**Bluegrass Healthcare Coalition**

**Chemical, Biological, Nuclear, Radiological & Explosive (CBNRE) Emergency Surge Annex**

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**Approved**

**March 19th, 2024**

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# APPROVAL AND IMPLEMENTATION

The Bluegrass Healthcare Coalition Chemical Emergency Surge Annex was developed through coordination with local, state, and federal agencies in Fiscal Year 2023-2024 and is hereby approved for implementation. This plan may be amended by the Bluegrass Healthcare Coalition as outlined in the [Plan Development and Maintenance Section](#_heading=h.44sinio) of this plan.

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Tara Long, Coalition Chair

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Dave Carney, Readiness & Response Coordinator

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Darcy Maupin, Coalition Clinical Advisor

*Note: The original, signed version of this plan is maintained on file in the BGHCC Readiness and Response Coordinator (RRC) Office.*

# RECORD OF CHANGES

The Bluegrass Healthcare Coalition Readiness and Response Coordinator (RRC) will ensure any changes made to this plan outside the official cycle of plan review and update are documented and distributed using the Document Change Record (Table 1) as outlined in the [Plan Development and Maintenance Section](#_heading=h.44sinio) of this plan.

**Table 1 – Document Change Record**

| **Date** | **Page(s)** | **Revision Description(s) (Include Section/Paragraph)** | **Who Posted** |
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| 11/22/2024 |  | (reviewed) | Dave C |
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# OVERVIEW

Purpose

The purpose of this support plan is to supplement existing guidance with specific information regarding the management of patients during a chemical, biological, nuclear, radiological, or explosive emergency incident. The Bluegrass Healthcare Coalition (BGHCC) CBNRE Emergency Surge Annex identifies the roles and responsibilities of regional and local agencies and partnering organizations for providing regional and local-level support to a jurisdiction during the preparedness, response, and recovery phases for a CBNRE emergency incident.

The ESF #8 Primary and Support Agencies listed in this plan will also reference the BGHCC Preparedness and BGHCC Response Plans, and other relevant plans as listed in the Authorities and References section when preparing for, responding to, and recovering from a medical surge event (MSE).

Scope

The annex describes a coordinated healthcare response to a chemical, biological, nuclear, radiological, or explosive emergency, whether unintentional or intentional, in which the number and severity of exposed or possibly exposed patients challenges the capability of BGHCC member facilities. The annex will outline specific incident and response protocols necessary to properly plan for, manage, and care for patients during a CBRNE emergency.

This plan is a supplement and not a replacement for the response actions and resources described in the coalition, facility, or agency Emergency Operations Plan and provides additional details relevant to an incident that involves significant numbers of victims.

For the purpose of this plan and for the purpose of BGHCC planning and response, a medical surge event (MSE) is defined as:

*“An incident where an unusual event overwhelms local and/or regional healthcare system capacity to triage, stabilize, and/or transfer patients to a treatment facility and assistance will be requested from the* BGHCC*.”*

Maintenance

The BGHCC will conduct an annual review of this annex in coordination with the member agencies and organizations as appropriate. Additional reviews may be conducted after an exercise, a significant incident/event occurs, or regulatory changes indicate a need. The BGHCC RRC will track and distribute any needed changes to this plan using the Document Change Record in [Table 1](#_heading=h.2jxsxqh) when changes/updates are required outside the official cycle of plan review.

Document Control

The original, signed master copy of the BGHCC CBRNE Emergency Surge Annex will be maintained in the office of the BGHCC RRC. The BGHCC Response Plan and all associated annexes will also be made available to all appropriate agencies and BGHCC member organizations via electronic means.

Training and Exercises

The BGHCC and member agencies should provide training for membership to ensure they have the capability and capacity to meet the needs of a medical surge. The BGHCC RRC and BGHCC Clinical Advisor will ensure coalition membership and agencies are trained on this plan. The BGHCC RRC and BGHCC Clinical Advisor will encourage training at member facilities and agencies to ensure capability and capacity to meet the needs of this annex, and that staff are trained on this plan.

After-Action Reporting

The BGHCC RRC and member agencies will coordinate with Support Agencies to evaluate and document response and recovery activities through After-Action Reviews and After-Action Reports/Improvement Plans (AAR/IP) per the Department of Homeland Security’s Exercise and Evaluation Program (HSEEP) guidance. AAR/IPs will be written to document response and recovery activities within 120 days of the incident.

# Situation

Background

All jurisdictions in Kentucky are subject to CBRNE incidents that may result from a deliberate act or an unintentional release. The most common chemical incidents involve accidental hazardous materials releases from transportation or fixed industrial sources. Virtually any facility or industrial practice that houses or utilizes chemicals (including transportation of materials) may be vulnerable to a deliberate act or unintentional act that could release a hazardous chemical. The threat of an improvised chemical weapon release must also be considered as part of BGHCC planning, especially for those HCCs that have large public gatherings and special events such as the Kentucky Derby and college sporting events. The Bluegrass Healthcare Coalition operates with the Chemical Stockpile Emergency Preparedness Plan (CSEPP) of the Bluegrass Army Depot should follow those established plans.

The four diseases recognized, without order of importance or likelihood of use, by the Centers for Disease Control (CDC) are as follows: anthrax, botulism, plague, and smallpox. Additionally, tularemia, brucellosis, Q fever, viral hemorrhagic fevers, viral encephalitis, and disease associated with staphylococcal enterotoxin B agents have a potential for bioterrorism. Bioterrorism may occur as a covert event, defined as unknown exposure, or as an announced event. An announced event may be a hoax, where no true exposures to agents exist, but publicized to overwhelm the healthcare system and cause mass panic. An outbreak from a biological agent is suspected only upon recognition of unusual disease clusters or symptoms. Epidemiological features that potentially indicate bioterrorism incident include:

* A rapidly increasing disease incidence (e.g., within hours or days) in a normally healthy population
* An epidemic curve that rises and falls during a short period of time
* An unusual increase in the number of people seeking care, especially with fever, respiratory, or gastrointestinal complaints
* An endemic disease rapidly emerging at an uncharacteristic time or in an unusual pattern
* Lower attack rates among people who had been indoors, especially in areas with filtered air or closed ventilation systems, compared with people who had been outdoors
* Clusters of patients arriving from a single locale
* Large numbers of rapidly fatal cases
* Any patient presenting with a disease that is relatively uncommon and has bioterrorism potential.

The most common radiological incidents involve the loss, theft, or mismanagement of relatively small radioactive material sources, or technologically enhanced naturally occurring radioactive material (TENORM), where some exposure of individuals or dispersal into the environment occurs. Generally, greater regulatory control, safeguards, and security accompany larger quantities of radioactive materials, which pose a greater potential threat to human health and the environment. Virtually any facility or industrial practice (including transportation of materials) may be vulnerable to a deliberate act or unintentional act that could release radioactive material.

A radiological dispersal device (RDD) is any device used to spread radioactive material into the environment with malicious intent using conventional explosives. The harm caused by an RDD is principally contamination, and denial of use of the contaminated area, perhaps for many years. A radiological exposure device (RED) is any radiological source placed in a way to cause elevated radiological exposure to a person or to people. An Improvised Nuclear Device (IND) is an illicit nuclear weapon bought, stolen, or otherwise originating from a nuclear state, or a weapon fabricated from illegally obtained fissile nuclear weapons material that produces a nuclear explosion. The costs to the state associated with an effective RDD, RED, or IND could be significant. The potential of a terrorist attack using a nuclear weapon, or an IND is a grave concern to the security of the Commonwealth, as well as the nation.

Similarly, explosive threats may be intentional or unintentional and can involve hazardous or radiological contaminates as well. All jurisdictions within the Commonwealth are subject to explosion hazards and should plan for the medical and burn surge associated with such an event.

Threat Assessment\*

*\*The regional assessment discusses CBRNE threats however, a general statement on the radiological/nuclear threats to the Commonwealth is important for awareness.*

The Commonwealth of Kentucky is a Nuclear Regulatory Commission (NRC) agreement state with regulatory control of all Atomic Energy Act activities in Kentucky, except federal facilities and certain special nuclear material. Kentucky maintains state regulations at least as restrictive as federal regulations. The Kentucky Department for Public Health (KDPH) Radiation Health Branch (RHB) is responsible for licensing, registering, and certifying all uses of radiation. It also conducts inspections, collects, and analyzes environmental samples, reviews, and validates environmental surveillance data and manages compliance activities. Additionally, it is responsible for statewide emergency response to radiological incidents and emergencies and is equipped to respond to these events 24 hours per day.

Kentucky currently has no operating Nuclear Power Reactors, Fuel Cycle Facilities, Uranium Recovery Facilities, and no Research and Test Reactors. However, the United States Enrichment Corporation (USEC) enriched uranium for power plant use at the Gaseous Diffusion Uranium Enrichment Facility in Paducah, KY. The Enrichment Facility was leased from the U.S. Department of Energy and was regulated by the NRC from March 4, 1997, until 2013. USEC ceased uranium enrichment operations in 2013 and the Gaseous Diffusion Uranium Facility was handed back to the Department of Energy for deactivation, decontamination, and decommissioning. Kentucky serves as a major pass-through state for highly radioactive waste either by train or by truck and is a transportation corridor for radioactive shipments. There is potential for incidents which may cause a release of radioactive materials. This could happen any time and could require state and local agencies to implement this Plan.

The mode for which a hazmat incident may occur could include any of the following:

* + Motor Vehicle
  + Air Transportation
  + Rail Transportation
  + Industrial accident
  + Terrorism

Triggering Event

Local 911 Center(s) are likely to be the first notified of a potential CBRNE incident. The owner/operator of a facility and/or transportation agency of hazardous material may also be the first to become aware of an incident and may be obligated to notify state and local governments as well as the federal government depending on the material.

Notification of a CBRNE emergency will likely come from Kentucky’s 24-hour State Warning Point (SWP) (24-Hour Warning Point: 1-800-255-2587) which is managed by Kentucky Emergency Management (KYEM). Alternatively, KDPH staff may receive notification of an emergency from local emergency management, health departments, other governmental agencies, or members of the public.

