Safeguarding ePHI from Fire the Dry Way

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by Karen Brown

With HIPAA's security rule compliance date right around the corner, many HIM professionals are still trying to determine if they have adequate safeguards in place to ensure the confidentiality, integrity, and availability of electronic protected health information (ePHI).

Many organizations focused their initial security efforts on firewalls, anti-virus tools, intrusion detection, audit control, and other technology-based safeguards. However, information security is not just about technology. Many security teams make a critical mistake by not taking a balanced approach in developing their risk management and disaster recovery plans. Fire protection, for example, is just as important as firewalls. This column will discuss how waterless fire protection systems are used to safeguard and ensure availability of ePHI.

Will Your ePHI Survive a Fire?

The administrative safeguards section of the security rule (§164.308) requires that providers have a contingency plan for responding to an emergency or other occurrence such as a fire, vandalism, system failure, or natural disaster that damages systems and equipment that contain ePHI. The implementation specifications require plans for data back up, disaster recovery, and emergency-mode operation.

Providers should evaluate the impact of fire even if they have remote back-up data centers. You should consider how long your organization would be disrupted if you had a fire or if the sprinkler system deployed in areas containing ePHI. While the probability of having a fire may not be high, the result is always critical. Consider the following statistics:

- Fires occurred in 118,000 nonresidential buildings in 2002.[1]
- Forty-three percent of businesses that suffer a significant disaster such as a fire never reopen. Of those that do, 29 percent fail within two years.[2]

Even if your organization can get adequate property insurance, how do you determine the loss caused by your inability to treat patients because your information system is damaged? How long will it take to replace your equipment? What is the impact on your reputation if a fire destroys your patient records?

Much has been published on how to conduct risk assessment and contingency planning. The key is to identify the assets that can be harmed by various disruptions and determine the techniques that can quantify and qualify the impact. When evaluating the impact of a fire on electronic assets, if you use a sprinkler system, you should evaluate the impact of water, heat, and smoke.

Sprinklers Can Extinguish Data

Many healthcare organizations rely on sprinkler systems to protect their buildings. Most local building and fire codes require sprinkler systems as minimum protection. However, electronic assets such as ePHI that are located in areas protected by sprinkler systems are at risk. Water is electrically conductive, and it can damage electronic circuitry.

The main objective of a sprinkler system is to contain a fire to the room of origin—not necessarily to extinguish it—and to manage the temperature of the ceiling to prevent structural damage or collapse. Automatic sprinkler systems are activated when the temperature of the glass bulb of the sprinkler head assembly exceeds the preset temperature rating. This normally occurs when the ceiling temperature is at least 150° F. At this temperature, a fire can cause severe smoke and thermal damage to electronic components, even though it is not harming the building structure.

Businesses that cannot afford downtime—such as telecommunications networks, financial networks, and air traffic control—rely on waterless fire protection systems with early warning detection to maintain operability and business continuity.

How to Select the Best Waterless Fire Protection Gas for Your Application

There are at least eight types of clean gas on the market. The following questions help narrow the range of choices:

1. Is the clean gas on the EPA Significant New Alternatives Policy list and included in NFPA 2001, Standard on Clean Agent Fire Extinguishing Systems?
2. How many fire system manufacturers use the gas in their systems?
3. How fast will the gas extinguish a fire?
4. What type of test data is available?
5. How many regulatory approvals does the gas have?
6. How long has the gas been approved for use in occupied spaces?
7. How many other organizations are using this product? Ask for a reference list.

How Waterless Fire Protection Works

The primary objective of a waterless fire protection system is to detect and extinguish a fire in its incipient stage, long before smoke generation causes damage. Fire begins before you see smoke or fire or feel intense heat. When it is stopped at the incipient stage, the risk of explosion, production of toxic combustion by products, and extensive damage are eliminated. Progress past the incipient stage usually results in loss of lives, increased damage, and downtime.

Waterless fire protection systems encompass two functions: early detection and suppression. They rely on various types of detectors to sense either smoke, flame, heat, or the presence of combustion byproducts. When used in areas containing sprinkler systems, waterless fire protection systems will have detected and extinguished the fire long before temperatures are high enough to activate the sprinkler systems.

Waterless suppression systems use a clean gas to extinguish fire. The gas absorbs heat from the flame zone and interrupts the chemical chain reaction of the combustion process. Unlike water, the gas is nonconductive and noncorrosive, making it safe for use around electrical equipment. The gas penetrates into hard-to-reach areas, giving it greater coverage than water. There is no residue, particulate, or collateral damage after discharge.

As providers began managing PHI electronically rather than on paper, they rethought some basic HIM practices. Securing PHI in this new format requires rethinking, also. When it comes to assessing risk from fire, look up and consider your ePHI's vulnerability from the sprinklers overhead.

Notes

1. US Fire Administration. "US Non-Residential Fire Loss: 1994–2003." Available online at www.usfa.fema.gov/statistics/national/non-residential.shtm.
2. Davis, Steve, and All Hands Consulting. "Business Continuity Considerations for Research and Development Organizations." Available online at www.davislogic.com/bcm.htm.

References

National Fire Protection Association. "Standard on Clean Agent Fire Extinguishing Systems and NFPA 75." Available online at www.nfpa.org.

Fire Suppression Systems Association, www.fssa.net.

Robin, Mark, and Lance Harry. "Fire Protection in Telecommunications and EDP Facilities: A Comparison of Halocarbon and

Preaction Sprinkler Systems." Presentation at NFPA World Safety and Conference Exhibition, May 19, 2003, Dallas, TX. Available online at www.haifire.com/presentations/NFPA2003/robin.pdf.

US Environmental Protection Agency, www.epa.gov/ozone/snap/fire/index.html.

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