

CHALLENGES AND OPPORTUNITIES FOR THE SECURITY OF RADIOACTIVE SOURCES IN MEDICAL APPLICATIONS

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Hospitals Are Considered CI/KR

- Regardless of the event, any incident resulting in injuries (man made or naturally occurring) will require local healthcare facilities to become involved. As such, these facilities are Critical Infrastructures/ Key Resources for the communities which they serve.
- While hospitals have not historically been a primary target for terrorism or criminal action, the potential still exists. Regardless, they remain excellent secondary “soft” targets due to their very nature and unique characteristics.

Unique Characteristics of Hospitals

- Open 24 hours a day with numerous entries
- Access to the public with limited restrictions
- Presence of money, drugs and other valuables (including radioactive source materials)
- Vulnerable patient populations
- Crisis mentality / Emotional environment
- Highest workplace violence rates of any industry

Challenges in Securing a Healthcare Environment

- Hospitals often value convenience, patient experience and aesthetics over that of security
- Security in healthcare typically lacks a voice at the executive level, relegated to reactive roles
- Security is frequently considered a cost rather than an investment or a business enabler
- Many security leaders in healthcare lack the business acumen to demonstrate their value

Common Healthcare Source Materials



Cs-137 (30 year half life):

Blood, research, and sterilization irradiators;
1,000 - 50,000 Ci



Co-60 (5 year half life):

Teletherapy and Gamma Knife units (cancer treatment);
1,000 – 10,000 Ci,
and panoramic irradiation (sterilization);
100,000 – 10,000,000 Ci



Ir-192 (73 day half life):

Brachytherapy (cancer treatment) and radiography
(industrial imaging);
10 - 150 Ci

At many U.S. healthcare facilities, the storage and transportation of radioactive materials in hospitals is primarily considered from the perspective of radiation safety rather than effective security.

Security Requirements for Hospitals

- There are very few prescriptive security requirements for hospitals in the U.S.
- Most regulatory language is targeted towards patient safety issues rather than security
- While the Nuclear Regulatory Commission has requirements for source licensees, those responsible for implementation and compliance do not always communicate with security and work independently to fulfill NRC criteria

NRC Security Requirements for Licensees

- Appropriate access controls to source storage
- Background checks for those with access to area
- Tracking of shipments of source materials
- Presence of security response protocols in the event of an incident, including coordination with local Law Enforcement agencies
- Security barriers to discourage theft or misuse of source material

GAO Report on Hospital Security Measures

- A Government Accountability Office report from September of 2012 stated, in part, that “...NRC requirements do not consistently ensure the security of high-risk radiological sources at the 26 selected hospitals and medical facilities GAO visited”.
- “One reason for this is that the requirements are broadly written and do not prescribe specific measures that hospitals and medical facilities must take to secure medical equipment containing sealed sources, such as the use of cameras or alarms”.

Examples of Poor Security from GAO Report

- “At one facility, cesium-137, was stored on a wheeled pallet down the hall from, and accessible to, a loading dock at one facility”;
- “At a second facility, the combination to a locked door, which housed an irradiator containing 1,500 curies of cesium-137, was clearly written on the door frame”;
- “At a third facility, an official told GAO that the number of people with unescorted access to the facility’s radiological sources was estimated to be at least 500”

Reaction to GAO Report

- While some findings of this report were deemed contentious, it suggests that though hospitals seek to meet the minimal NRC requirements, many fail to implement additional security enhancements since these are voluntary (even though many are fully or partially grant funded).
- The GAO report further recommended that the NRC should strengthen its security requirements by providing medical facilities with specific measures they must take to develop and sustain a more effective security program.

