

Incident Planning Guide: Radiation Incident

Definition

This Incident Planning Guide is intended to address issues associated with a radiation incident (radiation dispersal device, small-scale improvised nuclear device, radiation leak or spill, etc.). Hospitals may customize this Incident Planning Guide for their specific requirements.

Scenario

During a well-attended local baseball game, a bomb explodes, destroying half of the stands in one wing and the nearby vending areas. As survivors flee the stadium, an additional smaller bomb explodes near an exit, creating multiple casualties. Law enforcement, fire, and emergency medical services (EMS) are first to respond; the number injured and fatalities are estimated in the hundreds. Surviving victims are evacuated to local hospitals, yours of which is the closest. Four people have self-transported to your hospital emergency department. During survivor triage at the scene, significant radiation levels are detected and hospitals are notified of the radiation findings. Local law enforcement has determined that the second bomb was a “dirty bomb” containing cesium-137 stolen from another hospital. A local militia group is claiming responsibility. By the end of the day, a total of 150 people have been transported by EMS to your hospital with varying levels of injury. Local response partners performed gross decontamination at the scene, but at least 40% of these people still show significant levels of radiation, as do two of the people who self-transported to your hospital. Later that evening, triage and patient decontamination have been completed and all victims have been treated, transferred to another hospital, or discharged. In your hospital, three staff show symptoms of radiation exposure and require treatment and two emergency department bays require decontamination, as does the entrance and the patient decontamination area. Local law enforcement is collaborating with the Federal Bureau of Investigation (FBI) in interviewing victims and has begun collecting evidence, including patient clothing and nasal swabs. There is a need for behavioral health counseling for patients, staff, and visitors impacted by the incident.

Does your Emergency Management Program address the following issues?

Mitigation

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| 1. | Does your hospital address the threat and impact of a radiation incident in the annual Hazard Vulnerability Assessment, including the identification of mitigation strategies and actions? |
| 2. | Does your hospital participate in pre-incident local response planning with public safety officials (e.g., emergency medical services, fire, and law enforcement), local emergency management officials, other area hospitals, regional healthcare coalition coordinators, and other appropriate public and private organizations, including meetings and conference calls to plan and share status? |
| 3. | Does your hospital have multiple methods and equipment for transportation of contaminated or decontaminated patients (e.g., chairs, stretchers, backboards and sled type devices, blanket drag, multiple person carry, single person carry)? |
| 4. | Does your hospital define and provide special equipment that may be needed during a Radiation Incident (sealing tape, heavy duty plastic, decontamination equipment, appropriate personal protective equipment, radiation monitoring equipment, etc.)? |
| 5. | Does your hospital have a plan to: <ul style="list-style-type: none"> <input type="checkbox"/> Secure the hospital and prevent contamination of patients, staff, and facilities? <input type="checkbox"/> Individually control heating, ventilation, and air conditioning and return air for impacted areas? |
| 6. | Does your hospital use expert information sources (e.g., Poison Control Center; Radiation Emergency Assistance Center/Training Site [REAC/TS], Radiation Emergency Medical Management [REMM], city or county emergency operations plans, etc.) when planning for radiation incidents, decontamination, and patient treatment? |
| 7. | Does your hospital identify how key missions (protection of life and provision of medical care) will be accomplished in the event of an electromechanical pulse (EMP) that destroys all electrical equipment in your area leaving your hospital without power, computers, communications, etc.? |

Preparedness

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| 1. | Does your hospital have a Radiation Plan? |
| 2. | Does your hospital exercise the Radiation Incident Plan yearly and revise it as needed? |
| 3. | Does your hospital have preparedness strategies to reduce the risk from a radiation incident? |
| 4. | Does your hospital have procedures to notify and engage appropriate internal and external experts, including: <ul style="list-style-type: none"> <input type="checkbox"/> Radiation Safety Officer, radiation health physicist, nuclear medicine supervisors and technologists, and radiology technicians as appropriate? <input type="checkbox"/> Security? <input type="checkbox"/> Emergency Department? <input type="checkbox"/> Safety? <input type="checkbox"/> Decontamination teams? <input type="checkbox"/> Respiratory? <input type="checkbox"/> Critical care? |

