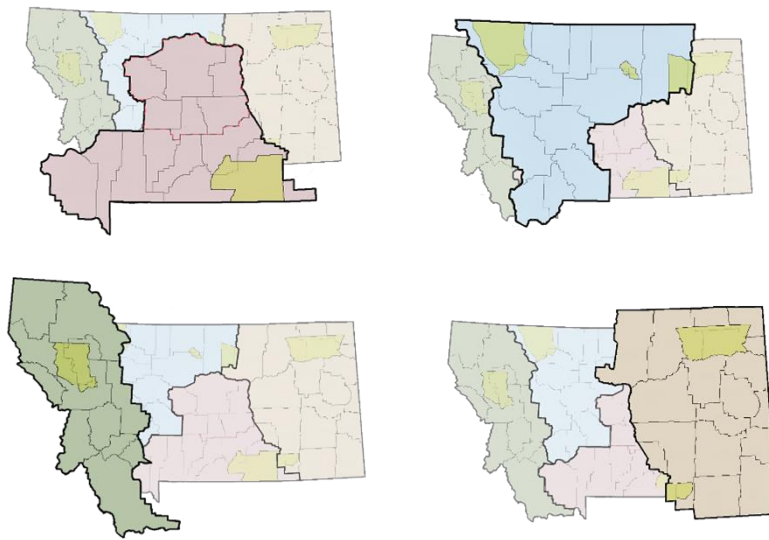


CENTRAL REGION HEALTH CARE COALITION



RADIATION SURGE ANNEX

October 2022
Version 1

PROMULGATION

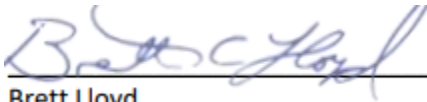
The Executive Committee of the Central Region Health Care Coalition support and provide this planning tool to provide assistance to the health care communities within the boundaries of the Central Region Health Care Coalition.



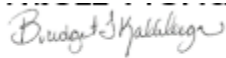
Chris Lee - Chair



Alice Luehr



Brett Lloyd



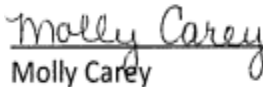
Bridget Kallenberger – Co Chair



Debbie Gessaman - Treasurer



Josh Simonds



Molly Carey

RECORD OF REVIEW

Date	Reviewed by Name & Title	Organization
June 2023	Reviewed & Accepted by Executive Committee	HCC

RECORD OF CHANGE

Date	Description of Change	Initials
October 2022	First Edition	KS
April 2023	Draft version reviewed and updated	KS

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SECTION 1: INTRODUCTION, PURPOSE, SCOPE, SITUATION, AND ASSUMPTIONS

1.1 Introduction

A radiation mass casualty incident, is defined as any incident where capacity and capability significantly compromises patient care, in accordance with individual facility, local, state, regional or federal disaster response plans. Smaller incidents within a locality or region of Montana may classify as a Radiation MCI if taxing on the facility, staffing, or resources.

This plan is intended to be flexible to fit the needs of the response, covering all aspects of a tiered approach, to response from the local level up to federal assistance as necessary. It contains guidelines for a radiation incident in the Regional Health Care Coalition facilities, including resources for staff training and augmentation, supplies and equipment, and special consideration. Participation by hospitals, health care systems and their partners is encouraged to ensure the best possible patient outcomes for all those treated within the region. Where possible, the plan leaves the majority of the decisions and processes up to the health care entities.

1.2 Purpose

This Radiation Surge Annex provides guidance to support a Radiation Mass Casualty Incident (RMCI) in which the number and/or severity of radiation patients exceeds the capability of the Central Region Health Care Coalition (CRHCC) member facilities. The goal of this plan is to provide recommendations and support to responding facilities as able.

The annex provides guidance to support a coordinated health care response to a radiation emergency in which the number and severity of exposed or possibly exposed patients challenges the capability of HCC member facilities. The annex will suggest options for incident response, treatment, and response protocol necessary 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 annex.