**This list is not intended to serve as an exhaustive account of potential triggers**.

An incident in which chemicals / hazardous materials are involved and in which one of the following has occurred:

* An entity that utilizes chemicals / hazardous materials and reports an emergency that requires coordination of response activities.
* Unintentional or intentional release of a chemical / hazardous material in an adjacent state or area that may affect the Commonwealth.
* A transportation incident occurs that involves chemicals / hazardous materials that have the potential of affecting an area in the Commonwealth or an adjacent state that may affect the Commonwealth.
* Effects of a chemical release incident that may impact the public health or medical system of the Commonwealth or an adjacent state or area that may affect the Commonwealth.
* Receiving information from law enforcement or intelligence community of situations involving the actual or threatened use of a CBRNE device or materials.

The following triggers have been pre-identified for implementation of the Kentucky Radiological Incident Support Plan (KRISP) and this response plan annex. An incident in which nuclear/radiological materials are involved and in which one of the following has occurred:

* An entity that utilizes radiological materials and/or equipment and reports an issue that requires coordination of response activities.
* Non-planned nuclear release, reactor meltdown, or core breach in an adjacent state or area that may affect the Commonwealth.
* A transportation incident occurs that involves nuclear/radiological materials that have the potential of affecting an area in the Commonwealth or an adjacent state that may affect the Commonwealth.
* Effects of a nuclear/radiological incident that may impact the public health or medical system of the Commonwealth or an adjacent state or area that may affect the Commonwealth.
* Receiving information from law enforcement of situations involving the actual or threatened use of a radiological/nuclear material.

# CONCEPT OF OPERATIONS

General

Each of the agencies and organizations, hereafter referred to as agency or agencies, listed in this plan will prepare for CBRNE incident related operations that may include pediatric trauma, burn, and other severe injuries by maintaining the applicable equipment and supplies. The BGHCC will implement an active Plan, Organize, Equip, Train, and Exercise (POETE) cycle through coordination with the respective local, state, and federal agencies.

Activation and Authority to Initiate Actions

This plan and the coordinating structures and agencies named therein, maintain authority to initiate and coordinate actions to support an effective CBRNE response per the BGHCC Response Plan.

This annex to the BGHCC Response Plan will be activated when an CBRNE incident occurs that overwhelms the local response capability and/or may impact other healthcare entities within the region or state. Agencies assigned a lead role during a medical surge will activate upon notification and staff the appropriate ESFs at the Local EOC or in the BGHCC RRCC, as applicable. The EOC and BGHCC RRCC will be activated based upon incident complexity and requests for assistance.

The BGHCC RRC will activate the Regional Response Coordination Center (RRCC) to coordinate healthcare coalition operations in accordance with this plan and the BGHCC Response Plan. The RRCC location will be determined by the RRC based on situational awareness and consultation with local and state agencies. The primary identified RRCC for Bluegrass Healthcare Coalition will be determined in conjunction with local response. The BGHCC will operate under a defined Incident Command System (ICS). The RCC may report to the county EOC to establish the RRCC to assist with coordination of situational awareness, patient load balancing, BGHCC assets, BGHCC resources and other functions.

The incident command structure and the roll of the RRCC may expand or contract based upon incident complexity, duration, and activation levels. The plan can be activated prior to a declared or proclaimed emergency. In those cases, in which the plan is activated prior to a declaration or proclamation, the gathering of information, assessment of the situation, and notification of healthcare facilities and providers will be emphasized to provide a basis for the full implementation of the plan should an emergency be declared, and surge be required.

Alert and Notification

Refer to the Burn Surge Annex for all burns related to CBRNE incidents.

The BGHCC RRC will notify appropriate coalition membership based on activation levels and/or as described in BGHCC Response Plan.

* Local agencies will notify the BGHCC Readiness and Response Coordinator (RRC)
* Local Agencies will notify the state’s 24-Hour Warning Point at 800-255-2587 for any CBRNE incident requiring state assistance as outlined in the Kentucky EOP.
* State agencies notified by other means will immediately notify the state’s 24-Hour Warning Point;
* KYEM will notify appropriate federal and state agencies of CBRNE incident;
* KYEM will alert all agencies that have a lead ESF role within the state EOC and applicable Regional Response Area Managers;
* KDPH will notify applicable ESF #8 Primary and Support Agencies using established systems and processes as outlined in the ESF #8 – Public Health and Medical Services Annex;
* The BGHCC RRC will notify all coalition members and partners, as appropriate, following the BGHCC Response Plan alert and notification procedures. If the incident will affect other regions the RRC will notify HPP Manager with situational report and affected RRC’s immediately;
* The BGHCC RRC will notify other KDPH field staff, e.g. KDPH Regional Preparedness Coordinators to assist with coordination of effort and establishment of RRCC as needed;
* KDPH HPP Manager or their designated authority will assist with notifications of other RRC’s and adjoining states HPP Manager’s as necessary;
* KDPH HPP Manager or their designated authority will notify KDPH leadership and other stakeholders as appropriate.

**Logistics and Supplies**

Agencies including hospitals encountering a need for resources will first attempt to acquire the needed item(s) using their normal or emergency procurement methods. This can be done in collaboration with state, regional, and federal partners and in accordance with existing MOUs. The BGHCC may assist in acquiring scarce or specialized resources when necessary. The following process will be followed to ensure a locally driven response, with support as needed in a tiered approach.

Tiered Resource Request Process:

1. Healthcare Facility / System – when an unmet resource need exists, the facility will first utilize existing channels within its hospital system to acquire the needed item(s). If the system cannot meet the request, the local jurisdiction ESF #8 lead and/or regional BGHCC RRC should be notified.

2. Local ESF #8 / State ESF #8: Local ESF #8 or BGHCC RRC will initiate efforts to obtain the needed item(s) by contacting facilities in their jurisdiction. If unmet, the request is then sent to the State ESF #8. ESF #8 and/or RRC’s will make arrangements for any available resources to be sent to the requesting facility. Note that scarcity of resources may prompt prioritization recommendations to be established by local and state health officials, shared with hospitals through disaster communication channels.

3. If incident includes burn patients also refer to Burn Surge Annex.

In addition:

* + All resource requests will follow procedures outlined in local agency, regional BGHCC and state emergency operations plans and will follow appropriate ICS in-place for the CBRNE incident.
  + Requests for resources (personnel, equipment, and supplies) can be requested through mutual aid from local jurisdictions and/or from the BGHCC through the RRCC or through the SHOC or state’s EOC as outlined in Kentucky’s ESF #8 Resource Request Flowchart;
  + Resource requests and tracking will be managed throughout deployment and demobilization using WebEOC. Other systems or processes will be used if WebEOC is not functional;
  + The BGHCC RRCC will coordinate with KDPH to manage the requests and deployment of state and federal medical assets, to include Strategic National Stockpile (SNS) assets;
  + The KYEM ESF #8 desk or KDPH SHOC MOCC (if activated) with coordinate with KBEMS, BGHCC RRCC’s, local EMS agencies, aeromedical providers and medical transport agencies to coordinate the movement and operations of air and ground ambulance resources;
  + The BGHCC will coordinate with local EMA to provide support to the impacted jurisdiction for the request, deployment, and recovery of resources;
  + Recovery of resources will be addressed in demobilization plans as required.

Staffing

The BGHCC will work through local and regional resources to support staffing efforts. A CBRNE incident will more than likely create an extraordinary need for staffing at all levels. The BGHCC will work with the KDPH SHOC and the SEOC to request staffing support. KDPH will work with state and federal agencies, the Kentucky National Guard, the Medical Reserve Corps program, and others to deploy support staff to the area of need in an expedited manner.

Situational Awareness

The BGHCC will operate a defined incident command structure and coordinate public health and medical support through the KDPH SHOC and SEOC when applicable. Each agency listed in this plan shall continue to share information and maintain situational awareness of activities through communication and information sharing with the applicable agencies and personnel. Information will be collected and disseminated through meetings and/or the use of available communication systems and incident management software systems.Requests for resources (personnel, equipment, and supplies) can be requested through mutual aid from local jurisdictions and/or from the state through the SHOC or state’s EOC. Requests for resources (personnel, equipment, and supplies) can be requested through mutual aid from local jurisdictions and/or from the state through the SHOC or state’s EOC.

Safety and Control Measures

The on-scene incident commander and local jurisdictions maintain the ultimate control for safety and control measure in response to a CBRNE incident. When an intentional CBRNE incident is suspected, all staff should consider evidentiary concerns after attending to life safety of staff and personal protection of first responders. Each agency responding should follow their specific guidelines for maintaining chain of custody and accessing restricted areas or information. The BGHCC will consult the KDPH Radiation Health Branch to assist jurisdictions, when indicated and requested, to provide radiological monitoring, assessment, and protective action recommendations to reduce or avoid exposure to sources of radiation. Furthermore, numerous federal agencies may conduct radiological monitoring and assessment to determine the level and extent of contamination and may provide protective action recommendations from other federal agency responders such as DOE, NRC, EPA and CDC.

# Response

General

The BGHCC Radiological Emergency Surge Annex serves as the operational framework for coordinating coalition-level response and recovery activities for a medical surge within the BGHCC region through the following:

* The Regional Response Coordination Center (RRCC) will serve as the base of direction, control, and coordination of coalition level support, in coordination with the local jurisdiction’s EOC, when activated;
* Local governments are responsible under all applicable laws, executive orders, proclamations, rules, regulations, and ordinances for response within their respective jurisdiction(s);
* Upon activation in support of medical surge operations, the agencies and organizations identified within this plan will ensure the necessary personnel and resources are available to achieve the operational objectives;
* Personnel from supporting agencies will operate in accordance with the rules, regulations, and capabilities of their respective agency or organization;
* Patient transfer operations will be coordinated through KDPH’s SHOC MOCC in coordination with KBEMS and the state EOC, if activated and when feasible;

Important Contact Numbers(s)

**Kentucky Emergency Management 24-Hour Warning Point: 1-800-255-2587**

**KYEM Regional Area Manager – (502) 226-0153**

**Readiness and Response Coordinator(s) – (502) 905-9969 Dave Carney (502) 229-8962 JT Moore**

**Prompt incident recognition, system activation, and notification is vital.**

*Chemical HAZMAT Incident*: The imminent or actual release of a chemically harmful substance into the environment at levels that require urgent response to contain the release and protect humans and the environment.

