



# **Radiological Emergency Surge Annex**

June 2023  
Version 1.0

Shawnee Preparedness and Response Coalition  
556 N. Airport Road, Murphysboro, Illinois 62966

## Signature Page

### SIGNATURE PAGE


This annex is developed in support of the Shawnee Preparedness and Response Coalition Regional Response and Recovery Plan to facilitate response to radiological emergencies.


This annex has been reviewed and approved by the SPARC Executive Board and the coalition member organizations with authority to approve. This annex addresses the Hospital Preparedness Program (HPP) grant requirements and is compliant with the principles outlined in the National Incident Management System (NIMS); it relies on strong working relationships, and effective networking efforts between all coalition member organizations and partners to manage incidents.

Version 1.0 Approved by the SPARC Executive Board on June 13, 2023.

  
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## Record of Revision and Distribution

This document reflects the ongoing work and mission of the Shawnee Preparedness and Response Coalition (SPARC) regional strategies for emergency preparedness and disaster response. Proposed changes shall be reviewed and approved by the SPARC Executive Board. This document will be revised annually or as needed after exercises, planned events and real-world incidents to identify gaps and to define strategies to address gaps with a collaborative approach to regional preparedness for potential radiation releases, whether of accidental or deliberate nature.

The revised document will be distributed electronically to each Executive Board Member. A copy of the document will be posted for the general membership on the Coalition’s website

<http://www.sparccoalition.com>.

When a change is made, an entry will be made in the following log:

Version Number	Description of Change	Date of Change	Individual Making Change

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## 1. Introduction

The 2019-2023 HPP Funding Opportunity Announcement (FOA) requires Healthcare Coalitions (HCCs) to develop a complementary coalition-level radiation emergency surge annex to their base medical surge/trauma mass casualty response plan. This annex aims to improve capacity and capabilities to manage exposed or potentially exposed patients during a radiation emergency. According to the 2017-2022 Health Care Preparedness and Response Capabilities, “Communities should be prepared to manage exposed or potentially exposed patients during a chemical or radiation emergency. During such events, individuals may go to various health care facilities, police and fire stations, and other locations for assistance...” (Capability 4, Objective 2, Activity 5).

### 1.1. Purpose

This annex provides guidance to support a coordinated healthcare response to a radiological emergency in which the number and severity of exposed or possibly exposed patients challenges the capability of SPARC member facilities. This annex establishes the roles and responsibilities, the operational concepts, and specific incident response coordination to properly plan for, manage, and care for patients during a radiological emergency.

This annex does not replace other county or local emergency operations plans or procedures, but rather builds upon the existing plans and their annexes.

### 1.2. Scope

This annex involves the coordination of healthcare organizations and the critical resources within the SPARC region and identifies the roles and responsibilities of the SPARC member organizations to support a radiological emergency.

SPARC will use the National Incident Management System (NIMS) for all emergency and disaster situations. This annex is intended to be used by, and provide coordination among, SPARC members and response partners, as needed during a radiological emergency.

At the scene of any radiological incident, it is very unlikely that any first on-the-scene responder will have the expertise needed to serve as the radiation subject matter expert. The SPARC region has limited availability of radiologists, including radiation oncologists, and radiology subspecialists who could be called upon to respond to a radiological incident. Should a local hospital’s emergency department need to take care of casualties from a radiation incident, nuclear medicine specialists and radiation safety officers may be relied upon to assist in the response.

The SPARC Radiological Emergency Surge Annex is intended to be a guidance and coordination document for a response to radiological emergencies within the region. This annex does not entail a complete list of procedures. Emergency procedures and checklists are the responsibility of the local

hospitals and responders. The radiation emergency response poster (*Attachment 1*) can be used as a tool to assist hospitals with planning for receipt and treatment of contaminated patient(s).

### 1.3. Overview and Background of SPARC

The following provides a brief overview of SPARC relative to a radiological emergency, including:

- Member Resources

Local hospitals and regional partners:

- 20/22 hospitals within the region have a Nuclear Medicine Department. Some hospitals have a radiation safety officer or other staff that may be able to assist in the response. Refer to Emergency Contacts (*Appendix 3.5*).
- 3 hospitals in the region have radiation detectors by ED doors.
- The RHCC has 1 decontamination trailer that may be deployed upon request.

- Resource Gaps

The following have been identified as a gap or shortfall during a radiological emergency and may need to be built or improved:

- Regional Joint Information Center (JIC) for healthcare
- Unified Command Structure in a radiological emergency
- Personal Protective Equipment (PPE) for radiological emergencies
- Radiological Training and Education
- Radiological Decontamination Training
- Radiation Detection Equipment (e.g., personal dosimeters, Geiger counter, pancake probes, etc.)
- EM Track for patient tracking
- Plastic bags for personal belongings and permanent markers for writing on bags
- Blankets

### 1.4. Situation and Planning Assumptions

#### 1.4.1. Situation

Radiological incidents may involve transportation accidents, industrial accidents, fires, weather related incidents, and deliberate actions such as a radiological dispersal device (RDD or dirty bomb).

Within the SPARC region, there are a limited number of radiological or nuclear-related scenarios that could occur, such as:

- Radioactive materials are transported across the region on a daily basis utilizing major interstates or roadways (I-57, I-64, Routes 13, 51, 148, etc.) and railways. There are also industrial uses of radiation, both subjected to radioactive materials incidents.
- Nuclear Attacks
  - Nuclear detonations in other areas of the United States could cause nuclear fallout.

### 1.4.2. Assumptions

- In the event of a radiological incident, the SPARC region would coordinate with the applicable Illinois and Federal agencies.
- IEMA-OHS is the lead State agency for all radiological incidents including transportation incidents and incidents at nuclear reactors and nuclear fuel storage facilities.
- IEMA-OHS provides technical assistance for all radiological incidents.
- A radiological emergency incident may occur without recognition or notification of local, state, or federal authorities, delaying response.
- Depending on size, scope and complexity of the radiological emergency incident, significant shortfalls may occur in state and local resources.
- Radiological incidents may result in radiation contamination in addition to other hazards such as fire, explosion, and toxic fumes.
- Firefighters will generally be the first responders to these types of incidents and the MABAS HAZMAT teams have radiation monitoring devices.
- Radiological incidents may be accidental in nature (e.g., industrial or transportation accident) or intentional, require prolonged response and involve extensive resource management challenges.
- This annex does not replace the need for protocols at each hospital and EMS agency.
- Hospitals must have appropriate plans, PPE, and equipment to receive and decontaminate patients as self-referral is common.
- Contamination assessments, proper PPE utilization, and decontamination efforts will be essential in protecting coalition partners, staff, and the public.
- The roles and responsibilities of agencies and organizations will change depending on the severity and scale of the incident and the respective level of activation by impacted jurisdictions and should be established ahead of an incident.
- State and Federal resources (e.g., ambulance contacts, HAZMAT, National Disaster Medical System [NDMS] teams) cannot be relied upon to mobilize and deploy for the first 72 hours.
- The Federal Bureau of Investigation (FBI) leads the criminal investigation if the radiological release was intentional. The FBI is responsible for determining whether an explosion involved radioactive materials.
- The U.S. Centers for Disease Control and Prevention (CDC) is the lead agency to support public health actions when state capacity and expertise are exceeded.
- The U.S. Department of Agriculture (USDA) will potentially be involved to assess the impact to crops, soil, livestock, poultry and processing facilities.

### 1.5. Hazard Vulnerability Analysis (HVA) – Radiological Incident

SPARC conducts an annual update of the Hazard Vulnerability Analysis (HVA) to identify hazards that have the highest impact on the regional healthcare system. Hazards are identified and prioritized as a result of local hazard identification and risk assessments taken together to provide an integrated picture



of risks facing the healthcare system. A summary of the HVA is maintained in the SPARC Regional Response and Recovery Plan or is available for review upon request.

## 1.6. Radiological Emergency Response Specific Vulnerabilities

### 1.6.1. Vulnerabilities

In the event of a radiological emergency within the SPARC region that results in a surge of exposed patients presenting to EDs, there will be an immediate need for critical care resources, including subject matter experts to assist with the timely, effective treatment of patients. The SPARC region recognizes such limitations and has incorporated specific processes within this annex to assist with the care of patients exposed to radiological hazards.

### 1.6.2. Type of Potential Radiation Emergencies<sup>1</sup>

Radiation emergencies may be intentional (e.g., caused by terrorists):

- Radiological Exposure Device (RED) – also called hidden sealed source, is made of, or contains radioactive material.
- Radiological Dispersal Device (RDD) – also known as a dirty bomb, is a mix of explosives such as dynamite, with radioactive powder or pellets.
- Improvised Nuclear Device (IND) – nuclear weapons that produce fallout (radioactive materials that can be carried long distances by the wind).