Programs to Enhance Healthcare Security

- With a lack of prescriptive requirements that healthcare facilities are obligated to meet regarding security measures, a number of programs have been introduced to assist in the creation of reasonable and cost effective countermeasures to prevent criminal activity
- These include government grant programs, public / private sector partnership training opportunities and educational efforts from professional associations and organizations

Office of Radiological Security (ORS)

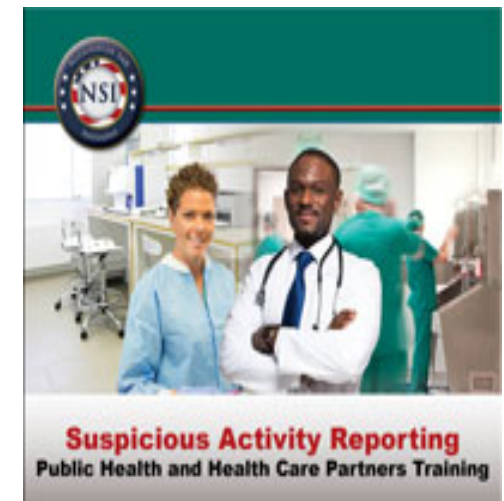
- ORS site protection enhancements include assessment of current countermeasures, physical security devices such as cameras, alarms, access controls and tamper / delay devices for source storage areas as well as first responder training for onsite security forces and local law enforcement agencies
- The ORS also works to safely remove disused radioactive sources and the replacement of medical devices with non-radioisotopic alternatives (such as cesium irradiators)

Silent Thunder Tabletop Exercises

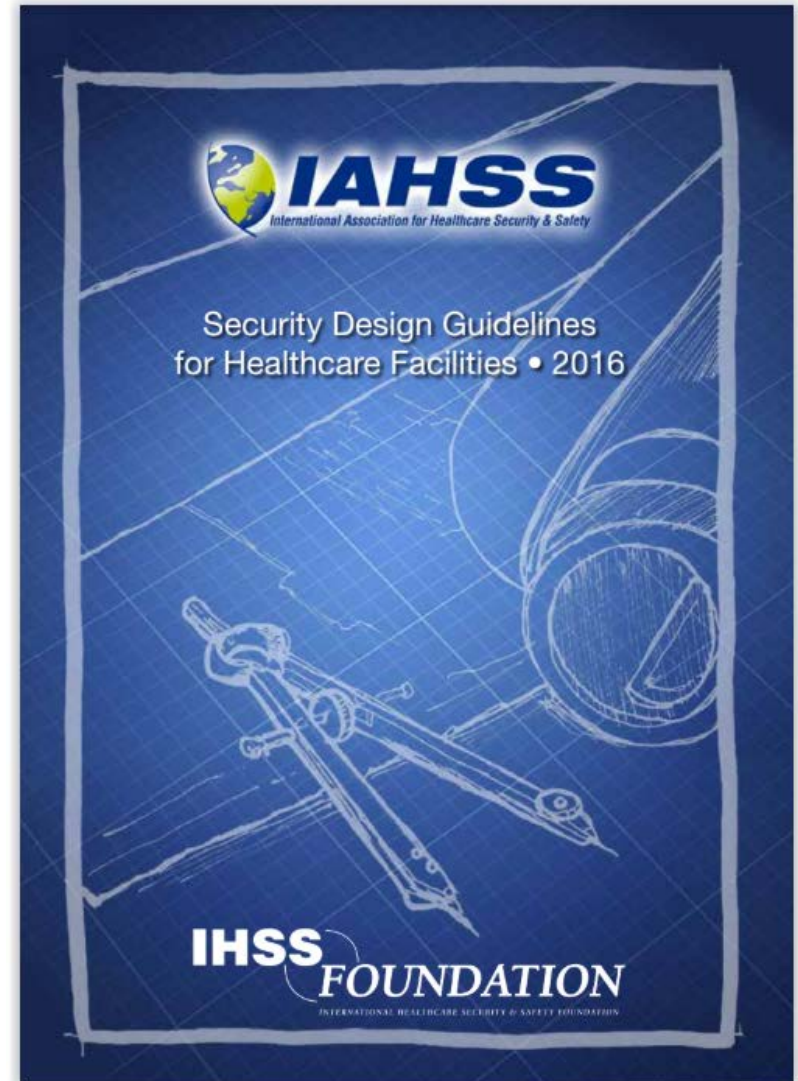
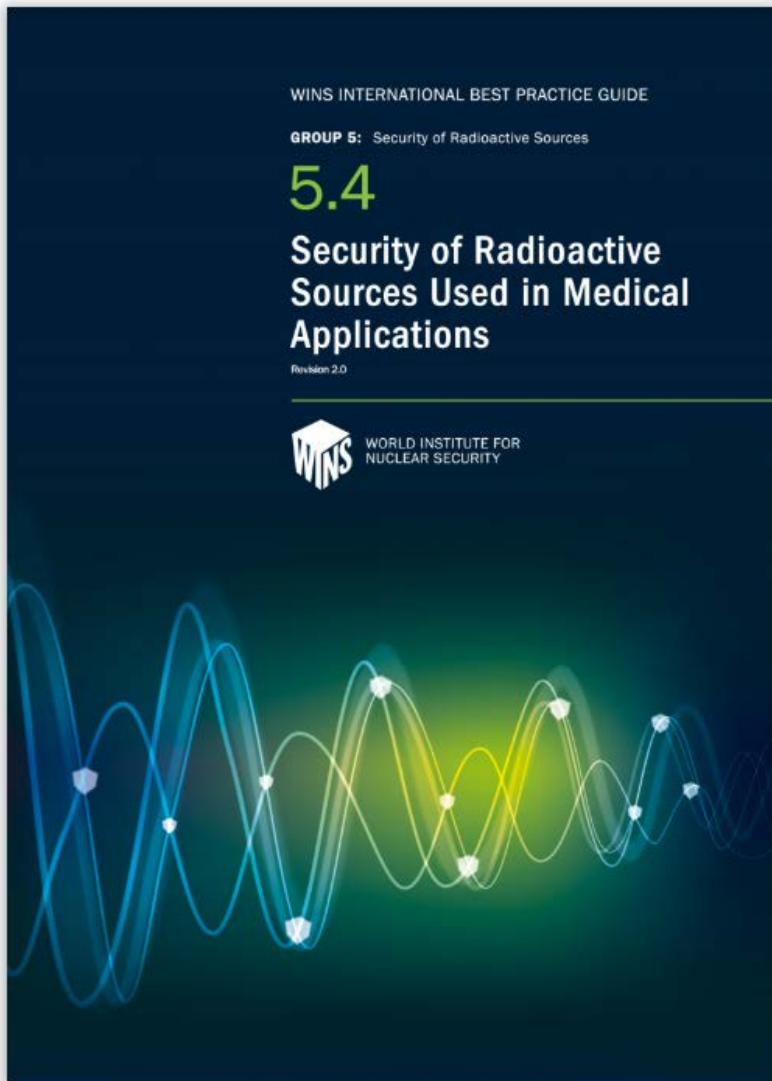
- The National Nuclear Security Administration (NNSA) and the Federal Bureau of Investigation (FBI) have partnered in a series of tabletop exercises named “Silent Thunder” which centers on a terrorist-created radiological incident impacting local communities and involving response and coordination from local to federal levels with hospitals as the target of the attack
- This program is designed for collaboration among representatives from local, state and federal agencies with a shared stake in ensuring a positive outcome in which no-fault, site-specific exercises allow leaders from all response and stakeholder organizations to exercise their crisis response and consequence management capabilities for a terrorist incident and use lessons learned to better prepare for such events