1.3 Scope

The Radiation Surge Annex is an Annex to the larger CRHCC Preparedness and Response Plan and is applicable for any incident that may be classified as a Radiation MCI. This annex is intended for use by the CRHCC to assist in providing coordination during a Radiation MCI. This plan outlines the concept of coordination for incidents wherein the complexity or duration requires regional support in information or resource sharing.

This Radiation Surge Annex involves all participating organizations, agencies, and jurisdictions contained within the geographical boundaries of the CRHCC. Many of these participants may have their own protocols for responding to a Radiation MCI. This document is designed to work with those protocols and does not define or supplant any emergency operating procedures or responsibilities for any member agency or organization in the CRHCC. It is not a tactical plan or field manual, nor does it provide

Standard Operating Procedures (SOP). Rather, it is a framework for maintaining the scope of the Coalition and outlining the support that may be available as requested. This plan intentionally does not provide specific or quantitative thresholds for activation or demobilization of organizational structures or processes described herein. Such determinations are situation-dependent and left to incident management. This plan is intended to be compatible with federal, state, and local emergency response plans, promotes the coordination of an efficient and effective response by utilizing the concepts outlined in the National Incident Management System (NIMS). Implementation is not contingent on the activation of the CRHCC Emergency Preparedness & Response Plan. CRHCC activities in this framework are based on established relationships and partnerships with the public, stakeholders, and contributing agencies.

Planning for Radiation MCI emergencies includes medical needs associated with mental, behavioral health, and substance abuse considerations of incident victims and response workers. Services also cover the medical needs of individuals classified as having access, functional, or special needs. The Coalition recommends that all health care entities include these special populations within their facility specific plans.

This plan is based on the current capabilities of the CRHCC and will be modified and updated as the Coalition grows. All aspects of this plan will be performed as able upon the request for assistance from any health care entity within the region.

1.4 Overview/Background of HCC and Situation

The CRHCC encompasses all health care organizations and facilities in the Central Region Health Care Coalition. Populations served by facilities within this region includes, Blackfeet Indian Reservation, Fort Belknap Reservation, Rocky Boy's Reservation, one urban center, and multiple smaller towns and isolated communities.

This annex applies to Coalition support to nuclear/radiological incidents, regardless of size or complexity and addresses suspected or actual deliberate attacks and inadvertent incidents that may affect the Coalition, including its citizens, property, and/or military capability. The ERHCC's notes the following radiation related incidents as possible or likely in the jurisdiction:

- Health care facilities with radioactive materials
- Domestic nuclear weapons accidents
- Lost/found/orphaned radioactive material sources
- Laboratories housed on College campuses
- Montana Rail Link and/or Burlington Northern Railways
- Hazardous material transportation along interstates and highways
- Multiple mining operations
- Multiple fertilizer storage sites throughout the region
- Potential unknown sites throughout the region
- Multiple other agencies and their affiliated products including but not limited to:

- Disposal companies, power administrations, private businesses, public and private schools with labs, propane storage, lumber mills, and clandestine drug labs.
- Multiple fuel tanks used for storage throughout the region.
 - These include gasoline, diesel fuels, aviation fuels, and propane farms. These products are transported out of the refineries by rail and road and are potential sources of a Radiation MCI.

For those incidents involving suspected federal crimes, including those concerning terrorism, the Federal Government will respond, lead, and coordinate related law enforcement and investigative activities to resolve threats and prevent follow-on attacks.

Health care Facilities

With the lack of any designated radiation treatment facilities in Montana, any health care facility in the state could encounter a Radiation MCI situation. However, all facilities might not have adequate capabilities to provide optimal and safe care for that patient. Facilities should be aware of designated Trauma Referral Patterns within the state. The primary medical provider will determine the need and options for patient transfer in the event of a patient with radiation injuries that require a specialized level of care.