Radiation emergencies may be unintentional:

- Transportation Accidents – radioactive material transported by truck, rail, and other shipping methods.
- Occupational Accidents – workplaces like health care facilities, research institutions, and various manufacturing operations use radiation sources. Accidents can happen if radiation sources are used improperly, or if there are malfunctions of safety controls.
- Nuclear Power Plant Accidents – release of dangerous levels of radiation over an area (called a plume). Radioactive materials in the plume from the nuclear power plant can settle and contaminate people who are outdoors, buildings, food, water, and livestock.

## 1.7. RADIATION INJURIES AND ILLNESSES<sup>2</sup>

### 1.7.1. Radiation Syndromes

*Acute Radiation Syndrome (ARS)* or radiation sickness is caused by exposure to large amounts of radiation over a short period of time. The amount of radiation that a person’s body absorbs is called the radiation dose.

<sup>1</sup> Centers for Disease Control and Prevention, “Radiation Emergencies.”

<sup>2</sup> Centers for Disease Control and Prevention, “Preventing and Treating Radiation Injuries and Illness.”

Providers can refer to *Attachment 2* or visit [Radiation Emergency Assistance Center/Training Site \(REAC/TS\) Fact Sheet for Medical Providers \(orau.gov\)](#) for further information on radiation syndrome onset.

### 1.7.2. Medical Countermeasures for Radiation Exposure

Medical professionals will determine if treatments are needed. Contact **Illinois Poison Center (IPC) 1-800-222-1212**. Some medical treatments are available for limiting or removing internal contamination depending on the type of radioactive material involved. These treatments include, but are not limited to, the following:

- Potassium Iodide (KI)
- Diethylene triamine pentaacetic acid (DTPA)
- Prussian Blue

Refer [REMM - Isotopes of Interest: Properties, Treatment, and Fact Sheets](#) for further information.

## 2. Concept of Operations

### A. General

- When a radiological accident or incident occurs, the fire department in the affected jurisdiction will assume initial incident command and the on-scene Incident Commander has the authority to order an immediate evacuation of the area.
- Activate EOC in jurisdiction of radiological incident.
- The on-scene Incident Commander, or designated entity, should notify the local EMA who should remain in contact with the RHCC, in order to ascertain and share information needed to manage the incident.
- SPARC functions as a Multi-Agency Coordination (MAC) Group, coordinating resources and dissemination of information.
- During a radiological emergency, the Incident Command System and the National Incident Management System will be utilized to manage the incident.
- The RHCC staff will activate to support and coordinate health and emergency response for hospitals in its region.
- Emergency Medical Services (EMS) will transport exposed patients to hospitals.

### B. Activation

- The decision to activate this annex will be determined at the discretion of the RHCC.
- Set up of Incident Command (IC) and securing additional staff will occur upon activation of this annex.

C. Indicators/Triggers

Triggers that could prompt the initiation of this annex include, but are not limited to:

1. An accidental release of radioactive materials.
2. An intentional release of radioactive materials as an act of terrorism.

D. Notifications

Upon receipt of notification of an incident that involves radioactive material, or radiation, the RHCC will:

- Provide initial notification of an actual or potential incident, and/or activation of this annex to the IDPH Duty Officer, IEMA-OHS Duty Officer, SPARC Executive Board, and the SPARC membership.
- Depending on the disaster and time of day, individual hospital notification of an incident will come through the Sheriff’s dispatcher, local EMS, local EMA, other hospitals or IDPH via telephone, E-mail, or the Health Alert Network (HAN)/SIREN.

**When reporting a radiological incident, the message should include:**

- Location of the disaster or event
- Type and extent of the situation
- Hazardous materials involvement
- Wind direction
- Approximate number of victims involved
- Potential evacuations
- Contact information
- Resources needed

2.1. Organization and Assignment of Responsibilities

This section defines the role of SPARC, partner agencies and facility support and coordination roles specific to a radiological emergency. A radiological emergency of any scale will likely be beyond the capabilities of local and regional healthcare resources and require assistance at the state or federal levels.

Primary Agency	Roles and Responsibilities
Shawnee Preparedness and Response Coalition (SPARC)	<ul style="list-style-type: none"> <li>▪ Functions as a MAC Group</li> <li>▪ Serves as a hub for communication and coordination of resources</li> <li>▪ Coordinate regional training and exercises with all healthcare partners in the region</li> </ul>

Support Agencies/Facilities/Organizations	Roles and Responsibilities
Regional Hospital Coordinating Center (RHCC)	<ul style="list-style-type: none"> <li>▪ Coordinate regional healthcare response to disasters when the local response is overwhelmed</li> <li>▪ Coordination of supply/equipment caches and services</li> <li>▪ The RHCC Manager collects and distributes situational awareness information to and from healthcare organizations during a disaster</li> <li>▪ Process member facility 213RR requests for medical resources (RFMR)</li> </ul>
Hospitals	<ul style="list-style-type: none"> <li>▪ Establish Hospital Incident Command System (HICS)</li> <li>▪ Provide medical care for affected patients</li> <li>▪ Activate hospital decontamination team</li> <li>▪ Provide timely situational awareness information to the RHCC</li> <li>▪ Maintain and distribute upon request a medical supply bag(s)</li> </ul>
Other Healthcare Facilities (including: Long Term Care Facilities, Rural Health Clinics, Federally Qualified Health Centers)	<ul style="list-style-type: none"> <li>▪ Establish organization Incident Command System (ICS) per organization Disaster Plan</li> <li>▪ Provide medical care for affected patients</li> <li>▪ Provide timely situational awareness information to the RHCC</li> </ul>
Emergency Medical Services (EMS)	<ul style="list-style-type: none"> <li>▪ Assist with decontamination of patients</li> <li>▪ Provide on-scene medical care</li> <li>▪ Provide interfacility transport of patients</li> </ul>
Local Health Departments (LHD)	<ul style="list-style-type: none"> <li>▪ ESF-8 lead in its jurisdiction</li> <li>▪ Coordinate public health surveillance and investigations in local jurisdiction</li> <li>▪ Coordinate risk communication and public information</li> <li>▪ If warranted, activate the Mass Dispensing and SNS Plans</li> <li>▪ Behavioral health services may be available in some jurisdictions following a radiological incident</li> <li>▪ Validate and coordinate hospital resource request for medical supplies and forward validated requests to local jurisdictional EMA</li> </ul>

<p>Local Emergency Management Agency (EMA)</p>	<ul style="list-style-type: none"> <li>▪ Coordinate response efforts in its jurisdiction</li> <li>▪ Coordinate shelter and care of evacuees</li> <li>▪ Coordinate with IEMA-OHS to deploy state resources</li> <li>▪ Support fatality management surge</li> <li>▪ Receive and process requests for medical resources from the local jurisdictional Public Health Department</li> <li>▪ Validate and process direct requests for hospital non-medical resources and all resource requests for non-hospital entities</li> </ul>
<p>Local Fire Departments</p>	<ul style="list-style-type: none"> <li>▪ Assume Incident Command and establish a Command Post if the incident occurs in their jurisdiction</li> <li>▪ Perform firefighting duties as necessary</li> <li>▪ Order evacuations, in consultation with Incident Command</li> <li>▪ Establish initial radiation monitoring</li> <li>▪ Establish emergency decontamination</li> <li>▪ Assist in rescue and recovery efforts</li> </ul>
<p>Local Law Enforcement</p>	<ul style="list-style-type: none"> <li>▪ Site security and traffic control in coordination with ISP</li> <li>▪ Early assessment, hazard recognition and communication of accurate incident conditions</li> <li>▪ Establish evacuation routes</li> <li>▪ Assistance with crime scene processing and local coroners for body identification</li> <li>▪ If the cause or suspected cause of the radiological incident is a criminal or terrorist act, local law enforcement agencies will assist the Illinois State Police and Federal Bureau of Investigation in their criminal investigation</li> <li>▪ If the cause or suspected cause of the radiological incident is a transportation accident, local law enforcement agencies will assist state and Federal agencies conducting the accident investigation</li> </ul>