*Chemical Mass Exposure Incident (MEI):* A chemical HAZMAT incident that produces multiple exposed victims. The event will be similar to but more complex than a Mass Casualty Incident as victims may be contaminated and represent a hazard to responders and others.

*Chemical Weapons of Mass Destruction (WMD) Incident:* A chemical MEI resulting from the deliberate release of chemicals intended to cause widespread harm. A chemical WMD incident may involve the release of a toxic industrial chemical or a chemical warfare agent.

Life safety and minimizing exposure through sheltering in place or evacuation is critical to CBRNE incidents. Refer to the Burn Surge Annex for all burn MCIs including those that may have been caused by potential chemical/radiological material exposure.

Triage and Screening

Initial triage of all patients will be accomplished per local protocols and procedures. First responder agencies and first receiver facilities should be experts in primary and secondary triage. Hospitals and healthcare facilities may experience a surge in patients from a CBRNE incident arriving at their facilities in privately owned vehicles or as walk-in arrivals. Once notification has been made that a CBRNE incident has occurred, all patients should be screened to determine the need for decontamination or additional PPE considerations for first responders. Critical to triage decisions is re-triage as the resource setting changes. A person triaged as expectant might change to immediate with the influx of resources and personnel. The BGHCC will support the coordination of resources for healthcare entities and share specialized treatment information with entities. Further triage information for nuclear/radiological incidents can be found at the [Radiation Treatment Injury Network.](https://ritn.net/triage/)

Patient Management and Transport

A significant limiting factor in a CBRNE incident response may be the availability of medical transport, air, and ground. EMS support and coordination is essential to the logistical goals of this effort. A regional approach to evacuation and transport planning is crucial. This planning should include inter-facility transports that may be of significant distances depending on available resources and weather that may limit air asset availability. The goal is to expedite safe, efficient, and appropriate transfer of all patients.

Medical evacuation is primarily a local responsibility. However, if casualties, patients, or residents require transport outside of the impacted jurisdiction, assistance should be requested through the BGHCC Coordination Center or county EOC to KDPH and KBEMS.

* KDPH and KBEMS will coordinate with KYEM (ESF #5 – Emergency Management) and Kentucky Transportation Cabinet (ESF #1- Transportation) to determine the methods and routes to transport patients to the nearest appropriate treatment facilities.
* KBEMS and KDPH will coordinate with local agencies when requested, for the transportation of evacuated inpatients to decompress facilities.

Patient Tracking

EMS, hospitals, and all other agencies involved in the movement of victims from a CBRNE incident will use a patient tracking system. This may include electronic, web-based, or paper-based patient tracking systems and processes. Regardless of the system used, all agencies involved must have the capability to account for all victims they have moved.

At the state level, KDPH has made the ReadyOp Patient Tracking available for all EMS agencies and hospitals to use at no cost. HCC’s, KDPH, KBEMS, and KYEM will access this system to monitor patient tracking activities during a CBRNE incident.

Family Reunification

The process of reuniting family members with those who went missing during a CBRNE incident is the responsibility of local emergency management and first responders. The use of patient tracking as described above is therefore crucial to family reunification and notification. EMS and hospitals may be asked to provide special assistance to law enforcement, mass care authorities, the Red Cross, or others to facilitate reunification. Hospitals can serve as a natural reunification site, since family members and friends are likely to check facilities for individuals who have gone missing. Setting up a reception site within or nearby the facility can be helpful in connecting patients with loved ones.

* Upon request from a local hospital or jurisdiction, the BGHCC will work with the local EMA to request activation of the jurisdiction’s Family Reunification Plan. The BGHCC will assist ESF #6 and/or the local chapter of the American Red Cross to support reunification services;
* The request for State, Federal and VOAD reunification partners/resources will be coordinated jointly through KCCRT, KDPH and KYEM in cooperation with the impacted jurisdictions.

Fatality Management

The presence of CBRN contamination complicates the fatality management efforts. No specific laws regulate the treatment of contaminated decedents, only best practices from within the mortuary response planning and radiation protection communities. Medical examiners, coroners, funeral directors, epidemiologists, and radiation protection professionals will have to devise working procedures that best match their capabilities. The BGHCC will work with local coroners and through the ESF #8 SHOC who will work through the Kentucky Coroner’s Association and the Kentucky Office of State Medical Examiner support fatally management operations. More information can be found [Guidelines for Handling Decedents Contaminated with Radioactive Materials](https://www.cdc.gov/nceh/radiation/emergencies/pdf/radiation-decedent-guidelines.pdf)

Surveillance and Population Monitoring

The KDPH Division of Epidemiology is the ESF #8 lead for population monitoring and surveillance after a biological or radiation incident. The BGHCC will support the coordination of population monitoring and assist KDPH, healthcare entities, local health departments and Federal partners in establishing a registry of potentially exposed individuals, performing dose reconstruction, and support long-term monitoring of this population for potential long-term health effects.

Behavioral Health

The Cabinet for Health and Family Services’ Department for Behavioral Health Developmental and Intellectual Disabilities (BHDID) is the ESF #8 lead for the provision and coordination of behavioral health services. The BGHCC will support KDPH, KCCRT and other behavioral health partners in supporting the coordination of behavioral health services to the affected area, healthcare workers, emergency responders, family members, and others suffering psychological trauma during and after a CBRNE incident.

Pediatric Considerations

A good planning figure is to assume that a minimum of 25% of victims from any mass casualty incident will be children. It is critical that healthcare facilities have the education and resources necessary to assess and treat pediatric patients. The BGHCC will be available to assist in coordinating support from pediatric, burn, or other specialty hospitals. Telemedicine support may be crucial for local hospitals to stabilize and begin treatment for pediatric patients. Where telemedicine is not available, image sharing, and provider-to-provider discussions can be used to assist in caring for a pediatric patient.

Deactivation and Recovery

The BGHCC RRCC will remain activated during the recovery phase as required, but not necessarily during the recovery of equipment and supplies as this may be ongoing for an extended period of time. KDPH and KYEM will coordinate with ESFs and other local and state agencies to determine when KDPH’s SHOC and the State EOC will be deactivated, as applicable. Available BGHCC and state-recovered assets will be reconstituted and returned to service during this period.

Website References

US Department of Homeland Security [National Strategy for Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) Standards.](https://www.dhs.gov/national-strategy-chemical-biological-radiological-nuclear-and-explosives-cbrne-standards)

Agency for Toxic Substances and Disease Registry (ATSDR) [Emergency Response](https://www.atsdr.cdc.gov/emergencyresponse/index.html) Resources. ATSDR Emergency Response Teams are available 24 hours a day, and are comprised of toxicologists, physicians, and other scientists available to assist during an emergency involving hazardous substances in the environment. (770) 488-7100

Strategic National Stockpile (SNS) <https://aspr.hhs.gov/SNS/Pages/default.aspx>

ATSDR [Chemical Exposures (ACE) Program](https://www.atsdr.cdc.gov/ace/about-ace.html)

HHS [Chemical Hazards Emergency Medical Management (CHEMM)](https://chemm.hhs.gov/)

OSHA [Best Practices for Hospital-Based First Receivers](https://www.osha.gov/sites/default/files/publications/osha3249.pdf) of victims for MCIs involving the release of hazardous substances.

# ROLES and RESPONSIBILITIES

The BGHCC has a wide range of agencies and facilities with differing levels of capability. The roles and responsibilities of each member listed is generalized and not all-inclusive. These roles and responsibilities will vary and change depending on the severity of a MCI event, individual agency ability and their individual emergency response plans.

Healthcare Coalition

Coalition Member Agencies

1. Provide necessary situational awareness communications to/from the affected and/or assisting health care facility(s) within the region and to/from the Healthcare Coalition Readiness and Response Coordinator;
2. Coordinates with healthcare facilities and supports the information and resource needs within the region;
3. Provide resources to augment needs that may arise;
4. Where applicable, provide access to subject matter experts (SMEs) to assist with BGHCC members with planning, response, and recovery.

Readiness and Response Coordinator (RRC)

1. Function as a liaison between KDPH, EMA, healthcare facilities, EMS providers and other BGHCC members within the region;
2. If appropriate and/or per response plans, report to designated incident command post or emergency operation center to coordinate and/or assist with ESF #8 operations functioning within the ICS;
3. Establish BGHCC Regional Response Coordination Center per BGHCC Response Plan;
4. Provide necessary situational awareness communications to/from the affected and/or assisting health care facility(s) within the region and to/from KDPH and other stakeholders;
5. Coordinate with healthcare facilities and BGHCC membership organizations and supports the information and resource needs within the region;
6. Assist in planning for alternate care sites with BGHCC region;
7. Assist and coordinate resources to augment needs that may arise.

Local Agencies

Local Health Department (LHD)

1. Maintains a system for 24/7 notification or activation of the local public health emergency response system;
2. Environmental response and monitoring per local plans;
3. Coordinate with State and Federal partners in establishing a registry of potentially exposed individuals, performing dose reconstruction, and conducting long-term monitoring of this population for potential long-term health effects;
4. Conducts epidemiological surveillance and provides guidance on methods to detect symptoms consistent with exposure to radioactive or biological materials;
5. Coordinates with CHFS’s Office of Public Affairs, local EM, healthcare and other appropriate agencies to vet, validate and refute (when necessary) news media or social-media based information;

Communications or 911 Dispatch Center

1. Answer 911 calls and provides communication support for hospitals, EMS, and other first responding agencies;
2. Monitor radio traffic and receive requests for emergency response personnel and transport vehicles;
3. Activate HAZMAT response and make appropriate notifications per emergency plans;
4. Dispatch and track emergency response personnel when a patient is transported to a designated hospital or a ground transfer point;
5. Maintain situational awareness and keep senior personnel informed of tactical operations.