In this region there are:

- 4 Hospitals
- 9 Critical Access Hospitals
- 2 Tribal/IHS Hospitals
- 0 HID Assessment Hospitals
- 1 Veteran’s Affairs Hospital
- 1 Specialty Hospital
- 29 Clinics
- 29 EMS
- 15 Long-Term Care Facilities
- 13 Public Health Departments

1.5 Assumptions

The following information represents facts, planning assumptions, and critical considerations that contribute to the development of an operational environment for the Radiation Surge Annex and are supplemental to those outlined in the Preparedness and Response Plan.

According to the 2017-2022 Health Care Preparedness and Response Capabilities, “Communities should be prepared to manage exposed or potentially exposed patients during a radiation emergency. During such events, individuals may go to various health care facilities, police and fire stations, and other locations for assistance.”

To ensure successful surge management, HCC members should be prepared to do the following:

- Provide wet and dry decontamination by personnel trained and equipped according to the Occupational Safety and Health Administration (OSHA) guidance for first receivers and the

Patient Decontamination in a Mass Chemical Exposure Incident: National Planning Guidance for Communities

- Ensure involvement and coordination with regional HAZMAT resources (where available), including EMS, fire service, health care organizations, and public health agencies (for public messaging)
- Distribute and administer available antidotes, including mobilization of when necessary
- Screen to differentiate exposed from unexposed patients, especially in radiation emergency events
- Develop a process for radiation triage, treatment, and transport (RTR response)
- Manage behavioral health consequences for these types of emergency events

This section outlines the key points/assumptions of the plan, for example:

- Radiation incidents may be accidental in nature (e.g., industrial or transportation accident) or purposeful, require prolonged response and extensive resource management challenges.
- Substantial differences in response protocols and priorities exist between, but are not limited to: medical treatments, industrial, terrorist (e.g., RDD/dirty bomb) and nuclear bomb detonation. The facility plan should emphasize the scenario(s) most relevant to the community.
- The Coalition annex does not replace the need for protocols at each hospital and EMS agency
- Different agencies may have authority over management of power plant, transportation, and terrorist incidents, including the authority to implement shelter-in-place and evacuation orders.
- 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 outlined ahead of an incident by the local jurisdictions.
- Federal, state, and local emergency resources will all be needed during a large-scale event.
- Contamination assessments, proper PPE utilization, and decontamination efforts will be essential in protecting coalition partners, staff, and the public
- Patients can be treated even if they are contaminated. Universal precautions used for biological contamination control is also effective for protecting individuals from radiological contamination.
- Radiation equipment for screening (pancake probes) will be necessary to screen and determine need for and effectiveness of decontamination for both patients, worried well, and workers. Plans for contamination assessment should include access to this equipment and training for staff who will use it.
- Staff at coalition facilities may be impacted by exposure, fear of exposure, or family obligations (e.g., child/family care if schools are closed, acute care facilities are affected).
- Fear from the incident will cause a worried well surge to the emergency departments and pharmacies. Facilities and agencies should consider how limited understanding of radiation and nuclear contamination will contribute to public anxiety and will require multi-modal solutions.
- Hospitals may need to incorporate a temporary solution (tent in the parking lot or nearby large meeting center) to screen or triage people arriving at the hospital before this center is set up.

- Public safety (e.g., police, fire, EMS) and other first responder personnel are considered a high-risk population; the implementation of protocols for monitoring control zones and effective contamination control measures will be essential for workforce protection.
- Federal resources (e.g., ambulance contracts, National Disaster Medical System [NDMS] teams) cannot be relied upon to mobilize and deploy for the first 72 hours.
- Management of contaminated waste from decontamination efforts should be managed in consultation with SMEs, EPA, and local water authorities.