<p>Mutual Aid Box Alarm System (MABAS)</p>	<ul style="list-style-type: none"> <li>▪ Provide emergency response support for radiation monitoring and decontamination for the general public and/or emergency workers</li> <li>▪ Provide EMS resources for the RRG and other forward deployed assets during a radiological emergency event</li> <li>▪ Mobilization of HAZMAT teams, upon request</li> <li>▪ Assets requested by MABAS members through dispatch</li> </ul>
<p>American Red Cross (ARC)</p>	<ul style="list-style-type: none"> <li>▪ Provide basic health support services</li> <li>▪ Provide emotional counseling and psychological first aid services to the affected population and disaster workers</li> <li>▪ Provide mass care services for evacuees and emergency workers including: sheltering, mobile feeding or feeding at a fixed location, and bulk distribution of relief supplies</li> </ul>
<p><b>Support State Agencies</b></p>	<p><b>Roles and Responsibilities</b></p>
<p>Illinois Emergency Management Agency and Office of Homeland Security (IEMA/OHS)</p>	<ul style="list-style-type: none"> <li>▪ Coordinate overall radiological response activities</li> <li>▪ Coordinate state resources/collects information to request disaster declarations (state and federal) as indicated</li> <li>Provide assistance 24 hours a day in monitoring equipment and readings, decontamination, proper contamination controls and dispatch additional assistance</li> </ul>
<p>Illinois Law Enforcement Alarm System (ILEAS)</p>	<ul style="list-style-type: none"> <li>▪ Provide participating agencies with law enforcement manpower and equipment support during a radiological emergency event</li> <li>▪ Weapons of Mass Destruction Special Response Team (SRT), upon request</li> <li>▪ When a crisis strikes an agency, the Incident Commander can call the ILEAS dispatch center and describe what type of assistance is needed.</li> </ul>

<p>Illinois Department of Public Health (IDPH)</p>	<ul style="list-style-type: none"> <li>▪ Lead State agency for ESF-8 public health and medical response operations</li> <li>▪ Provide technical assistance and coordination for planning and implementing the evacuation of health care facilities, obtaining emergency medical services where needed, assuring safe healthy living conditions at evacuation sites, and providing additional consultation and technical assistance as needed</li> <li>▪ Coordinate public health, medical emergency and risk communication messages</li> <li>▪ Coordinate with RHCC for intelligence gathering, information dissemination, additional resource requests, and coordination of efforts</li> <li>▪ Coordinate with the Federal Centers for Disease Control and Prevention (CDC)</li> <li>▪ Order medical supplies and equipment from the Strategic National Stockpile (SNS)</li> </ul>
<p>Illinois Poison Center (IPC)</p>	<ul style="list-style-type: none"> <li>▪ Information and treatment advice on potentially harmful substances, including radiation exposure and treatment</li> </ul>
<p>Illinois Department of Agriculture (IDOA)</p>	<ul style="list-style-type: none"> <li>▪ Monitor sick livestock, safe housing and disposition of livestock and release of livestock for market</li> <li>▪ Assist with the collection of samples for analysis including crops, grains, feeds, seeds and fertilizer</li> <li>▪ Inspect animal feeds mills and take samples for laboratory analysis</li> <li>▪ Inspect grain warehouses</li> <li>▪ Supervise all meat and poultry processing distribution</li> <li>▪ Inspect and monitor all egg producers and processors</li> <li>▪ Inspect, sample and analyze horticultural products</li> </ul>
<p>Illinois National Guard 5<sup>th</sup> Civil Support Team (CST)</p>	<ul style="list-style-type: none"> <li>▪ At the Governor’s direction, support decontamination of response personnel and/or the general public during a radiological emergency event</li> <li>▪ Support radiation monitoring in the environment</li> <li>▪ Provide evacuation support and emergency medical transportation</li> </ul>

Support Federal Agencies, if needed	Roles and Responsibilities
National Weather Service (NWS)	<ul style="list-style-type: none"> <li>▪ Provide weather, water and climate data. Advice on wind speed and direction forecasts to inform on evacuations, shelter-in-place orders during a radiological emergency</li> <li>▪ Responsible for issuing advisories, warnings, statements, and short-term forecasts</li> </ul>
Centers for Disease Control and Prevention (CDC)	<ul style="list-style-type: none"> <li>▪ Provides guidance to State authorities regarding planning and response strategies during a radiological disaster</li> </ul>
Federal Bureau of Investigation (FBI)	<ul style="list-style-type: none"> <li>▪ Lead agency for responding to threats from weapons of mass destruction (WMD).</li> <li>▪ Investigate and collect intelligence on WMD related threats and events to prevent attacks and respond to events when they occur.</li> </ul>

## 2.2. Resource Management and Logistics

Resource Management will include mutual aid and assistance agreements, that may require the use of state and federal teams and mobilization of critical resources. During a radiological emergency, resource prioritization will occur at the state level and resources will be filled based on formal requests through the local EMA.

### 2.2.1 Hazardous Materials Response Teams

The Incident Commander will mobilize local Hazardous Materials (hazmat) Teams based out of Marion, Illinois or Herrin, Illinois to respond in a radiological emergency within the region. It is the responsibility of the hazmat team to detect and identify hazardous materials in order to limit personnel exposure as well as reduce the spread of contamination. On-scene of a radiological emergency, the hazmat team will utilize a Geiger counter to detect and measure radiation and perform several tests to identify the substance(s). When the substance is identified, it will then be collected and labeled and any evidence in preparation for transportation. Responders can consult the *Emergency Response Guidebook (2020)* for hazardous materials emergency procedures.

MABAS may also be mobilized to augment response resources. MABAS has the following assets (but not limited to):

- 1 decontamination trailer housed at the Lake of Egypt Fire Department
- EMS Triage/Treatment Vehicle
- Radiation Response Kit
  - Survey meter
  - Gamma scintillator detector



- Alpha-Beta-Gamma detector
- Beta scintillator
- Handheld radionuclide identification device (RID)
- Personal radiation monitor

Resource requests for assistance and what resources are being deployed should be documented to ensure appropriate reimbursement.

### 2.3. Operations – Medical Care

When treating a patient with known or potential radioactive contamination, medical stabilization and resuscitation shall come first and shall not be delayed to perform decontamination.

Providers can refer to the Radiation Emergency Medical Management – REMM [Burn Triage and Treatment of Thermal Injuries in a Radiation Emergency](#) for guidance on the immediate care of burned patients. With no dedicated burn beds and burn specialists in the region, transfer of patients to specialized burn centers will be needed.

The *SPARC Regional Burn Surge Annex* provides guidance to its member facilities until burn patients can be transferred to burn centers. Visit the SPARC website for planning documents.

#### 2.3.1. Triage and Screening

Primary triage will be performed at the first encounter with the patient by EMS in the field. EMS will follow their system protocols for response to a radiological emergency and triage patients using State approved MCI triage methods (START/JumpSTART®).

- Personal protective equipment (PPE) should include proper clothing and equipment worn by first responders and first receivers to prevent or mitigate illness or injury (e.g., N95 mask, head and shoe covering, double gloves and apron or Tyvek suit).
- In a radiological emergency, the Illinois Poison Control will be in consultation with REAC/TS to provide medical guidance.
- Depending on the event and prioritization of resources, IEMA-OHS/Division of Nuclear Safety may take the lead on establishing screening centers if needed during a radiological emergency. It will be the responsibility of the local entities to identify these centers.
- For large-scale radiological incidents, LHDs and other local agencies may be able to provide staff to support the operation of a Community Reception Center if IEMA-OHS/Division of Nuclear Safety determines that one is needed.

#### 2.3.2. Decontamination

- Decontamination shall not delay or impede stabilization of any patient. (REMM, Procedures for Radiation Decontamination).
- Hospitals should have plans in place for treating and handling radiation contaminated patients.
- Removal of clothing can reduce contamination on the patient up to 90%.
- Removal of contamination from hair and skin (and wounds) via one (or all) of three forms:

- Dry and wet emergency decontamination
- Gross decontamination – passing of patients through a high volume of low-pressure water mist.
- Technical decontamination consists of wiping around patient’s mouth before applying oxygen mask, wiping skin before inserting IV, or surrounding patient with blanket or double sheets for transport.
- May refer to the following list of resources for further guidance:
  - EMS can refer to the *Emergency Response Guidebook (ERG) 2020* as a go-to manual to help deal with transportation incidents involving hazardous materials.
  - Radiation Emergency Medical Management (REMM) – Radiation Contamination: Diagnose and Manage (refer to Attachment 3)
  - Radiation Emergency Medical Management (REMM) – Follow-up Instructions for Individuals Involved in a Radiological or Nuclear Emergencies
  - Federal Emergency Management Agency (FEMA) for radiological emergency preparedness planning, training, and exercise guidance.
  - Modular Emergency Radiological Response Transportation Training (MERRTT) Patient Handling
- May contact the hospital Radiation Safety Officer for further guidance.