EMS Agencies

1. Medical evacuation is primarily a local responsibility, if casualties require transport outside of the impacted jurisdiction, assistance should be requested through the BGHCC Coordination Center or county EOC to KDPH and KBEMS.
2. KDPH and KBEMS will coordinate with KYEM (ESF #5 – Emergency Management) and Kentucky Transportation Cabinet (ESF #1- Transportation) as needed to determine the methods and routes to transport patients to the nearest appropriate treatment facilities.
3. KBEMS and KDPH will coordinate with local agencies when requested, for the transportation of inpatients for evacuation or to decompress facilities.
4. Maintains ambulances, PPE, equipment, and supplies needed for transporting a person with severe injuries regardless of cause;
5. Maintain and conduct tracking of all patients during MCI from scene to hospital and for hospital transfers;
6. Maintain specific MCI strategies, plans, and protocols to care for a significant surge of patients that include CBRNE exposure, HAZMAT/radiological decontamination, pediatrics, burns or other specialty care;
7. Maintain specific MCI strategies, plans, and protocols for transport destinations and patient load balancing to include specialty care hospitals;
8. Maintain mutual aid agreements and establish regional approach to MCI planning;
9. Coordination with KBEMS to request assistance from EMS agencies outside of normal mutual aid agreements.

Hospitals

1. Upon notification of MCI, report bed availability and surge capacity to regional RRC and through the facility specific ReadyOp link or other established methods to facilitate patient load balancing per individual hospital EOP, MCI and BGHCC Response Plans;
2. Coordinate with BGHCC RRC to support the information and resource needs of healthcare facilities within coalition regions;
3. Prepare to decontaminate patients as needed and per individual EOPs;
4. Prepare to admit and treat patients exposed or contaminated and/or with burns or multi-system trauma. Factors including specialty/burn bed availability, specialty medication needs, and medical transport assets available;
5. Shelter in place orders, evacuation orders, or inclement weather may require that the initial receiving facility to hold patients awaiting transfer;
6. Prepare for a potential large influx of worried-well patients;
7. Obtain specialty consultation. Care of patients may be extremely resource intensive and this consultation should be obtained as soon as possible;
8. Maintain specific MCI strategies, plans, and protocols for creating capacity to care for a significant surge of patients that include pediatrics, burns or other specialty care;
9. Maintain specific plans and protocols for minimum patient documentation requirements for use during a surge incident and protocols for patient tracking;
10. Plan for and implement Crisis Standards of Care as needed referring to state-level plan;
11. Maintains the capability to address behavioral health needs for patients and staff;
12. Coordinates with other agencies for situational awareness to include bed availability for load balancing as applicable.

Local Emergency Management Agencies

* 1. Coordinates with affected agencies to receive and act on requests for assistance;
  2. Alerts and activates personnel for staffing of the county EOC based upon the complexity and duration of the MCI;
  3. Coordinate HAZMAT response and resources for possible decontamination of a large number of exposed victims;
  4. Coordinate sheltering in place and/or evacuation as needed;
  5. Maintains communications with local government officials and Kentucky Emergency Management regarding the status of response and recovery efforts;
  6. Supports ESF #8 – Public Health and Medical Services in coordinating public health and medical response and recovery activities;
  7. Coordinates with local and state healthcare agencies for the release of incident-related information through ESF #15 – Public Information and if activated, a Joint Information Center (JIC);
  8. Coordinate and assist LHD or other agencies in dissemination of risk messages in multiple formats and languages to address access and functional needs (AFN) and/or other specific community populations as needed;
  9. Coordinates with CHFS’s Office of Public Affairs, LHD, KYEM, healthcare and other appropriate agencies to vet, validate and refute (when necessary) news media or social-media based information.

Local Law Enforcement Agencies

1. Provides on-scene security and investigation during operations as needed;
2. Assist in identification, notification, protection, location, and reunification of children and their parents/legal guardians as needed;
3. Assist KSP and other applicable agencies in conducting missing persons investigations and ensuring effective coordination between investigative efforts and survivor and family assistance efforts;
4. Coordinate as needed with local coroner/medical examiner for communicating death notifications to families, as required;
5. Coordinate or support requested tasks such as law and order, crowd control, evidence collection, and casualty assistance;
6. Coordinate and assist KSP with security and traffic control during operations involving the movement of resources or medical evacuation.

County Coroner/Funeral Director

1. Maintains situational awareness with the hospital and the Coroners/Medical Examiner Incident Response Team when managing a deceased from time of death to final release;
2. Provides support to the hospital and Funeral Director in counseling family members on the disposition of deceased persons as needed.

State Agencies

[Kentucky Energy & Environment Cabinet Emergency Response Branch](https://eec.ky.gov/Environmental-Protection/Waste/Pages/EmergencyResponseBranch.aspx)

[Kentucky Department for Public Health (KDPH)](https://www.chfs.ky.gov/agencies/dph/Pages/default.aspx)

Emergency Preparedness and Response Branch

1. Maintains contact information of key incident management personnel in Kentucky’s ReadyOp System, as applicable;
2. Activate CHEMPACK as needed. See attachment 6
3. Maintains vehicles, trailers, PPE, equipment, and supplies needed for possible emergency response to assist healthcare facilities, EMS or local EM;
4. Serves as the lead agency for ESF #8 – Public Health and Medical Services and will activate the State Health Operation Center (SHOC) to support public health and medical-related operations;
5. Activates a Medical Operations Coordinating Cell (MOCC) to assist with patient transfers and/or patient movement as needed;
6. Provides epidemiological and laboratory support to local health departments, hospitals, and other healthcare agencies;
7. Coordinates requests for ESF #8 assistance through Mutual Aid, Emergency Management Assistance Compact (EMAC), and/or federal assistance.

Kentucky Office of Homeland Security

1. Monitoring threats and vulnerability assessments;
2. Suspicious activity intelligence gathering and analysis;
3. Classified information sharing with law-enforcement sources;
4. Terrorism awareness and other groups engaged in unlawful practices;
5. Preventive or mitigative guidance to both the public and private sectors against potential attacks.

Kentucky Board of Emergency Medical Services (KBEMS)

Coordinates the emergency notification of EMS agencies to organize the mobilization and deployment of inter/intra-state EMS ground and air assets and resources;

Kentucky Emergency Management (KYEM)

* 1. Supports ESF #8 in coordinating public health and medical preparedness, response and recovery activities with other ESFs and local, state, and federal agencies;
  2. Can request Kentucky National Guard’s 41st Civil Support Team to support response operations
  3. Maintains the 24/7 emergency contact information of key incident management personnel within KDPH and ESF #8 agencies;
  4. Provides support to local and state agencies for developing and releasing emergency public information and warnings through ESF #15 – Public Information and/or activation of a JIC;
  5. Coordinates requests for assistance through Mutual Aid, EMAC, and/or federal assistance when the capabilities of the state to respond to a disaster are exceeded;
  6. Provides administrative support to recovery efforts by assisting in the processing of documents authorizing payments to individuals, families, local governments, and state agencies;

Energy and Environment Cabinet (EEC):

Provides technical assistance and environmental information concerning hazardous material related waste and decontamination.

Federal Agencies

A CBRNE MCI may involve a federal response depending on the scope of the incident. A suspected intentional release or weapon use will involve a federal response. Please consult federal and state support plans in reference to the roles and responsibilities of federal agencies in a response.

References and Resources

National - Federal

* American Burn Association <https://ameriburn.org/>
* ASPR Tracie <https://asprtracie.hhs.gov/>
* National Response Framework, Third Edition, U.S. Department of Homeland Security, June 2016;
* 2017-2022 Health Care Preparedness and Response Capabilities, Office of the Assistant Secretary for Preparedness and Response;
* Public Health Emergency Preparedness and Response Capabilities – National Standards for State, Local, Tribal and Territorial Public Health, Centers for Disease Control and Prevention, October 2018;
* National Incident Management System, U.S. Department of Homeland Security. Updated guides and resources <https://www.fema.gov/nims-doctrine-supporting-guides-tools>
* Department of Homeland Security’s Exercise and Evaluation Program (HSEEP) Policy and Guidance <https://preptoolkit.fema.gov/web/hseep-resources>
* Department of Health and Human Services <https://www.hhs.gov/>
* Centers for Disease Control and Prevention (CDC) <https://www.cdc.gov/>
* Poison Control Center (800) 222-1222 <https://triage.webpoisoncontrol.org/#!/exclusions>

State

* [Kentucky Office of Homeland Security](https://homelandsecurity.ky.gov/Pages/default.aspx)
* Kentucky National Guard 41st Civil Support Team (must be requested through KYEM). They can provide assistance with hazard identification and release prediction modeling
* Kentucky Hospital Association
* Kentucky Emergency Operations Plan;
* Kentucky’s Emergency Support Function (ESF) #8 – Public Health and Medical Services Annex;
* KDPH State Health Operations Center Support Plan;
* Kentucky Strategic National Stockpile (SNS) Support Plan;
* Cabinet for Health and Family Services’ Emergency Communications Plan;
* Kentucky Strategic National Stockpile (SNS) Emergency Communication Guide and Pandemic Annex;
* Commonwealth of Kentucky Mass Fatality Incident Plan;
* Administrative Reference for Local Health Departments;
* Regional Healthcare Coalition (HCC) Emergency Response Plans.

Local

* County Emergency Operations Plans;
* Local Health Department Plans;
* Agency specific Emergency Operation Plans and Procedures.

# Attachment 1: Radiation References and Information

Special Reference Information

This section of the Plan contains useful information that can and should be referenced in response to a nuclear/radiological incident. The information, websites, and guidance documents in this portion of the Plan contain a wealth of information on radiation and radiation emergencies. It is intended to aid response personnel who may be involved in emergency response operations or impacted by radiation emergencies.