Suspicious Activity Reporting - SAR

- The FBI and DHS have worked together to create a multifaceted approach to training for the private sector designed to increase the effectiveness of state, local, tribal, and territorial law enforcement and public safety professionals and other frontline partners in identifying, reporting, evaluating, and sharing pre-incident terrorism indicators to prevent acts of terrorism.



Creation and Sharing of Best Practices



Next Steps for Resilient, Sustainable Programs

While much has been done to create a safe environment for radioactive sources in healthcare, there is still much work left to do regarding its security. Efforts can include:

- Enforcement of meaningful, outcome based security standards tied to accreditation status and leadership accountability, not just civil penalties and fines
- Better communication between RSOs and security leaders to work as a multidisciplinary team to bolster the security in hospitals and validate resources
- Proactive training to promote a security culture for all

In Closing

Security professionals for healthcare organizations are part of the critical infrastructure and are a key resource for the communities and populations which they serve and must be provided with adequate resources, expertise, and safeguards for their organization's protection.

It is only through continuing collaborative efforts and a proactive rather than reactive security model can we best convince healthcare organizations that proper security is an investment rather than a cost.

“Coming together is a beginning; keeping together is progress; working together is success.”

Henry Ford

“I don't know about y 'all, but I would prefer our first face to face not be over a smoking hole in the ground.”

FBI WMD Coordinator, Albuquerque NM

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