### 2.3.3. Patient Care/Management

Hospitals should have transfer agreements with burn centers in place to provide patients with higher level care at a specialized medical facility. Refer to *Regional Burn Surge Annex* and *State Burn Surge Annex* for further guidance.

In a large-scale radiological emergency involving a significant number of exposed patients, resources needed to care for exposed patients may be quickly depleted. This could lead to healthcare providers having to adapt normal standards of care and to implement resource allocation strategies or crisis standards of care for those seeking or currently receiving care at their facility. May contact the **Illinois Poison Control at 1-800-222-1222** for further guidance.

### 2.3.4. Safety and Control Measures

Healthcare facilities will follow the radiation protection principles of time, distance, and shielding during a radiological emergency to reduce dose rates. May refer to list of resources in *Section 2.3.2*.

- Dosimeters, radiation meters, and radiation detectors, proper PPE utilization, and decontamination efforts will be essential in protecting coalition partners, staff, and the public.

#### 2.3.4.1. Evacuations

A radiological incident could result in the evacuation of a community near the scene of the incident. The Incident Commander will assess the situation and make the determination to order the evacuation of the immediate area. These protective measures will be taken to protect the health and safety of the public. Counties should refer to their Emergency Evacuation Plan for procedures. SPARC will support and communicate evacuations to coalition membership.

#### 2.3.4.2. Shelter-In-Place

For most no-notice radiological incidents the action may be to take shelter rather than evacuate to reduce exposure to radiation. Shelter-in-place will be the initial recommendation until more information about the situation and the potential contamination areas are known. SPARC will support and communicate shelter-in-place orders to coalition membership. The LHDs have a support role of ESF-6 providing emergency shelter within the affected area.

#### 2.3.4.3. Waste Management

Hospitals will work through their normal vendors and channels to ensure all waste produced in the screening and care of patients exposed in a radiological emergency will be handled and disposed of appropriately. If facility/agency capabilities become overwhelmed, contingency plans for waste management and environmental inspections will be activated. If necessary, hospitals may coordinate or contract with specific waste management contractors for the safe handling and removal of radioactive waste.

#### 2.3.4. Fatality Management

Hospitals should determine appropriate plans and procedures for fatality management with the local medical examiner and/or county coroner in the event of a radiological emergency. Refer to individual facility plans and county coroner plans.

- If all local resources have been exhausted, IEMA-OHS Regional Coordinator can provide possible solutions for cold storage such as refrigerated trailers or options for the DMAT teams throughout the state. A request for state assistance should be routed through the local EMA.

#### 2.3.5. Inter-Facility Transport

Every hospital should have transfer agreements with burn centers and an arrangement with an EMS Provider for transporting patients. If assistance is needed, Providers can refer to the *Radiation Injury Treatment Network*. RITN is a national network of medical centers with expertise in managing bone marrow failure. They work with partners from other medical specialist to assist with managing acute radiation syndrome and its health-related consequences. Refer to the Emergency Contacts list in *Section 3.5* for RITN Participating Hospitals in Illinois and Missouri. For a complete list of participating hospitals visit <https://ritn.net/about/participating-hospital-locations>.

#### 2.3.6. Post-Incident Surveillance, Patient Tracking & Situational Awareness

- Every hospital should have a policy regarding patient tracking. Refer to individual facility plans.
- The LHDs will coordinate public health and disease surveillance and investigation in its local jurisdiction.
- The RHCC will gather data to provide a comprehensive picture of the radiological impact to the healthcare system and local jurisdictions. The RHCC will ensure that information is distributed

on a regular schedule with appropriate partners and stakeholders to guide response decision making.

### 2.3.7. Rehabilitation and Outpatient Follow-up Services

Healthcare facilities should coordinate rehab and outpatient follow-up services according to treatment protocols as determined by the practitioner. Depending on incident parameters, rehabilitation and follow-up services for radiation exposed patients may exceed current capabilities within the SPARC region and may require patients to travel to healthcare facilities outside of the region.

### 2.3.8. Deactivation and Recovery

When it is determined that the situation is contained, in coordination with IEMA-OHS, IDPH, LHDs and EMAs, the RHCC will relay pertinent information to the coalition membership that the situation has been contained and the region has returned to a normal condition. This may occur on a local or county-by-county basis.

- Recovery planning will start early in the event and will follow the recovery processes outlined in the ESF-8 Plan. The RHCC will support recovery activities needed to help individuals and communities return to normal.

### 2.3.9. After-Action Reporting

Following a radiological emergency, SPARC members will have the chance to identify strengths to be maintained and built upon, as well as identifying potential areas of improvement. Findings will be captured in the after-action report (AAR) and distributed to SPARC membership (upon request), denoting lessons learned, best practices and recommendations for future planning, training, and exercise development. Any relevant plans, policies and procedures will be updated accordingly.

### 2.3.10. Annex Maintenance

The SPARC Radiological Emergency Surge Annex is a living document. The SPARC Executive Board or designee will update the annex annually or as needed after exercises, planned events and real-world incidents to identify gaps and to define strategies to address gaps.

## 2.4. SPECIAL CONSIDERATIONS

### 2.4.1. Behavioral Health

Upon request, American Red Cross may provide access to a continuum of stepped-care mental health services for patients, caregivers, and providers with emphasis on radiation survivor support and radiation counseling that may include telehealth options to support long-term mental health implications in cases with prolonged or severe dose rate exposure.

- Some local health departments that offer behavioral health services may also be involved with meeting behavioral health needs following a radiological emergency.

## 2.4.2. Pediatric and At-Risk Populations

The *SPARC Pediatric Surge Annex* provides guidance for regional surge incidents resulting from an influx of pediatric patients. Hospitals include considerations specific to at-risk populations and people with special needs (e.g., children, communities of color, elderly populations, individuals with underlying physical and behavioral health conditions, persons experiencing access to care issues, language barriers, individuals experiencing homelessness, and incarcerated individuals) who could be more vulnerable during a radiological emergency. Health care providers may consider the resources available to respond appropriately to the needs of at-risk populations before, during, or after a radiological emergency.

- For dosing guidance, contact the **Illinois Poison Control Center 1-800-222-1222**.

## 2.4.3. Communications

Emergency communications throughout response and recovery will be conducted in accordance with standard operating procedures and managed using established procedures, processes and policy outlined in the *SPARC Emergency Communications Plan*.

- In the event of a radiological emergency within the region, messages will be updated to reflect current conditions and new information as it is gathered to ensure all agencies involved are able to communicate quickly and clearly to ensure consistent decision-making. Primary and alternate communications will follow those established in the State ESF-8 Plan (e.g., SIREN, EMResource, etc.).
- The RHCC has a role in information collection, sharing, and dissemination to provide a comprehensive operational picture to healthcare facilities and local jurisdictions in a radiological emergency.

### 2.4.3.1. Media/Public Communications

- The IC/UC may use a Joint Information Center (JIC) to support the gathering, verification, coordination, and dissemination of accurate, accessible, and timely information during a radiological emergency.
- The designated Public Information Officer (PIO) will disseminate rapid and consistent healthcare information to the public during a radiological emergency. Public Messaging may include:
  - **Get Inside, Stay Inside, Stay Tuned.** Refer to *Section 2.3.4.2. Shelter-In-Place*.
  - Self-decontamination procedures. Refer to *Attachment 4. CDC Decontamination for yourself and others*.
  - How, when and where to be screened. It will be the responsibility of the local entities to identify these centers.

### 3. Appendices

#### 3.1. Radiological Training and Exercises

Individual agencies and organizations are responsible for training their own personnel. However, there is specific training for CBRNE incidents, including radiological surge events:

- The RHCC offers training in ICS courses. Visit [www.sparccoalition.com](http://www.sparccoalition.com) for training resources.
- The Illinois Emergency Management Agency/Division of Nuclear Safety offers radiation training for regional HCCs. Refer to *Attachment 5* for training syllabus.
- REAC/TS Just-In-Time Training <https://orise.orau.gov/resources/reacts/triage.html>.
- Additional hands-on training is offered through the Center for Domestic Preparedness (CDP) in Anniston, Alabama. Visit <https://cdp.dhs.gov> for training opportunities.
- Texas A&M Engineering Extension Service (TEEX) <https://teex.org/> offers training in CBRNE events.
- Emergency Management Institute (EMI) <https://training.fema.gov/> offers courses in Integrating Access and Functional Needs into Emergency Planning.
- American Red Cross <https://www.redcross.org/take-a-class/disaster-training> offers fundamental training.