**Key Websites for Reference and Information:**

* [Radiation Emergency Assistance Center/Training Site (REAC/TS)](https://orise.orau.gov/reacts/index.html) (Oak Ridge Institute)
* [The Southern Mutual Radiation Assistance Plan](https://www.sseb.org/wp-content/uploads/2022/04/SMRAP_22_web.pdf)
* [CDC Radiation Emergency Resource Library](https://www.cdc.gov/nceh/radiation/emergencies/resourcelibrary/all.htm)
* [CDC Radiation Dictionary](https://www.cdc.gov/nceh/radiation/emergencies/glossary.htm)
* [Information for Clinicians](https://www.cdc.gov/nceh/radiation/emergencies/clinicians.htm?CDC_AA_refVal=https%3A%2F%2Femergency.cdc.gov%2Fradiation%2Fclinicians.asp)
* [Conference of Radiation Control Program Directors (CRCPD) Toolbox](https://www.crcpd.org/page/Toolbox_default)
* [Guidelines for Handling Decedents Contaminated with Radioactive Materials](https://www.cdc.gov/nceh/radiation/emergencies/pdf/radiation-decedent-guidelines.pdf)

**Key Guidance Documents from REMMS:**

The US Department of Health and Human Services (HHS) Radiation Emergency Medical Management (REMM) Team provides vital information to the health and medical community on issues related to planning for and responding to radiation mass casualty incidents. The hyperlinks listed below provide useful information in planning and responding to a nuclear and radiological incident. [HHS Radiation Emergency Medical Management (REMM) Homepage](https://remm.hhs.gov/index.html)

**Nuclear Detonation**

* [**A Decision Makers Guide: Medical Planning and Response for a Nuclear Detonation, 11/2017**](https://remm.hhs.gov/decisionmakersguide.htm)
* [Protecting Responders Following a Nuclear Detonation, 12/2016](https://remm.hhs.gov/ind_health_safety.htm)
* [Nuclear/Radiological Incident Annex, 10/2016](https://remm.hhs.gov/NRIA_intro.htm)
* [Improvised Nuclear Device Response and Recovery: Communicating in the Immediate Aftermath, 6/2013](https://www.fema.gov/sites/default/files/documents/fema_improvised-nuclear-device_communicating-aftermath_june-2013.pdf)
* [Planning Guidance for Response to a Nuclear Detonation, 2nd Ed, 6/2010](https://remm.hhs.gov/PlanningGuidanceNuclearDetonation.pdf)
* [Quick Reference Guide: Radiation Risk Information for Responders Following a Nuclear Detonation](https://www.dhs.gov/sites/default/files/publications/Quick%20Reference%20Guide%20Final.pdf)
* [Health and Safety Planning Guide for Planners, Safety Officers, and Supervisors for Protecting Responders Following a Nuclear Detonation](https://www.dhs.gov/sites/default/files/publications/IND%20Health%20Safety%20Planners%20Guide%20Final.pdf)
* [Responding to a Radiological or Nuclear Terrorism Incident: A Guide for Decision Makers](https://ncrponline.org/shop/reports/report-no-165-responding-to-a-radiological-or-nuclear-terrorism-incident-a-guide-for-decision-makers/)

**Radiological Incident**

* [**Radiological Dispersal Device (RDD) Response Guidance, Planning for the first 100 Minutes**](https://www.dhs.gov/sites/default/files/publications/NUSTL_RDD-ResponsePlanningGuidance-Public_171215-508.pdf)
* [PAG Manual: Protective Action Guides and Planning Guidance for Radiological Incidents, 1/2017](https://remm.hhs.gov/EPA_PAG_Manual_FINAL_01-26-2017.pdf)
* [Management of Persons Internally Contaminated with Radionuclides in a Nuclear or Radiological Emergency, A Manual for Medical Personnel, 2018](https://www-pub.iaea.org/books/IAEABooks/12230/Medical-Management-of-Persons-Internally-Contaminated-with-Radionuclides-in-a-Nuclear-or-Radiological-Emergency) (IAEA and partners)
* [Management of Persons Contaminated With Radionuclides: Handbook](https://ncrponline.org/shop/reports/report-no-161-i-management-of-persons-contaminated-with-radionuclides-handbook/)
* [Field Guide for Health and Safety Officers: Radiological Incidents, 6/2014](https://remm.hhs.gov/fieldguide.htm) (NYC DOHMH)
* [Population Monitoring and Radionuclide Decorporation Following a Radiological or Nuclear Incident](https://ncrponline.org/shop/reports/report-no-166-population-monitoring-and-radionuclide-decorporation-following-a-radiological-or-nuclear-incident/)

**Other Key Documents**

* [Guidance for Emergency Response Dosimetry](https://ncrponline.org/shop/reports/report-no-179-guidance-for-emergency-response-dosimetry-2017/)
* [Communicating During and After a Nuclear Power Plant Incident, 6/2013](https://www.fema.gov/sites/default/files/documents/fema_nuclear-power-plant-incident_communicating-during-after_june-2013.pdf)
* [A Guide to Operating Public Shelters in a Radiation Emergency, 2/2015](http://emergency.cdc.gov/radiation/pdf/operating-public-shelters.pdf)

**Key Guidance Documents from Environmental Protection Agency:**

* [Protective Actions](https://remm.hhs.gov/pag.htm#pa)
* [Protective Action Guides (PAGs)](https://remm.hhs.gov/pag.htm#pag)
* [Exposure Pathways and Protective Actions: Chart](https://remm.hhs.gov/pag.htm#chart)
* [Summary Table for PAGs, Guidelines, and Planning Guidance for Radiological Incidents by Phase of Incident](https://remm.hhs.gov/pag.htm#phase)
* [PAGS and Protective Actions for the Early Phase of a Radiological Incident](https://remm.hhs.gov/pag.htm#early)
* [EPA Emergency Worker Exposure Guidelines](https://remm.hhs.gov/pag.htm#worker)
* [Protective Action Guidance for Food and Drinking Water](https://remm.hhs.gov/pag.htm#food)
* [Generalized Protective Action Areas for Nuclear Power Plant Incident](https://remm.hhs.gov/pag.htm#npp)
* [Protective Action Guides for Exposure to Deposited Radioactivity during the "Intermediate Phase" of a Radiological Incident](https://remm.hhs.gov/pag.htm#intermediate)
* [Reentry Matrix Following a Radiation Incident or Accident by Phase of Incident](https://remm.hhs.gov/pag.htm#reentry)

**Other Agencies' Radiation Protection Recommendations**

* [Worker Protection Recommendations from Professional Societies](https://remm.hhs.gov/pag.htm#other)
* [Reference Values for Emergency Responder Radiation Safety](https://remm.hhs.gov/pag.htm#values)
* [Regulations for Worker Protection: US Government Agencies](https://remm.hhs.gov/pag.htm#osha)
* [Monitoring Radionuclides in Drinking Water and Food: Routinely and After a Release](https://remm.hhs.gov/radmonitor_water_food.htm)

Protective Action Guidance

The U.S. Environmental Protection Agency (EPA) has developed the [Protective Action Guides and Planning Guidance for Radiological Incidents Manual](https://www.epa.gov/sites/default/files/2017-01/documents/epa_pag_manual_final_revisions_01-11-2017_cover_disclaimer_8.pdf) to assist public officials in planning for emergency response to radiological incidents. This Manual provides radiological protection criteria for application to all incidents that would require consideration of protective actions. During an incident with an uncontrolled source of radiation, protection of the public from unnecessary exposure to radiation may require some form of intervention that will disrupt normal living. Such intervention is termed a protective action. Examples of protective actions include:

* Evacuating an area;
* Sheltering-in-place within a building or protective structure;
* Administering potassium iodide (KI) as a supplemental action;
* Relocation;
* Acquiring an alternate source of drinking water; and
* Interdiction of food/milk.

Protective actions may be recommended for a wide range of incidents, but generally apply to incidents involving relatively significant releases of radionuclides. Radiological incidents with potential for significant releases include:

* A fire in a major facility such as a nuclear fuel manufacturing plant;
* An accident at a federal nuclear weapons complex facility;
* An accident at a commercial nuclear power plant (NPP);
* A transportation accident involving radioactive material; and
* A terrorist act involving a radiological dispersal device (RDD) or yield-producing improvised nuclear device (IND).

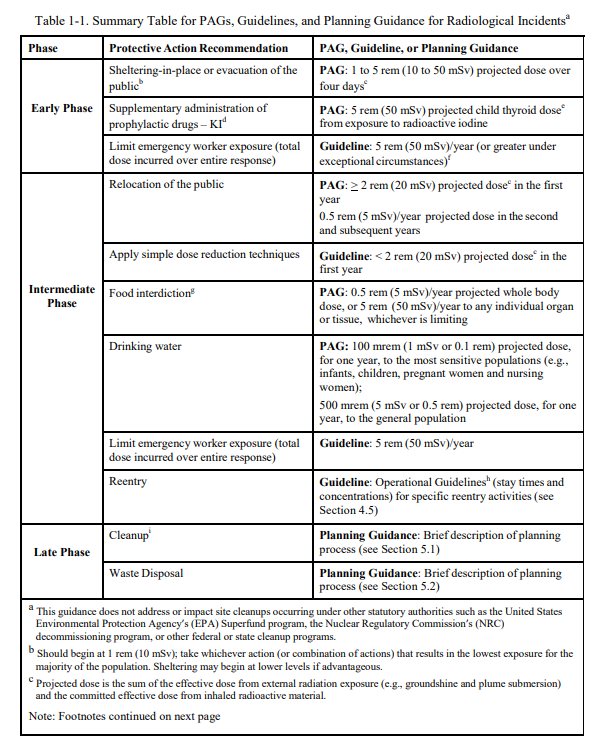
Each type of incident would pose a unique threat to public health and should be planned for and managed accordingly. Emergency response planning for a given facility or scenario should consider:

* The radionuclides involved;
* The dynamics of the release, including size and magnitude;
* The feasibility of specific protective actions; and
* The timing of notification, response, and protective action implementation.

The decision to advise members of the public to take a protective action during a radiological incident involves a complex judgment in which the radiological risk must be weighed against the action’s inherent risks. This decision may have to be made under emergency conditions, with limited information and little time to analyze options. Decision makers should consult the EPA’s [Protective Action Guides and Planning Guidance for Radiological Incidents Manual](https://www.epa.gov/sites/default/files/2017-01/documents/epa_pag_manual_final_revisions_01-11-2017_cover_disclaimer_8.pdf).