The following are the planning assumptions for the purposes of this framework:

- All hospitals providing emergency care may receive radiation contaminated patients and should be able to provide initial assessment and stabilization before transferring to a higher level of care.
- An incident triggering the activation of the CRHCC Radiation Surge Annex will happen with little or no warning.
- Initially, all local hospitals will follow the facility's organizational protocols when faced with victims exposed to radiation.
- The major focus for an exposed patient is supportive care and determining which patients will most benefit from a dedicated specialty center.
- Care of radiation exposure and any subsequent burns is extremely resource-intensive and requires specialized staff, expert advice, and critical care transportation assets.
- Patients often become clinically unstable, complicating transfer plans.
- National bed capacity is limited and coordination of patient transfers (destinations and logistics) may take days to achieve when out-of-state capacity is required.

SECTION 2: CONCEPT OF OPERATIONS

2.1 Activation

Activation of this plan will occur upon the request for assistance from any health care entity within the region.

The initial response to a radiation mass casualty incident will likely be the responsibility of the local first responder. Health care organizations partnered with emergency management agencies, public health, law enforcement, and other response agencies, should utilize all appropriate available local resources. Existing protocols for incident command, hospital notification, coordination of resources, and distribution of patients will be adhered to, with all efforts made to minimize exposure to front line workers, facility structures, and the public. However, local efforts may quickly become exhausted and require external resource, care, and coordination assistance.

In the event that a radiation MCI occurs, it is most likely that local Disaster and Emergency Services (DES) will take the lead coordination role. The CRHCC would fulfill a support role during any radiation MCI. Support provided would be dependent on the needs identified by the health care agency and the capacity of the Coalition to fulfill those requests.

2.2 Notifications

Notification will be the responsibility of the responding agencies and participating health care facilities. The CRHCC will assist with communication and resource needs as requested.

2.3 Roles and Responsibilities

Local organizations and agencies within the impacted jurisdiction will have primary responsibility for response, including initial triage and casualty distribution.

The roles and responsibilities of the responding agencies and participating health care facilities will be determined by each individual entity. It is the responsibility of the entities to acquire and provide appropriate education and training. The CRHCC does not have the authority to dictate or recommend roles and responsibilities but will provide education and training related to best practices in the care of exposed individuals.

Plan to request or activate resources as quickly as possible. Radiation Subject Matter Experts (SME) and resources to provide situational awareness, dose estimation, and risk weighting will be important for decision making and prioritization.

2.4 Logistics

Logistics for space, staff and supplies is the responsibility of the responding agencies and participating health care facilities. The CRHCC will assist with resource needs as requested.

2.4.1 Space

Each facility should follow their own protocols for treating, holding, transporting, and transferring care in regards to exposed patients.

2.4.2 Staff

Facilities are encouraged to utilize Montana Health Care Mutual Aid System (MHMAS) as needed to request trained staff.

2.4.3 Supplies

Critical care for patients should not be delayed if Tyvek suits or other PPE is not available. Gloves, N95 face masks, and long sleeve shirts (or Tyvek suits) would be sufficient PPE for most responders.

Radiation equipment for screening (pancake probes) will be necessary to screen and determine need for and effectiveness of decontamination for both patients, worried well, and workers. Plans for contamination assessment should include access to this equipment and training for staff who will use it.

The CRHCC may assist with facilitating mutual aid to find supplies and resources, including transportation. This may include utilizing EMResource, existing MOUs, volunteer registry, and access to vendors to address resource shortages.

2.5 Operations – Medical Care

Direction and recommendations for medical care are outside of the scope of the Montana Health Care Coalitions. Resources for the following categories of clinical care and emergency management needs associated with a radiation emergency are included in Appendix 2:

- Triage and screening
- Patient care
- Treatment
- Safety and control measures
- Fatality management
- Transport
- Surveillance, tracking and situational awareness

2.6 Special Considerations

2.6.1 Behavioral Health

In coordination with direct medical care, behavioral health care may be necessary to support patients and families impacted by an exposure to radiation. Plans should be enacted early in a radiation response to address and plan for behavioral health care needs as appropriate. Additionally, due to impact of treating individuals with radiation exposure, plans may be required to support a surge in behavioral health needs of patients, family members, community members, health care staff and employees during a radiation MCI. Health care organizations within the CRHCC should work together to facilitate information coordination and standardizations of resources provided to address behavioral health concerns based on the incident. Behavioral health response may need to continue long after a radiation MCI response is demobilized.