#### 3.2. Legal Authorities

- 3.2.1 Illinois Compiled Statutes 210 ILCS 50, Emergency Medical Services (EMS) Systems Act, as amended.
- 3.2.2 The primary authority within each EMS region for coordinating EMS System licensed providers in response to an emergency medical incident(s) as a result of a disaster or other large scale event rests with the EMS system(s) medical director(s).
- 3.2.3 The RHCC and/or regional HCC shall have authority to coordinate supply/equipment caches and services (other than EMS licensed providers) as outlined in the approved Regional Response and Recovery Plan and IDPH ESF-8 Plan and within the scope of the IDPH Hospital Preparedness Program (HPP).
- 3.2.4 IDPH is mandated by statute to protect the public health.
- 3.2.5 In the event of circumstances that require an immediate action to protect the public health and safety, the Incident Commander is authorized to order or implement necessary protective actions. If possible, the Incident Commander, or designated entity, should consult with, and seek the advice of, the radiation subject matter expert on any decisions involving radiation prior to taking such actions.
- 3.2.6 EMA is the lead agency for response coordination in their jurisdiction.

#### 3.3. Attachments

1. Radiation Emergency Response Poster – Incident Checklist
2. REAC/TS Fact Sheet for Medical Providers
3. REMM Radiation Contamination: Diagnose and Manage

4. CDC Decontamination for Yourself and Others
5. Radiation Annex Training Syllabus for Regional Healthcare Coalitions – Illinois Emergency Management Agency/Division of Nuclear Safety

Attachment 1 – Radiation Emergency Response Poster Incident Checklist

# RADIATION EMERGENCY RESPONSE



## Incident Checklist



**1. NOTIFICATION**

- Initial Call \_\_\_\_\_ time
- Number of Patients
- Mechanism of Injury
- Contamination Status
- Estimated Time of Arrival
- Call-back Verification if Caller is Unknown

**2. REA PREPARATION**

- Staff Notifications and Briefing
- REA Set-up
- Ambulance Entry Set-up
- Don Protective Clothing
- Obtain and Log Dosimetry, if needed
- Background Radiation Reading \_\_\_\_\_ cpm

**3. PATIENT ARRIVAL**

- EMS Medical Turnover
- Radiological Report and Turnover Survey
- Patient Transfer

**4. PATIENT CARE & ASSESSMENT**

- Triage
- Survey Inhalation/Ingestion Pathways
- Nasal / Oral Swabs
- Patient Evaluation
- Patient Treatment

**5. SAMPLE COLLECTION**

- Monitor and Double Bag all Samples
- Label Samples
- Document Samples
- Survey Open Wounds / Flush

**6. RADIOLOGICAL ASSESSMENT**

- Radiological Survey of Patient
- Document Survey

**7. PATIENT DECONTAMINATION**

- Remove Contaminated Bandages
- Remove ALL Clothing
- Isolate Contaminated Areas
- Wash Contaminated Area
- Rinse Contaminated Area
- Dry Contaminated Area
- Re-Survey Area after each Decon
- Document Survey Results
- Repeat Decon as Required

**8. PATIENT EXIT**

- Final Release Survey, <2 x's Background
- Clean Exit Pathway
- Clean Team Transfer

**9. STAFF EXIT**

- Remove Protective Clothing
- Final Release Survey
- Remove Dosimetry and Complete Card

**10. REA Return to Service**

- Clean REA
- Inventory REA Supplies
- Survey & Document Trash

**REACTS**  
24 Hour  
Emergency Service Number  
(865) 576-1005




**IEMA 217-782-7860**





Attachment 2 – REAC/TS Fact Sheet for Medical Providers



# REAC/TS

Radiation Emergency Assistance Center/Training Site  
<https://orise.orau.gov/reacts>

## REAC/TS Fact Sheet for Medical Providers

**Fast Facts:**

**Exposed only:** Individuals exposed to a discrete, intact radioactive source have radiation exposure, not contamination. They present no risk to treating medical personnel.

**Contaminated:** Radioactive contamination on bodies or clothing (external contamination) or have inhaled/ingested/absorbed (internal) radioactive contamination are at continued risk of worsening radiation injury and after life-saving treatment, should be decontaminated and / or treated for internal contamination. Risk may be mitigated to care-giver and patient.

**Radiation Combined Injury:** Trauma and / or burns in addition to radiation injury. These patients will increase 1-2 triage acuity categories and will have a worse prognosis.

**Mitigating Risk:** Rapid removal of casualties from blast site, getting out of the area around the blast site, treating in a solid shelter, when possible, and use of personal protective equipment as appropriate to the hazard or hazards.

**Ionizing Radiation Injury:**

Ionizing radiation induced biological effects are determined by:

- Dose, Dose rate, Volume of body part exposed, Radiation type, Co-existing health conditions, Trauma, Burns
- Main site of cellular injury: DNA (immature/rapidly dividing cells at high risk)

**Acute Radiation Syndrome:**

**TREAT LIFE-THREATENING CONDITIONS FIRST!**

The lethal dose (LD) that kills 50% of the exposed population (LD50) within 60 days after exposure (LD50/60) is:

Dose leading to sub-syndromes:	
Subclinical	0-1 Gy
Hematopoietic	≥1-2 Gy
Gastrointestinal	5 - 6 Gy
Neurovascular	10 Gy
Cutaneous	6 Gy

Healthy, young adults without therapy: ~3.5 – 4.0 Gy

Shifts to right with adults with antibiotics, supportive care and colony stimulating growth factors

**Sub-syndromes:**

**Hematopoietic (bone marrow) syndrome:** Loss of lymphocytes followed by neutrophils, and later, loss of red blood cells (RBCs) and platelets

Immune dysfunction, infections and sepsis, impaired wound healing, and hemorrhage may also occur


**Treatment:** Neutropenic precautions, consider prophylactic fluoroquinolones and/or other antimicrobials

U.S. FDA approved treatments:

G-CSF, PEGylated G-CSF, GM-CSF:

- Filgrastim: 10 mcg/kg, subcutaneous q day
- PEGfilgrastim: 2 doses, 6 mg each given 1 week apart
  - Pediatric: < 10 kg: 0.1 mg/kg; 10-20 kg: 1.5 mg; 21-30 kg: 2.5 mg; 30-45 kg: 4 mg
- Sargramostim (GM-CSF):
  - Adults and Pediatric patients > 40 kg: 7mcg/kg
  - Pediatric patients 15 kg to 40 kg: 10 mcg/kg


Romiplostim: Thrombopoietin receptor agonist for thrombocytopenia:  
[nplate\\_pi\\_hcp\\_english.pdf \(amgen.com\)](#)



**Putting on Protective Clothing (Donning)**



- 1 Shoe Covers.
- 2 Coveralls or Isolation Gown: At minimum, fully cover torso from neck to knees, arms to ends of wrists. Fasten or secure appropriately.
- 3 First set of gloves underneath cuff of coveralls or gown.
- 4 Tape sleeves and trouser cuffs (as applicable). Tape any other potential areas of contaminant entry, such as an uncovered zipper.
- 5 Face Mask: Secure ties or elastic band. Fit flexible band to bridge of nose and secure below chin.
- 6 Head Covering.
- 7 Face Shield or Goggles.
- 8 Second set of gloves. Extend to cover wrist of coveralls or isolation gown.
- 9 Identifying Information: Name and role on front and back of protective wear.
- 10 Dosimeter (if available).