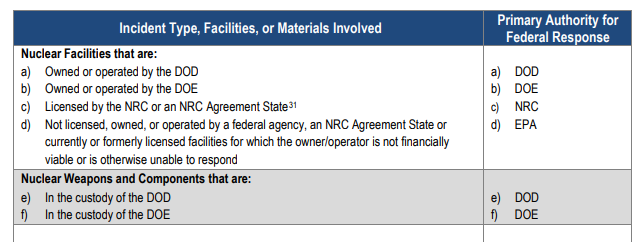
**Summary Table for PAGs, Guidelines, and Planning Guidance for Radiological Incidents**

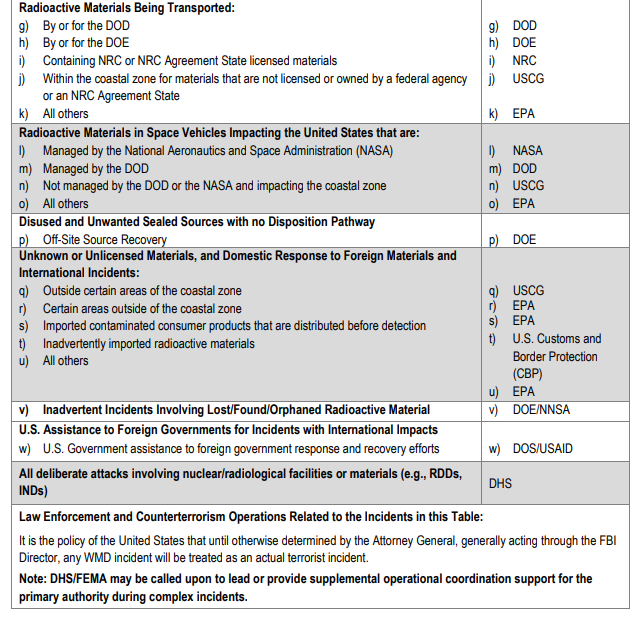
[2017 EPA Protective Action Guides and Planning Guidance for Radiological Incidents Manual](https://www.epa.gov/sites/default/files/2017-01/documents/epa_pag_manual_final_revisions_01-11-2017_cover_disclaimer_8.pdf)



**Federal Agencies with Primary Authority for Nuclear/Radiological Incident**

According to the [Nuclear/Radiological Incident Annex; Base Annex; Page 23 (October 2016)](https://www.fema.gov/media-library-data/1478636264406-cd6307630737c2e3b8f4e0352476c1e0/NRIA_FINAL_110216.pdf) the following table, adapted from the NRIA, shows different types of radiological incidents and the federal agency in charge of leading the federal response. Reference:





Federal Assets, Resources, and Teams for Nuclear/Radiological Incidents

The US Department of Homeland Security (DHS)’s [Nuclear/Radiological Incident Annex to Response and Recovery Federal Interagency Operational Plans- October 2016](https://www.fema.gov/sites/default/files/2020-07/fema_incident-annex_nuclear-radiological.pdf) provides an overview of the unique capability that various federal government agencies can provide in the event of nuclear/radiological incident. The table below is within the Annex and is provided below.

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| **Organization** | **Resource Name** | **Description** |
| DHS (CBP Laboratories and Scientific Services) | Weapons of Mass  Destruction Response Teams | Provides level "A" hazardous material technical response capabilities. |
| DHS (Domestic Nuclear Detection Office) | Joint Analysis Center:  Collaborative Information System (JACCIS) | Provides federal, state, and local stakeholders adjudication connectivity; a detector database; and status information regarding the events and activities relating to radiological/nuclear detection and nuclear forensics. In this capacity, JACCIS maintains awareness of the Global Nuclear Detection Architecture, which involves facilitating alarm adjudication and monitoring global efforts in radiological/nuclear detection. |
| DHS (Domestic Nuclear Detection Office) | Mobile Detection Deployment Units | Developed to surge nuclear/radiological resources during National  Special Security Events, Special Event Assessment Rating Level 14 events, and possible threat-driven surge operations based on Radiological Nuclear Search Operations as defined in the  Interagency Domestic Radiological Nuclear Search Plan. Provides radiological/nuclear detection equipment capability that allows end users to screen, search, and detect radiological/nuclear materials. |
| DHS (Federal Protective Service) | Hazardous Response Program | Includes initial investigations of suspicious or threatening chemical, biological, radiological, nuclear, and explosive (CBRNE) incidents; conduction of CBRNE threat assessments; confirmations of unauthorized presence of CBRNE agents and materials; and the conduct of emergency operations. The Hazardous Response Program also provides evacuation support during CBRNE incidents; CBRNE mutual aid response through agreement; and training assistance. The program is compliant with OSHA and National Fire Protection Association guidance and regulations. |
| DHS (FEMA) | Radiological Operations  Support Specialist Concept | Provides technical radiological/nuclear support to Incident Command at the state Emergency Operations Center level. |

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| **Organization** | | **Resource Name** | | **Description** | | |
| DHS (FEMA) | | RadResponder Network | | A free Cloud-based radiological/nuclear data collection; management; and analysis tool for local, state, federal, tribal, and territorial governments. Assists with radiological/nuclear incident characterization and situational assessment. Provides a common framework to rapidly and accurately collect, aggregate and share radiological monitoring and sampling data; manage specialized equipment and personnel; and track radiological response teams during an emergency. The RadResponder Network can be accessed on computers and smart phone/tablet devices. | | |
| DHS/FEMA, DOJ (FBI), DOD, HHS, EPA | | Domestic Emergency Support Team (DEST) | | A rapidly deployable, interagency team responsible for providing expert advice and support to the FBI Special Agent in Charge concerning the Federal Government's capabilities in resolving a terrorist threat or incident. | | |
| DHS/FEMA | | Interagency Modeling and Atmospheric Assessment Center (IMAAC) | | Provides a single point for the coordination and dissemination of federal atmospheric dispersion modeling and hazard prediction products that represent the federal position during actual or potential incidents involving hazardous material releases. Through plume modeling and analysis, IMAAC provides emergency responders and decision makers with predictions of hazards associated with atmospheric releases to aid in protecting the public and the environment. | | |
| DOC/NOAA | | Air Resources Laboratory (ARL) | | Focuses its dispersion research on the development and improvement of sophisticated dispersion models and other tools for air quality and emergency response applications. This includes volcanic eruptions, forest fires, nuclear accidents, and homeland security incidents. ARL also designs and evaluates high resolution observing networks, develops instrumentation, and conducts tracer field studies to improve the accuracy of atmospheric transport and dispersion predictions. | | |
| DOD | | CBRN Response  Enterprise: Command and  Control CBRN Response Elements (C2CREs) | | DOD’s two C2CREs are designed to be employed by  USNORTHCOM or USPACOM in support of a federal response to a CBRN incident and are designed to provide incident commanders with the following capabilities: urban search and rescue, mass casualty decontamination, and emergency medical triage and stabilization. Additionally, the C2CREs may be able to support mission assignments in the functional areas of logistics, transportation, and CBRN assessment. C2CREs can easily scale down for incidents that do not require all resident capability sets. | | |
| **Organization** | | **Resource Name** | | **Description** |
| DOD | | CBRN Response  Enterprise: Defense  CBRN Response Force (DCRF) | | DOD’s DCRF is designed to be employed by USNORTHCOM or USPACOM in support of a federal response of a CBRN incident. Joint Task Force – Civil Support is the designated headquarters of the DCRF. This DCRF is designed to provide incident commanders with the following capabilities: Urban search and rescue, mass decontamination, emergency medical triage and trauma care (including limited surgical and intensive care), limited patient holding, and patient movement via both ground and rotary-wing MEDEVAC/CASEVAC. Additionally, the DCRF may be able to support mission assignments in the functional areas of logistics, ground/air transportation, site assessment, road clearing, and horizontal engineering. A health physicist from Air Force Radiological Assistance Team or another DOD organization will likely serve as an interface to the FRMAC and Advisory-Team (ATeam). The DCRF can easily scale down for incidents that do not require all resident capability sets. Furthermore, if additional assets are needed, DOD can request forces that are available and appropriate to support Lead Federal Agency requests for capabilities. |
| DOD | | CBRN Response  Enterprise: National Guard Teams | | The CBRN Response Enterprise includes DOD teams designed to be employed as governor-controlled state capabilities. These teams consist of the following:  –Weapons of Mass Destruction Civil Support Teams (WMD-CSTs) – WMD-CSTs assess suspected WMD attacks or potential CBRN incidents, advise civilian responders on appropriate actions, provide expert medical and technical advice, and facilitate the arrival of additional State and Federal military forces.  –CBRN Enhanced Response Force Packages (CERFPs) – CERFPs employ search and extraction, casualty decontamination, Fatality Search and Recovery Team (FSRT), and emergency medical triage and treatment capabilities to maximize the lifesaving response to a WMD attack or other CBRN incident.  –Homeland Response Forces (HRFs) – HRFs contain the same core lifesaving capabilities as a CERFP (search and extraction, casualty decontamination, FSRT, and emergency medical triage and treatment) plus a casualty assistance support element (CASE). |

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| **Organization** | **Resource Name** | **Description** |
| DOD/Armed Forces  Radiobiology Research Institute (AFRRI) | Medical Radio-Biology Advisory Team | Provides health physics, medical, and radiobiological advice to military and civilian command and control operations worldwide in response to nuclear and radiological incidents requiring a coordinated federal response. Through “reach back,” the deployed team of radiation medicine physicians and senior health physicists can call on the knowledge and skills of radiobiologists, biodosimetrists, and other research professionals at AFRRI as well as those of other DOD response teams. |
| DOD (Defense Threat Reduction Agency) | CBRN Military Advisory Team (CMAT) | Provides a technical and scientific subject-matter-experts (SMEs), planners, and hazard prediction modeling support team to Federal Coordinating Agencies or their delegated representatives in response to catastrophic incidents involving WMD. The CMAT is a cadre of WMD response advisors, planners, and modelers that may include but are not limited to public affairs, legal advisors, radiation health physicists, and/or radiation physicians. |
| DOE (NNSA) | Aerial Measuring System (AMS) | Provides rapid assessment of radioactive contamination on the ground over large areas using highly sensitive detection systems mounted on fixed-wing aircraft and helicopters. AMS reach back provides external aerial assets the ability to collect data utilizing their own assets and have it analyzed via consistent and proven methods for interpretation. |
| DOE (NNSA) | Consequence Management Home Team | Provides ongoing analytical support to all NNSA consequence management assets once they are established at the incident location and to the federal, state, and local authorities supporting the event. Also provides analysis and interpretation of the initial release based on early data, map products, coordinates laboratory assets, and coordinates and provides situational awareness of NA42 response teams en route to incident. |
| DOE (NNSA) | Consequence  Management Response Team | Provides DOE/NNSA resources to establish and manage the FRMAC, including radiological monitoring teams, reach back capability, and infrastructure. |
| DOE (NNSA), EPA, Others | Federal Radiological Monitoring and  Assessment Center | Coordinates federal radiological monitoring and assessment activities with those of state and local agencies. |

