities as appropriately defined by individual job description.
- Use of IT assets for purposes clearly unacceptable for the workplace will result in formal reprimand and/or termination. This includes any illegal activity, viewing pornography, conducting business for another organization, or any activity that violates any other organizational policy.
- *[Choose 1]:*
  - Use of organizational IT assets for personal use is prohibited. This includes checking personal email, academic projects, web surfing, and other personal use not defined.
  - Limited personal use of IT assets is acceptable. Employees may: complete academic projects or conduct internet research using workplace assets.
- Failure to complete annual information security training and other job-required training is a violation of the Acceptable Use Policy.

**Violation**

Violation of the acceptable use policy may result in disciplinary action to include written reprimand, removal of job duties, and/or termination of employment.

# ATTACHMENT B

**[SAMPLE] Information Security Training Policy**

Routine information security awareness training is an important component of a successful healthcare enterprise. All employees of __*[organization name*]__ must complete annual information security training. The type, length, and frequency of training required is dependent upon job role. Each employee and his/her supervisor will agree upon hire which category below is appropriate. Information security training completion will be tracked in the employee's personnel file alongside licenses/continuing education.

The following training resources are representative. *Edit this policy to select the categories and trainings that best fit organizational needs.*

**All Staff:**

- Cybersecurity Awareness Training
- Phishing Awareness Training

**Clinical Staff:**

- Cybersecurity Awareness Training
- HIPAA Privacy training
- Phishing Awareness Training

**Directors/Administrative Staff**:

- Cybersecurity Essentials Training
- HIPAA Privacy training
- Phishing Awareness Training
- Role-based training for Executives and Managers

**Information Technology Staff:**

- Cybersecurity Essentials Training
- HIPAA Privacy training
- Phishing Awareness Training
- Recommended certifications: Security+, CISSP, or HCISPP
  These professional certifications carry a continuing education credit requirement in cybersecurity topics. Continuing education credits are typically available at no cost but the certifications and annual maintenance membership require a fee. To encourage cybersecurity training, consider reimbursing these training and membership fees as an allowable business expense for employees and contractors under the same policy as clinical training and conference expenses.

*Note: At the time of publication, the links in this policy template route to freely available training courses. If the links no longer function, visit the Health and Human Services Cybersecurity homepage and/or contact Cybereye Solutions for advice on designing a training plan.*

# ATTACHMENT C

**[SAMPLE] Continuity of Operations Policy**

In many contexts, healthcare operations must continue even if IT assets are unavailable. Each healthcare organization should have a plan that instructs employees how to conduct business in the event of an IT outage. At a minimum, the plan should be reviewed and tested annually.

**<u>Continuity of Operations Policy (COOP)</u>**

Following Notification/Activation of the COOP, employees should follow the procedures enumerated in this policy through restoration of normal business operations.

In the event of an IT outage (internet outage, medical device failure, electronic health record system outage), __*organization name*_ *[will continue providing patient care during normal business hours]* OR *[will notify patients of the outage and transfer/refer patients to ____].*

**Responsibility** – Maintenance and annual testing of this will be supervised by the IT Contingency Plan Manager. The IT Contingency Plan manager for this organization is __*[name and title].*__ *The ITCP Manager can be reached at* __*[email, phone, personal phone].*__

**Notification & Activation** – In the event of an unplanned system outage, such as a disruption caused by weather, fire, hardware or software failure, or a malicious cyberattack; first notify the ITCP Manager identified above. The ITCP Manager will evaluate the outage information available and determine if further notification is necessary. Upon direction of the ITCP manager, begin notification of other employees and patients as necessary. Provide only the minimum details necessary (current assessment of outage, anticipated recovery time, impact to employee or patient operations such as whether or not to report to work or appointments as scheduled).

**Continuity of Operations** – *Choose the operations instructions appropriate for your organization:*

___ If internet access is unavailable but 'offline' charting is possible, employees may continue normal business operations.
___ If internet access is unavailable, offline charting is prohibited and paper charting should be used
___ If normal EHR access is unavailable, patient care should continue using paper charting
___ If normal EHR access is unavailable, patient care should be postponed/referred until EHR access is restored
___ In the event of disabled hardware (ex. laptop/tablet), employees may use another device on loan from the organization
___ In the event of disabled hardware (ex. laptop/tablet), employees may continue operations using paper charting mechanism defined in this plan

**Recovery**

Only the ITCP Manager can declare the end of the IT outage. All staff should continue to use the Continuity of Operations procedures (including paper charting) until explicitly directed by the ITCP to resume normal business operations. Following restoration of services, the ITCP Manager should draft a report of the outage, the business impact, the recovery measures taken, and the procedures used during the outage to continue business operations.

## ATTACHMENT C (CONTINUED)

**Tabletop Test Plan**

A tabletop test is a simulated exercise designed to test the contingency plan. To test the procedures for completeness and effectiveness, organizations should conduct a full test of their contingency plan upon implementation and once annually. Annual testing ensures continued completeness and effectiveness of the contingency plan. Annual testing also aids in training all stakeholders. Everyone named in the plan should participate in the test to confirm they understand their roles and responsibilities as enumerated in the plan. If, during the test exercise, a change is identified in the written procedure, the change should be noted in the post-test report and the relevant policy or instruction should be updated as an after-action of the tabletop test.

**Participants**: List all participants. Include the ITCP Manager and one representative from all business functions (clinical providers, clinical support, administrative, billing, etc.).

**Scenario**: Share a sample scenario with all stakeholders. For example, imagine that a natural disaster has caused an outage at the cloud data center which operates the organization's electronic health record. The outage is expected to last 4 hours but occurs in the middle of the business day.

**Procedures**: According to the scenario provided and the ITCP, what should employees do? For example, in this case, will patients be seen or referred? Will charts be kept 'offline' or on paper?

**Test Procedures**: Review step by step what employees are supposed to do according to the ITCP. Take notes on how this may differ from what employees believe they would do in the same scenario. The test should be non-attributional. If an employee reports that staff would have used Google Docs to 'paper' chart, note that in the report and update the plan to include exactly what programs are acceptable for offline charting.

**Post-Test Action Plan:** Review with all employees what went well from the test and what was unexpected. Make updates to the ITCP as necessary to accommodate additional scenarios, provide more clear instructions, prohibit certain actions, etc. Ensure contact information for responsible parties is up to date. Share the lessons learned and a copy of the updated ITCP at the next staff meeting.