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Advancing the Future of Energy



### REAC/TS RADMED App

Search RADMED on Android or Apple

REAC/TS Fact Sheet for Medical Providers (continued)

**Gastrointestinal (GI) syndrome:** May present with nausea, vomiting, diarrhea, bloody stool, and dehydration

GI bleed, bowel obstruction, acute renal failure, cardiovascular failure (8 - 14 days) may occur

**Treatment:** Antiemetics as indicated, enteral/parenteral nutrition, intensive care, consider bowel decontamination, stress ulcer prophylaxis

**Neurovascular syndrome:** Nausea and vomiting within 30 minutes, confusion and disorientation within minutes, severe hypotension, and fluid shifts, with possible cerebral edema, ataxia, seizures, coma

May be fatal within 24 – 48 hours

**Treatment:** Supportive and if resource adequate, intensive care

**Triage/Dose Estimation: TREAT LIFE THREATENING CONDITIONS FIRST!**

History and physical; time to vomiting; geographic location and time in area of blast; clinical prodrome from above; Complete Blood Count (CBC) with differential every 6-12 hours; and dicentric chromosome analysis (will take minimum 4 days)

**Biodosimetry Based on Acute Photon-Equivalent Exposures**

Dose [Gy]	Onset of vomiting		Lymphocyte count (x10 <sup>9</sup> /liter) by day*						Lymphocyte depletion rate Rate constant	Number of dicentrics	
	%	Time [hr]	0.5	1	2	4	6	8		Per 50 cells	Per 1000 cells
0	--	--	2.45	2.45	2.45	2.45	2.45	2.45	--	0.05 - 0.1	1 - 2
1	19		2.30	2.16	1.90	1.48	1.15	0.89	0.126	4	88
2	35	4.63	2.16	1.90	1.48	0.89	0.54	0.33	0.252	12	234
3	54	2.62	2.03	1.68	1.15	0.54	0.25	0.12	0.378	22	439
4	72	1.74	1.90	1.48	0.89	0.33	0.12	0.044	0.504	35	703
5	86	1.27	1.79	1.31	0.69	0.20	0.06	0.020	0.63	51	1024
6	94	0.99	1.68	1.15	0.54	0.12	0.03	0.006	0.756		
7	98	0.79	1.56	1.01	0.42	0.072	0.02	0.002	0.881		
8	99	0.66	1.48	0.89	0.33	0.044	0.006	<0.001	1.01		
9	100	0.56	1.39	0.79	0.25	0.030	0.003	<0.001	1.13		
10	100	0.48	1.31	0.70	0.20	0.020	0.001	<0.001	1.28		

\* The normal range for lymphocytes in human blood is between 1.4 and 3.5 x 10<sup>9</sup> per liter. Lymphocyte depletion rate is based on the model  $L_t = 2.45 \times 10^9 \text{ liter}^{-1} \times e^{-kt}$  where L equals the lymphocyte count (x10<sup>9</sup>/liter), 2.45 x 10<sup>9</sup>/liter equals the a constant representing the consensus mean lymphocyte count in the general population, k equals the lymphocyte depletion rate constant for a specific acute photon dose, and t equals the time after exposure (days)

Wasilenko JK et al. Ann Intern Med. 2004

**Cutaneous Radiation Injury/Syndrome:**

- Acute effects (days to weeks post exposure): Redness, swelling, blisters, ulceration, tissue necrosis
- Long-term issues (month to years post exposure): Fibrosis, atrophy (sclerosis), and telangiectasia formation

**Treatment:** Topical Class II/III steroids, antihistamines, antibiotics, and moisturizers (Aquaphor®), Pentoxifylline with α-tocopherol; growth factors; artificial skin/bioengineered constructs; debridement; and other surgical techniques

Dose [Gy]	Sign	Timing
3	Epilation	Begins around day 14 - 17
6	Erythema Distinguish from thermal burn	Minutes to weeks, depending on dose
10 - 15	Dry desquamation	2 - 3 weeks post-exposure, depending upon dose
15 - 20	Moist desquamation	2 - 3 weeks post-exposure, depending upon dose
25	Deep ulceration Radionecrosis	21 days

**Internal Contamination/Countermeasures:**

- Enters body through airways/ingestion/wound contamination and incorporation into body tissues
- Bioassay of Urine/Feces to assess internal contamination

**Treatment:**

**Potassium Iodide:** blocks I<sup>131</sup> (nuclear detonation/reactor failure)

- Treat before exposure or within 6-12 hours of exposure
- Maintain until no longer being exposed
- I<sup>131</sup> Risk greatest to children, infants, and young adults

**Prussian Blue (Radiogardase®):** for Cesium – drives excretion via feces – U.S. FDA approved

- Dose: adults/children: 3 grams orally, 3 times a day/1 gram orally, 3 times a day - assess via bioassay

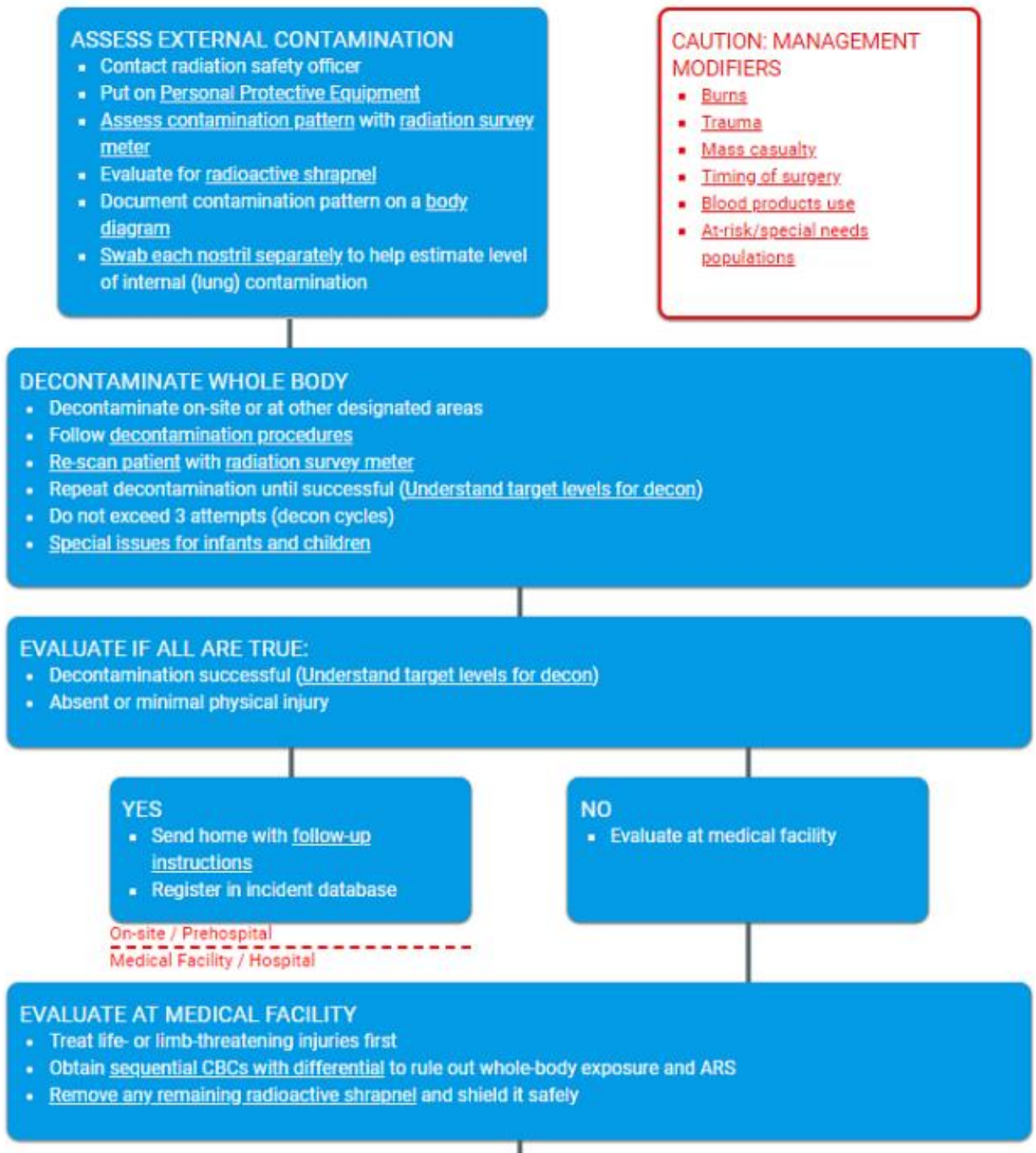
**DTPA:** U.S. FDA approved for Plutonium, Americium

- Every 24 hour Dosing
- Dose: Initially - 1 gm Ca-DTPA IV and then Zn form 1 gm IV until decision to cease by bioassay
- For inhalation intake use nebulizer (1:1 dilution with water/saline)