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| **Organization** | **Resource Name** | **Description** |
| DOE (NNSA) | NARAC | Provides tools and services to the Federal Government that map the probable spread of hazardous material accidentally or intentionally released into the atmosphere. Also provides atmospheric plume predictions in time for an emergency manager to decide if taking protective action is necessary to protect the health and safety of people in affected areas. |
| DOE (NNSA) | Nuclear Radiological Advisory Team | Provides an emergency response capability for on-scene scientific and technical advice for both domestic and international nuclear or radiological incidents. It is led by a Senior Energy Official who runs the NNSA field operation and who coordinates NNSA follow-on assets as needed. |
| DOE (NNSA) | Nuclear Weapons Accident Response Group | Provides technical guidance and responds to U.S. nuclear weapons accidents. The team assists in assessing weapons damage and risk, and in developing and implementing procedures for safe weapon recovery, packaging, transportation, and disposal. |
| DOE (NNSA) | Radiological Assistance Program | First responder program for assessing and characterizing radiological hazards from nine regional offices at DOE sites throughout the United States. Each region has a minimum of three teams with a standard composition of eight personnel. Teams can be augmented with other specialists and will be tailored to the specific mission. The team conducts field monitoring and sampling measurements and provides radiological advice to protect the health and safety of responders and the public. |
| DOE (NNSA) | Radiation Emergency  Assistance  Center/Training Site  (REAC/TS) | Treatment, evaluation, and medical consultation for injuries resulting from radiation exposure. Focused on home team to provide reach back capability but includes a small deployable contingent. When Stafford Act is declared, REAC/TS will be doing their work in coordination with ESF #8. |
| DOJ (FBI) | Evidence Response Team Unit (ERTU): Hazardous  Evidence Response Team (HERT) | Provides training, leadership, and subject matter expertise in hazardous evidence collection, as well as in the management and processing of forensic evidence in CBRN crime scenes. ERTU also provides coordination and oversight for operational response and activities of FBI field office HERTs. |
| DOJ (FBI) | FBI WMD Coordinator | The FBI has a WMD Coordinator assigned to each of its field offices. WMD Coordinators are responsible for managing the office's WMD program and serve as the point of contact for emergency responders and public health at the state and local level in the event of a threat or incident potentially involving a WMD. In the event of such an incident, the WMD Coordinator serves as a conduit for obtaining federal assistance for operational response direction and threat evaluation support. |

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| **Organization** | **Resource Name** | **Description** |
| DOJ (FBI) | Weapons of Mass  Destruction Strategic Group | FBI-led interagency coordination mechanism to address the U.S. Government response to a terrorism incident involving radiological or nuclear threats to include the identification and deployment of specialized interagency elements used to support the Radiological Nuclear Search Operations in locating, identifying, and interdicting the threat. |
| EPA | Airborne Spectral  Photometric  Environmental Collection  Technology (ASPECT) | The ASPECT aircraft is managed by EPA's CBRN Consequence Management Advisory Team and provides remotely sensed chemical/radiological (gamma and neutron) data and imagery (situational awareness). It can identify, quantify, and map chemical plumes and ground-based radiation. It is also capable of collecting high-resolution digital photography and video products. Data products are transferred to ground base support within minutes of collection through satellite communications, while in flight. |
| EPA | CBRN Consequence  Management Advisory Team (CMAT) | Provides scientific and technical support for all phases of environmental response to a CBRN incident, including health and safety site characterization, environmental sampling and analysis, environmental monitoring, risk assessment building and structure decontamination, waste treatment environmental cleanup, and clearance; manages the EPA's ASPECT fixed-wing aircraft, which provides chemical/radiological data; deploys and operates groundbased characterization and mapping capability for radiological incidents (CMAT Asphalt). |
| EPA, Integrated  Consortium of Laboratory Networks (ICLN) | Environmental Response Laboratory Network | Provides capability to perform routine and emergency radio analysis of environmental samples. |
| EPA | Environmental Response Team | Provides scientific and technical expertise, including health and safety, environmental sampling, air monitoring, toxicology, risk assessment, waste treatment, contaminated water/scientific divers; and site decontamination and remediation; provides field-analytical and real-time air monitoring with the EPA mobile laboratories known as Trace Atmospheric Gas Analyzers. |
| EPA | National Criminal  Enforcement Response Team | Provides technical, safety, hazardous evidence collection, and other forensic support to law enforcement in the event of a weapon of mass destruction terrorist attack or environmental catastrophe. |

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| **Organization** | **Resource Name** | **Description** |
| EPA, DOE, DOD, DHS (USCG) | On-Scene Coordinators for oil and hazardous  materials consequence management | On-Scene Coordinators coordinate the on-scene tactical response to oil and hazardous materials incidents. Actions include assessment of the extent and nature of environmental contamination; assessment of environmental cleanup options; and implementation of environmental remediation, including decontaminating buildings and structures and management of wastes. For nuclear/radiological incidents, USCG provides the federal On-Scene Coordinator for incidents in certain areas of the coastal zone, and EPA provides the federal On-Scene Coordinator for incidents in the inland zone and in other areas of the coastal zone. |
| EPA, DHS (USCG) | National Strike Force Strike Teams | The National Strike Force (NSF) provides highly trained, experienced personnel and specialized equipment to Coast Guard and other federal agencies to facilitate preparedness for and response to oil and hazardous substance pollution incidents in order to protect public health and the environment. |
| EPA | Radiation Task Force Leaders (RTFLs) | A sampling and monitoring force multiplier comprised of EPA Response Support Corps members based throughout EPA’s Regions and Labs. The RTFLs are specially trained EPA personnel who will lead small teams of personnel in performance of tasks including field radiological measurements, contamination monitoring, soil sampling, air sampling, decontamination line setup and support, radiological control area support, and dose management support. |
| EPA | RadNet | Monitors the nation's air, precipitation, and drinking water to track radiation in the environment. RadNet sample testing and monitoring results show the fluctuations in normal background levels of environmental radiation. The RadNet system will also detect higher than normal radiation levels during a radiological incident. During a radiological incident, officials use RadNet data to help make science-based decisions about protecting the public. Scientists use RadNet air monitoring data to help estimate the potential radiation dose to people. |
| EPA | Radiological Emergency Response Team | Provides advice on protective measures to ensure public health and safety; assessments of dose and impact of release to public health and the environment; monitoring, sampling, laboratory analyses, and data assessments to assess and characterize environmental impact; and technical advice and assistance for containment, cleanup, restoration, and recovery. |