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| | <input type="checkbox"/> Burn specialists? <input type="checkbox"/> Engineering, facilities, and plant operations? <input type="checkbox"/> Toxicologist or chemical expert? |
| 5. | <p>Does your hospital provide staff training and exercise on:</p> <input type="checkbox"/> Use of decontamination equipment, including radiation detection and monitoring equipment, and maintaining the equipment in a ready state? <input type="checkbox"/> Decontamination and treatment of radiation exposed patients? <input type="checkbox"/> Use of appropriate level and type of personal protective equipment required? <input type="checkbox"/> Monitoring the health status of staff who participate in decontamination activities and providing appropriate medical follow up? <input type="checkbox"/> The management of contaminated and non-contaminated personal belongings? <input type="checkbox"/> Managing hospital security and personnel protection during a radiation incident? |
| 6. | <p>Does your hospital have a procedure to regularly inventory and obtain:</p> <input type="checkbox"/> Bed availability and census? <input type="checkbox"/> Antidote supplies? <input type="checkbox"/> Blood products and other required supplies? <input type="checkbox"/> Specialized equipment and supplies to respond to a radiation incident, including detection and monitoring equipment? |
| 7. | <p>Does your hospital's Radiation Plan address communications including:</p> <input type="checkbox"/> Pre event standardized messages for communicating the risks associated with this incident and recommendations to the public and the media? <input type="checkbox"/> Participation in the Joint Information Center in cooperation with local, regional, and state emergency management partners? <input type="checkbox"/> Use of social media for communication, including: <ul style="list-style-type: none"> ○ Who can use social media? ○ Who approves the use of social media? ○ When is the use of social media communication not appropriate? <input type="checkbox"/> Procedure for notification of internal and external authorities (local, county, region, state)? <input type="checkbox"/> A plan to distribute radios, auxiliary phones, and flashlights to appropriate people and hospital areas? <input type="checkbox"/> A plan for rapid communication of weather status (watch, warning)? <input type="checkbox"/> A plan for rapid communication of situation status to local emergency management and area hospitals? <input type="checkbox"/> A process to identify patients and to notify family members? |
| 8. | <p>Does your hospital have criteria and a rapid decision making processes to:</p> <input type="checkbox"/> Determine the safety threat to your hospital from the radiological incident? <input type="checkbox"/> Determine what safety measures should be taken to protect patients, staff, and visitors based on the threat? <input type="checkbox"/> Determine whether to shelter-in-place or evacuate (partial vs. complete hospital evacuation)? <input type="checkbox"/> Secure your hospital and control ingress and egress? |
| 9. | <p>Does your hospital have badge or real time dosimetry for detecting and monitoring radiation levels in your hospital and on your people? If not, who would you contact to provide this service, if needed?</p> |

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| 10. | Does your hospital consider the possibility of being a secondary terrorist target and plan for appropriate measures to protect the hospital? |
| Immediate and Intermediate Response | |
| 1. | <p>Does your hospital have a plan and procedures to rapidly initiate shelter-in-place, including:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Immediate shutdown of heating, ventilation, and air conditioning systems? <input type="checkbox"/> Securing access to the hospital? <input type="checkbox"/> Limiting hospital access to designated secure radiation screening points for staff and visitors entering your hospital? <input type="checkbox"/> Regularly reevaluating sheltering-in-place versus evacuating and coordinating decision making with local officials? |
| 2. | <p>Does your hospital have a Decontamination Plan that can be immediately activated to receive patients? Does the plan include:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Provisions for gross decontamination of victims until full decontamination can be conducted? <input type="checkbox"/> A triage process to separate contaminated victims from non-contaminated persons presenting? <input type="checkbox"/> A procedure to secure the decontamination area? <input type="checkbox"/> A process to monitor that medically qualified and fit tested personnel are available and assigned to use personal protective equipment to provide patient decontamination? <input type="checkbox"/> A process to contain or divert water run off collection and disposal in conjunction with the local Environmental Protective Agency and water authority, and to appropriately notify such authorities when decontamination is activated? <input type="checkbox"/> A process for monitoring of patients, staff, visitors, and decontamination of the hospital? <input type="checkbox"/> A procedure to provide appropriate personal protective equipment to staff and provide “just-in-time” training for staff participating in contaminated patient care? <input type="checkbox"/> Procedures to manage radioactive shrapnel in traumatically injured and contaminated patients in surgery? <input type="checkbox"/> Procedures to manage arriving patients with blast injuries? |
| 3. | <p>Does your hospital’s Communication Plan address:</p> <ul style="list-style-type: none"> <input type="checkbox"/> How your hospital receives timely and pertinent incident information from field command (radiological source information, decontamination provided, recommendations, etc.)? <input type="checkbox"/> A procedure to provide pertinent incident information to the decontamination team, all treatment areas, Security, and the Hospital Command Center? <input type="checkbox"/> A procedure to notify field command of hospital decontamination location and ingress and egress routes for emergency medical services? <input type="checkbox"/> A procedure to notify the local Emergency Operations Center or emergency management of operational status? <input type="checkbox"/> A procedure to receive information about the operational status of other area hospitals? <input type="checkbox"/> A process to establish a media briefing area? <input type="checkbox"/> A procedure to provide scheduled media briefings in conjunction with the Joint Information Center? <input type="checkbox"/> A plan to work with the local Emergency Operations Center to address risk communication issues for the public? |