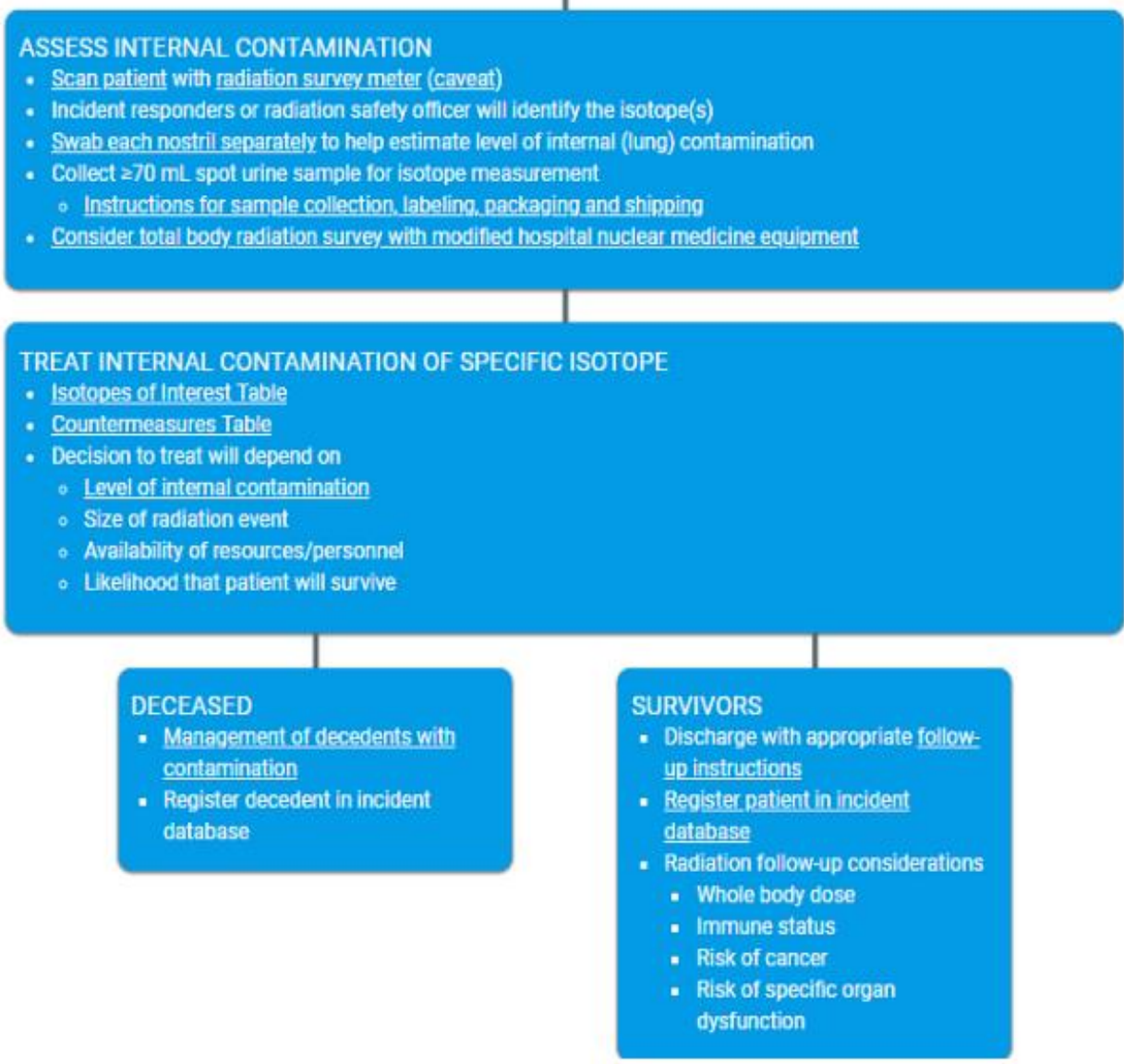
**U.S. FDA Potassium Iodide Guidelines**

Age Category	Predicted Absorbed Dose to the Thyroid cGy <sup>a</sup>	KI Dose (mg) <sup>b</sup>	Number of 130 mg Tablets
Adults 40 y	500	130	1
Adults 18-40 y	10	130	1
Pregnant or lactating women	5	130	1
Adolescents 12-18 y <sup>c</sup>	5	65	0.5
Children 3-12 y	5	65	0.5
1 month - 3 y	5	32	0.25
Birth - 1 month	5	16	0.125

Attachment 3 – REMM Radiation Contamination: Diagnose and Manage




REMM – Radiation Contamination: Diagnose and Manage (continued)



Attachment 4 – Decontamination for Yourself and Others


## DECONTAMINATION FOR YOURSELF AND OTHERS

### ① TAKE OFF OUTER LAYER OF CLOTHING




Taking off your outer layer of clothing can remove up to 90% of radioactive material.

Put the clothing in a plastic bag or other sealable container.



Put the bag in an out-of-the-way place, away from other people and pets.



Be very careful in removing your clothing to prevent radioactive dust from shaking loose.


### ② WASH YOURSELF OFF

**If you can take a shower:**

Use soap and shampoo. Do not use conditioner because it will cause radioactive material to stick to your hair.

Do not scald, scrub, or scratch your skin.

Keep cuts and scrapes covered when washing to keep from getting radioactive material in open wounds.




**If you cannot take a shower:**

Wash your hands, face, and parts of your body that were uncovered at a sink or faucet. Use soap and plenty of water.

**If you cannot use a sink or faucet:**

Use a moist wipe, clean wet cloth, or damp paper towel to wipe the parts of your body that were uncovered. Pay special attention to your hands and face.


Blow your nose and wipe your eyelids, eyelashes, and ears with a moist wipe, clean wet cloth, or damp paper towel.



### ③ PUT ON CLEAN CLOTHES


**If you have clean clothes:**

Clothes stored in a closet or drawer away from radioactive material are safe to wear.




**If you do not have clean clothes:**

Take off your outer layer of clothing, shake or brush off your clothes, and put your clothes back on.




Rewash your hands, face, and exposed skin at a sink or faucet.




### ④ HELP OTHERS AND PETS


Wear waterproof gloves and a dust mask if you can.

Keep cuts and scrapes covered when washing to keep radioactive material out of the wound.






Rewash your hands, face, and parts of your body that were uncovered at a sink or faucet.



STAY TUNED FOR UPDATED INFORMATION FROM PUBLIC HEALTH OFFICIALS.



U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

<http://emergency.cdc.gov/radiation>

Attachment 5 – Radiation Annex Training Syllabus for Regional Healthcare Coalitions Illinois Emergency Management Agency/Division of Nuclear Safety

**Radiation Annex Training Syllabus for**  
**Regional Health Care Coalitions**  
**Illinois Emergency Management Agency/Division of Nuclear**  
**Safety**

**I. Radiation Awareness (1 hour)**

This training consists of a review of radiation basics, causes of radiation exposure that are part of everyone's day to day lives, and demonstrable biological effects of high radiation exposures. The class introduces radiation detection instrumentation used by field personnel during IPRA responses and training exercises, as well as protective measures responders can take to ensure their exposures are "as low as reasonably achievable" (ALARA). Live sources of radiation are incorporated throughout the class, and if they choose attendees will have the opportunity to take measurements and confirm basic radiation physics concepts and characteristics.

**II. Understanding Radiological Threats in Your Region (1 hour)**

The course will summarize the types of radioactive materials located in and commonly used in the state of Illinois with a review of case history of actual incidents involving radioactive material. The course will create an informative and participative learning environment during the discussion about these incidents. Theft, malicious intent, and transportation accident case studies involving radioactive material will be discussed during this session. Students will participate in an interactive discussion about how they can recognize, detect, and protect themselves and their community from radiation and contamination.

**III. Radiological Response in the State of Illinois (1 hour)**

The course provides a broad overview on the basics of radiation response in Illinois. Discusses the basic components of a radiation response, a nuclear power station response, and responses that fall within the purview of Annex 24 of the Illinois Emergency Operations Plan.

**IV. Emergency Medical Services Response – MS-1 (2 hours)**

This training is geared toward first responders that would transport/treat patients that may be contaminated with radioactive materials. Training audiences include but are not limited to Ambulance/EMS, Emergency Room, Nuclear Medicine, Maintenance/Hospital Security, and any staff who may be involved with patient treatment. Topics covered include, contamination control, contamination vs. exposure, personal protective equipment, decontamination and personal surveys to determine contamination levels.

**V. Emergency Medical Services Exercise – MS-1**

Exercise levels can be scaled to suit the facility's training level and support objectives outlined by the facility. MS-1 exercises are designed to take utilize the principles learned in training apply them in a tabletop or functional environment. Patient(s) are transported, treated, monitored and decontaminated within the facility. Staff will deploy resources and equipment to support exercise efforts and test plans in place.