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| **Organization** | **Resource Name** | **Description** |
| EPA | Radiological  Environmental  Assessment Equipment | Sample preparation trailers and mobile laboratories carry electrical generators and supplies for approximately one week; not applicable for other assets |
| HHS | Radiation Emergency  Medical Management (REMM) | Provides guidance for health care providers and primarily physicians about clinical diagnosis and treatment of radiation injury during radiological and nuclear emergencies; provides just-in-time, evidence-based, usable information with sufficient background and context to make complex issues understandable to those without formal radiation medicine expertise; provides web-based information that is also downloadable in advance so that it would be available during an emergency if the internet is not accessible. |
| HHS (Assistant Secretary for Preparedness and Response) | Radiation Injury Treatment Network (RITN) | A memorandum of understanding exists between the HHS/Assistant Secretary for Preparedness and Response and the National Marrow Donor Program on behalf of the RITN to utilize expertise available at bone marrow transplant and cancer centers for the treatment of victims of radiation exposure. |
| HHS (CDC/Agency for  Toxic Substances and Disease Registry) | Rapid Response Registry Team | Enrollment forms give local and state entities a tool to register responders and other persons exposed to chemical, biological, or nuclear agents from a disaster. The enrollment form is a two-page form that can be distributed on paper or electronically. It can be implemented quickly to collect information rapidly to identify and locate victims and people displaced or affected by a disaster. |
| HHS (CDC) | Strategic National  Stockpile Agents for  Nuclear/Radiological Incidents | National repository of antibiotics, chemical antidotes, antitoxins, life support medications, IV administration, airway maintenance supplies, and medical/surgical items. Nuclear/radiological-specific resources include chelating agents (Calcium and Zinc Diethylentriamene pentaacetate), Prussian Blue, and Growth Factors/Cytokines for White Blood Cells. |
| HHS (CDC/NIOSH) | Emergency Responder  Health Monitoring and  Surveillance (ERHMS) guidance and tools | The ERHMS system is a health-monitoring and surveillance framework that includes recommendations and tools specific to protect emergency responders during all phases of a response, including pre-deployment, deployment, and post-deployment phases. The intent of ERHMS is to identify exposures and/or signs and symptoms early in the course of an emergency response, prevent or mitigate adverse physical and psychological outcomes, ensure workers maintain their ability to respond effectively and are not harmed during response work, evaluate protective measures, and identify responders for medical referral and possible enrollment in a long-term health surveillance program. |
| **Organization** | **Resource Name** | **Description** |
| HHS Assistant Secretary for Preparedness and  Response (ASPR) | Disaster Mortuary  Operational Response  Team (DMORT)-WMD | A DMORT is equipped for processing of human remains that have been contaminated with hazardous chemicals, radiation, or biological agents. The team can be deployed in response to a weapon of mass destruction incident. Team composition is similar to a standard DMORT except for the addition of hazardous materials/weapons of mass destruction mitigation capability for remains. Unlike standard DMORTs, the DMORT-WMD maintains a specialized equipment cache and a number of support vehicles. |
| HHS (ASPR) | Tactical Medicine Resources | HHS’s Office of Emergency Management’s Tactical Programs Division, Tactical Medicine Branch has the capability to provide direct operational medical support (Low Signature/Footprint Medical Capability, High Threat/Risk Medical Response), as well as Tactical Medical Education, Law Enforcement (LE) Medical Direction, LE  Liaison/Force Protection Coordination, and Medical Consultation. |
| HHS (ASPR) | CBRNE Advisory Resource Teams | Produce immediate response informational and guidance products for distribution; can provide decision support, and deploy subject matter experts or liaisons to regional incident operations centers to provide front-line CBRNE medical and public health information and decision support and reach-back to additional SME’s. |
| NRC | Protective Measures Team (PMT) | Advises the NRC Operations Center on the potential consequences of an event, the status of protective actions underway, and any conditions that might impede necessary protective actions. The PMT consists of health physicists, engineers, response specialists, and communicators from throughout the NRC. There are PMTs for reactor incidents, fuel facility incidents, and nuclear materials and transportation incidents to implement NRC response as necessary. |
| NRC | Reactor Safety Team  (RST) or  Fuel Cycle Safety Team (FCST) | Performs an independent assessment of facility conditions to provide the NRC Operations Center with a clear understanding of the significance of the event and the possible sequence of future events. Advises on any facility condition that could affect public health and safety or threaten the environment. These teams consist of specialists and engineers with a wide range of technical expertise, communications skills, and ability to perform complex tasks. To support reactor assessments, the RST utilizes the Emergency Response Data System to display real-time plant parameters. Both teams communicate with licensee communicators, resident inspectors, and with NRC regional counterparts. |
| **Organization** | **Resource Name** | **Description** |
| NRC | Site Team | Implements the NRC on-scene primary authority role. Serves as the NRC's eyes and ears on site allowing a firsthand assessment of the situation and face-to-face communications with all responding organizations. Acts as the coordinating agency representative for significant incidents at NRC-regulated facilities. |
| U.S. Department of Veteran’s Affairs | Medical Emergency  Radiological Response Team (MERRT) | The MERRT responds to radiological disasters that require medical assistance and/or radiological decontamination of victims. The MERRT provides medical assistance including direct patient treatment, assisting and training local health care providers in managing, handling, and treatment of radiation-exposed and contaminated casualties; assesses the impact on human health; and provides consultation and technical advice to local, state, and federal authorities. When Stafford Act is declared, MERRT will be doing their work in coordination with ESF #8. |
| EPA, USCG, DOJ, DOE,  DOL/OSHA, USDA, DOS,  DOD, NOAA, DOT,  FEMA, HHS, GSA, DOI, and the NRC | National Response Team (NRT) | The U.S. NRT is an organization of 15 federal departments and agencies responsible for coordinating emergency preparedness and response to oil and hazardous substance pollution incidents. The NRT provides technical assistance; resources; and coordination on preparedness, planning, response, and recovery activities for emergencies involving hazardous substances, pollutants and contaminants, hazardous materials, oil, WMD destruction in natural and technological disasters, and other environmental nationally significant incidents. The EPA and the USCG serve as chair and vice chair respectively. The National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR part 300 outline the role of the NRT and Regional Response Teams. |
| World Health Organization | Biodosimetry Network (BioDoseNet) | Global network of biodosimetry laboratories whose role is to support management and decision making in cases of large radiation emergency events where the capability of individual laboratory is likely to be overwhelmed. In preparedness for such events, the BioDoseNet focuses on harmonization of methodology, quality assurance, knowledge sharing, and intercomparison exercises. |

# Attachment 2: Biological Refreneces and Information

Websites on Bioterrorism Readiness

[**https://www.fda.gov/drugs/emergency-preparedness-drugs/bioterrorism-and-drug-preparedness**](https://www.fda.gov/drugs/emergency-preparedness-drugs/bioterrorism-and-drug-preparedness)

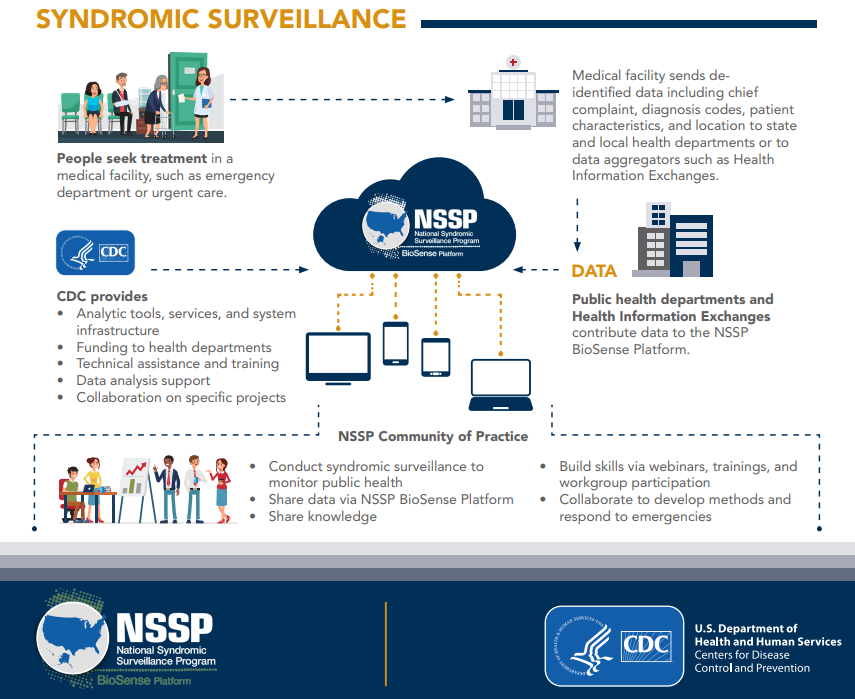
<https://apic.org/>

<https://emergency.cdc.gov/bioterrorism/>

<https://emergency.cdc.gov/agent/agentlist.asp>

<https://www.cdc.gov/botulism/bioterrorism/index.html>

<https://www.cdc.gov/ncezid/dsr/>



# Attachment 3: Evacuation/sheltering

Overview

An evacuation is defined as an organized, phased, and supervised movement of people away from a dangerous or potentially dangerous area due to an emergency or other major event (NCHRP Report 740). Each facility should have an evacuation and sheltering-in-place plan. It is also recommended to share these plans within the coalition since an evacuation of one facility will likely involve other coalition members. Evacuation can be horizontal, out of the affected area, or vertical, higher ground. It is important to communicate to individuals who is authorized to order an evacuation or sheltering, how they will be alerted, and what actions they should/should not take. Evacuations and sheltering should be trained and exercised regularly.

**Evacuation is considered when:**

* The threat or hazard poses a significant threat that meets pre-established level of concern to life/health
* Mitigation of the threat/hazard is insufficient to reduce the risk
* No other protective action is applicable
* There is time/capacity for a safe evacuation

Evacuation

The following are potential modes to consider depending on what is available to your facility/area:

Pedestrian, Road (local and highways), Rail, River/Marine, and Air (helicopter and fixed wing). Plans should consider personal, public, private, and commercial options. It should also include specialty providers such as paratransit, medical transport, and military for example. Ride share programs can be an asset to assist by sending out mass messages to their drivers as well as the ability to create geofence for drivers to avoid restricted access areas.

Other important things to consider include:

* Digital message boards, traffic signal control/signage, fuel/food/water/bathrooms along route if needed, and notifying airports to avoid a plume
* Clearance Time = Number of people to evacuate/evacuation rate (measured in hours)

*Example: 100 people/{2 doors\*((1.0person/second)/door)} = 50 seconds*

* *Reentry considerations should address safety/security, infrastructure, legal, public services*

Sheltering

Sheltering-in-place should include locking doors, closing windows/air vents, turning off fans/air conditioning/forced air heating systems and going into the most interior room with fewest windows. Windows, doors, and vents should be sealed with plastic and duct tape. In a radiological/nuclear event, go to the lowest floor like a basement or in a high-rise building go to the middle floor of the building. Radiation fall-out collects on roofs and walls so increasing the space between provides additional protection. Be sure to include emergency supplies and ways to get information such as radios.

**Sheltering Resources:**

[*https://www.fema.gov/emergency-managers/national-preparedness/plan/evacuation-shelter-in-place*](https://www.fema.gov/emergency-managers/national-preparedness/plan/evacuation-shelter-in-place)

[*https://www.emergency.cdc.gov/shelterinplace.asp*](https://www.emergency.cdc.gov/shelterinplace.asp)

# Attachment 4: KENTUCKY’S ESF #8 RESOURCE REQUEST FLOWCHART

# Attachment 5: Hazmat Identification Resources

**HazMat 1 Team- FEMA Type III**

**Contact Information: Call 123-123-1234 7 days a week, 24/7**

**Capabilities: Chemical: 1 handheld Ramen for liquid identification; 4 Smith's HazmatID 360 FTIR used for solid identification and may have reach-back capabilities to resolve a mixture; and no means for gas phase identification; Radiation: 3 personal radiation detection devices used for beta/gamma detection; 4 Geiger counters model xyz used to detect alpha and beta radiation; 1 backpack style detector with limited source identification and reach-back capabilities Biological: no capabilities for detection**

**National Emergency Response Guide**

<https://www.phmsa.dot.gov/training/hazmat/erg/emergency-response-guidebook-erg>

National Response Center Region 4 Response Team

<https://r4data.response.epa.gov/r4rrt/>

CDC Emergency Preparedness & Response Laboratory Information

<https://emergency.cdc.gov/bioterrorism/lab.asp>

Transportation Emergency Preparedness Program (TEPP) <https://teppinfo.com/>

# Attachment 6: SNS/Chempack Information and Request Flow Chart

\*\*\*\*This is in development by Heather Walls and will be given to you for inclusion once it is completed.\*\*\*\*\*