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| 4. | <p>Does your hospital's Security Plan include:</p> <ul style="list-style-type: none"> <input type="checkbox"/> A procedure to secure the hospital to manage the influx of contaminated and non-contaminated patients? <input type="checkbox"/> Working with local law enforcement and public safety officers to preserve and secure evidence, contaminated patient belongings, and specimens? <input type="checkbox"/> A procedure to interface with local, state, and federal law enforcement agencies to interview patients, gather evidence, and investigate the incident? <input type="checkbox"/> Addressing the possibility that the perpetrators are among the injured? |
| 5. | <p>Does your hospital have a Fatality Management Plan that addresses:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Integration with local and state medical examiner or coroner? <input type="checkbox"/> Preservation of evidence and chain of custody? <input type="checkbox"/> Religious and cultural concerns? <input type="checkbox"/> Management of contaminated decedents? <input type="checkbox"/> Family notification procedures? <input type="checkbox"/> Behavioral health support for family and staff? <input type="checkbox"/> Documentation? |
| 6. | <p>Does your hospital consult with pre identified resident experts to obtain needed assistance; Poison Control Center; Radiation Emergency Assistance Center/Training Site (REAC/TS) and Radiation Emergency Medical Management (REMM), for assessment and treatment guidelines?</p> |
| 7. | <p>Does your hospital have the ability to determine the isotope involved and how this information will be obtained in order to guide further necessary treatments?</p> |
| 8. | <p>Does your hospital have "always on" radiation portal detection and procedures to assess victims of any explosion for radiation?</p> |
| 9. | <p>Does your hospital have procedures to assess patients for potential internal contamination (nasal swabs, use of gamma camera, urine collection, etc.)?</p> |
| 10. | <p>Does your hospital interface with local emergency medical services to transport and evaluate other victims who are potentially non-contaminated to alternate care sites?</p> |
| 11. | <p>Does your hospital have plans in place to safely contain areas of secondary contamination within the hospital (walk off mats, cordons, etc.) and contracts in place for assessment, cleanup, and restoration?</p> |
| 12. | <p>Does your hospital have a process to provide accurate and continuous incident documentation, computerized or manual, including:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Patient care? <input type="checkbox"/> Incident management (Incident Action Plan, Hospital Incident Command System forms, etc.)? <input type="checkbox"/> Incident related expenses? |
| <p>Extended Operations and System Recovery</p> | |
| 1. | <p>Does your hospital have criteria to prioritize business continuity and recovery activities including:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Repair and decontamination of the hospital? <input type="checkbox"/> Reevaluation of your hospital's ability to continue the medical mission and take corrective actions? |

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| | <input type="checkbox"/> Restoration of communication and power systems? <input type="checkbox"/> Communicating to, educating, and monitoring staff? <input type="checkbox"/> Repatriation of evacuated patients? <input type="checkbox"/> Restoration of the hospital and operations to normal? |
| 2. | Does your hospital have a plan and adequate supplies to maintain generator emergency power for an extended period? |
| 3. | Does your hospital have a procedure to perform a detailed physical assessment and inspection of the hospital to determine damage from the incident and any other system damage? |
| 4. | Does your hospital have procedures for: <ul style="list-style-type: none"> <input type="checkbox"/> Reporting and documenting staff exposures and injuries? <input type="checkbox"/> Addressing biohazardous and contaminated waste disposal? <input type="checkbox"/> Cleaning up the decontamination area and any other contaminated areas for reopening? |
| 5. | Does your hospital have procedures for providing behavioral health support and stress management debriefings to patients, staff, and visitors, including obtaining services of local or regional resources? |
| 6. | Does your hospital have a continuing process to capture all costs and expenditures related to operations? |
| 7. | Does your hospital have a process for submitting costs for disaster reimbursement from insurance carriers, as well as local, state, and Federal Emergency Management Agency disaster relief? |
| 8. | Does your hospital have Hospital Incident Management Team position depth to support extended operations? |
| 9. | Does your hospital have a Business Continuity Plan for long term events? |
| 10. | Does your hospital have procedures to collect and collate incident documentation and formulate an After Action Report and Corrective Action and Improvement Plan? |