### 3.4 Acronyms

ARC	American Red Cross
ARS	Acute Radiation Syndrome
AAR	After Action Report
CBRNE	Chemical, Biological, Radiological, Nuclear, and Explosives
CDC	Centers for Disease Control and Prevention
DMAT	Disaster Medical Assistance Teams
ED	Emergency Department
EMS	Emergency Medical Services
FQHC	Federally Qualified Health Centers
HAZMAT	Hazardous Materials
HCC	Healthcare Coalition
HICS	Hospital Incident Command System
HPP	Hospital Preparedness Program
HVA	Hazard Vulnerability Assessment
IC	Incident Command
IDPH	Illinois Department of Public Health
IEMA-OHS	Illinois Emergency Management Agency and Office of Homeland Security
IND	Improvised Nuclear Device
IPC	Illinois Poison Center
ISP	Illinois State Police
JIC	Joint Information Center
LHD	Local Health Department
LTC	Long Term Care
MAC	Multi-Agency Coordination Group
MCI	Mass Casualty Incident
NIMS	National Incident Management System
PIO	Public Information Officer
PPE	Personal Protective Equipment
RDD	Radiological Dispersal Device
REAC	Radiological Emergency Assessment Center
RED	Radiological Exposure Device
RFMR	Request for Medical Resources
RHCC	Regional Hospital Coordinating Center
RITN	Radiation Injury Treatment Network
RRG	Radiological Response Group
RSO	Radiation Safety Officer
SEOC	State Emergency Operations Center
SPARC	Shawnee Preparedness and Response Coalition
SME	Subject Matter Expert
UC	Unified Command

### 3.5 Emergency Contacts

SPARC Member Facilities Radiation Safety Officers			
RSO Name	Hospital	Email	Telephone Number
Joe Rothfuss	Carle Richland Memorial	<a href="mailto:joe.rothfuss@westphysics.com">joe.rothfuss@westphysics.com</a>	W: (866) 275-9378 C: (770) 450-1854
	Clay County		
John R. Willis (Ryan)	Crossroads Community	<a href="mailto:john.willis@radpartners.com">john.willis@radpartners.com</a>	O: (618) 241-8776 C: (618) 214-0235
	Fairfield Memorial		
Chris Miller	Ferrell	<a href="mailto:cmiller@ferrellhospital.org">cmiller@ferrellhospital.org</a>	O: (618) 273-3361 Ext 1400 C: (618) 926-4790
Dr. Bean	Franklin	<a href="mailto:mcbean@caperadiology.com">mcbean@caperadiology.com</a>	C: (505) 570-9449
Kelly Wellen	Hamilton Memorial	<a href="mailto:kwellen@hmhospital.org">kwellen@hmhospital.org</a>	O: (618) 643-2361 Ext 2402 C: (618) 643-5840
Steve Meiners	Hardin County General	<a href="mailto:steve@tricord-inc.com">steve@tricord-inc.com</a>	O: (270) 443-4895 C: (270) 519-2413
Hisham Youssef, MD	Harrisburg Medical Center	<a href="mailto:sam.youssef@radpartners.com">sam.youssef@radpartners.com</a>	O: (618) 253-0222 C: (618) 841-8835
Randy Balmforth	Heartland Regional Medical Center	<a href="mailto:Randy.balmforth@radpartners.com">Randy.balmforth@radpartners.com</a>	O: (618) 998-7649 C: (618) 889-7671
Mike Bishop	Herrin	<a href="mailto:mike.bishop@sih.net">mike.bishop@sih.net</a>	C: (618) 967-3797
Mark L. Gates, MD	Marshall Browning	<a href="mailto:MLGates@CapeRadiology.com">MLGates@CapeRadiology.com</a>	O: (573) 334-6071 C: (573) 450-1754
Georgia Wallace	Massac Memorial	<a href="mailto:georgiak@massachealth.org">georgiak@massachealth.org</a>	O: 618-524-2176 C: (270)-556-1870
Mike Bishop	Memorial Hospital of Carbondale	<a href="mailto:mike.bishop@sih.net">mike.bishop@sih.net</a>	C: (618) 967-3797
Robin Biermann, MD	Pinckneyville Community	<a href="mailto:bthornton@pvillehosp.org">bthornton@pvillehosp.org</a> <a href="mailto:adlubala@pvillehosp.org">adlubala@pvillehosp.org</a>	(618) 792-1239
Bill Gooch	Salem Township	<a href="mailto:bgooch@micmos.com">bgooch@micmos.com</a>	O: (815) 970-3253 C: (618) 606-5016
Mike Bishop	St. Joseph Memorial	<a href="mailto:mike.bishop@sih.net">mike.bishop@sih.net</a>	C: (618) 967-3797
Wally Fuhrman	St. Mary's Good Samaritan	<a href="mailto:wally.fuhrman@ssmhealth.com">wally.fuhrman@ssmhealth.com</a>	(314) 989-2219
	St. Mary's		
Donna Throgmorton	Union County	<a href="mailto:donna.throgmorton@numedic.com">donna.throgmorton@numedic.com</a>	(618) 534-2154
Hisham Youssef, MD	Wabash General	<a href="mailto:htymd@yahoo.com">htymd@yahoo.com</a>	O: (800) 708-9591 C: (618) 841-8835
Brian Monsma	Washington County	<a href="mailto:bmonsma@washingtoncountyhospital.org">bmonsma@washingtoncountyhospital.org</a>	O: (618) 327-2000 C: (712) 251-2933
Federal Emergency Contacts			
Radiation Emergency Assistance Center/Training Site (REAC/TS), Oak Ridge, TN			
General Information		(865) 574-7607	
After-hours number		(865) 576-1005 (Ask for REAC/TS)	



Centers for Disease Control and Prevention (CDC), Atlanta, GA		
General Contact	(800) CDC-INFO	
Monday – Friday 8am – 8pm ET	(800) 232-4636	
Federal Bureau of Investigation (FBI)		
Headquarters, Washington, DC	(202) 324-3000	
<b>State Emergency Contacts</b>		
Illinois Poison Center, Chicago IL		
Helpline	(800) 222-1212	
Illinois Emergency Management Agency, Springfield, IL		
24-hour response	(217) 782-7860	
Illinois Department of Public Health		
Springfield Headquarters	(217) 782-4977	
Office of Preparedness and Response	(217) 558-0560	
Illinois State Police		
Headquarters, Springfield, IL	(217) 786-7107	
District 13, Du Quoin, IL	(618) 542-2171	
<b>Healthcare Contacts</b>		
Radiation Injury Treatment Network (RITN) Participating Hospitals in Illinois and Missouri		
University of Chicago, Chicago, IL	Pediatric/Adult	(773) 702-1994
Rush University Medical Center, Chicago, IL	Adult	(312) 942-3047
Northwestern Memorial Hospital, Chicago, IL	Adult	(312) 926-9651
Barnes-Jewish Hospital at WUSM, St. Louis, MO	Adult	(314) 454-8422
The Children’s Mercy Hospital, Kansas City, MO	Pediatric	(816) 302-6808

### 3.6 Radiation Emergency Tools and Quickguides

[Centers for Disease Control and Prevention](#) – The CDC provides technical assistance, training, and tools to help preparedness professionals and communities be ready for a radiological emergency.

[Radiation Injury Treatment Network](#) – The Radiation Injury Treatment Network<sup>SM</sup> (RITN) is a national network of medical centers with expertise in the management of bone marrow failure and works with partners from other medical specialists to assist with managing acute radiation syndrome and its health-related consequences.

[Radiation Emergency Medical Management](#) – REMM was produced by the US Department of Health and Human Services, Administration for Strategic Preparedness and Response. REMM provides guidance for health care providers, primarily physicians, about clinical diagnosis and treatment of radiation injury during radiological and nuclear emergencies.

[Radiation Emergency Response Training and Education](#) – List of online radiation courses and training opportunities offered by CDC, DOE, DHS/FEMA, etc.

Emergency Response Guidebook – The U.S Department of Transportation Pipeline and Hazardous Materials Safety Administration 2020 Emergency Response Guidebook (ERG) provides first responders with a go-to manual during the initial phase of a transportation incident involving hazardous materials/dangerous goods.

### 3.7 Resources/References

Coalition members and partner organizations may utilize the below additional resources for further guidance on radiation surge planning:

REAC/TS Fact Sheet for Medical Providers

<https://orise.orau.gov/resources/reacts/documents/factsheet.pdf>

REMM Isotopes of Interest: Properties, Treatment, and Fact Sheets

<https://remm.hhs.gov/isotopestable.pdf>

REMM Procedures for Radiation Decontamination

[https://remm.hhs.gov/ext\\_contamination.htm](https://remm.hhs.gov/ext_contamination.htm)

CDC How to Self-Decontaminate after a Radiation Emergency

[http://www.cdc.gov/nceh/radiation/emergencies/selfdecon\\_wash.htm](http://www.cdc.gov/nceh/radiation/emergencies/selfdecon_wash.htm)

Radiation Emergency Medical Management

[https://remm.hhs.gov/radiation\\_ppe.htm#emergencies](https://remm.hhs.gov/radiation_ppe.htm#emergencies)

REAC/TS Just-In-Time Training

<https://orise.orau.gov/resources/reacts/triage.html>