2.6.2 Pediatric

A radiation event may result in pediatric patients. It is critical that health care facilities have the education and resources necessary to assess and treat 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.

2.6.3 At Risk Populations

Member organizations should account for community members who could be more vulnerable during a radiological emergency. Consideration should be made for supporting special interventions to ensure access to appropriate services and care.

2.7 Communications

The Health Care Coalitions will put forth the effort to coordinate and disseminate timely, accurate, and consistent information to all affected members of the HCC, up to and including coordination efforts between Health Care Coalition members, the state, the Joint Information Center, and other agencies as necessary.

2.8 Deactivation and Recovery

Indicators for incident conclusion include decreased patient volumes and near-normal levels of hospital staffing and supplies. When these indicators occur, demobilization efforts will be activated at the discretion of participating agencies with all appropriate stand-down measures initiated as needed. The Health Care Coalitions will provide guidance and support as able. These activities should include considerations for continuity of recovery efforts, the after-action report process, reimbursement, and analysis, and archiving of incident documentation.

SECTION 3: MAINTENANCE AND REVIEW

The CRHCC formally reviews all components of this plan annually. The Executive Committee offers advice and suggestions on appropriate emergency planning and construction of the document. This process allows the coalition to determine if it meets all essential factors, remains applicable, and affords the opportunity to update and change the plan as the coalition changes and grows.

Minor corrections, edits, updates, or adjustments to this document might occur on occasion without a formal review. Changes may also take place as part of the improvement plans from exercise after action reports. All changes are tracked in a versioning method and in the Record of Change log.

SECTION 4: APPENDICES

Appendix 1: Training and Exercises

Appendix 2: Additional Resources/References

Appendix 1: Training and Exercises

This plan or any of its components could be exercised separately or in conjunction with other exercises.

Exercises will be used under simulated, but realistic, conditions to validate policies and procedures for responding to specific emergency situations and to identify deficiencies that need to be corrected.

Personnel participating in these exercises should be those who will make policy decisions or perform the operational procedures during an actual event (i.e. critical personnel). Exercises are conducted under no-fault pretenses. The Health Care Coalition will identify and share as many opportunities as possible.

The Montana Regional Health care Coalitions will offer the following courses as able:

- Basic Disaster Life Support
- Advanced Disaster Life Support
- Advanced Burn Life Support

Appendix 2: Additional Resources and References

- Resource Links
- HAZMAT PPE Links
- Hazardous Materials References

Resource Links:

- [Download Mobile REMM - Radiation Emergency Medical Management \(hhs.gov\)](#)
- [RITN Exercises](#)
- [Strategic National Stockpile \(SNS\) - Radiation Emergency Medical Management \(hhs.gov\)](#)
- https://deq.mt.gov/files/Land/hazwaste/documents/HW_Transporters.pdf
- https://deq.mt.gov/files/Land/hazwaste/documents/HW_Consultants_Remediation_Firms.pdf
- <https://wrap-em.org/index.php/education/rad-surge-annex-workshop>
- <http://www.cwchealthcarecoalitions.org/wp-content/uploads/2016/10/HICS-254-Disaster-Victim-Patient-Tracking.pdf>

Hazmat PPE Links:

- [Personal Protective Equipment \(PPE\) in a Radiation Emergency - Radiation Emergency Medical Management \(hhs.gov\)](#)
- [EPA – Personal Protective Equipment](#)
- [OSHA Technical Manual \(OTM\) Section VIII: Chapter 1 Chemical Protective Clothing](#)
- [HAZMAT Suit Levels: How Many Are There?](#)
- [HAZMAT Suits – Levels of Protection](#)
- [10 things you need to know about chemical protection suits](#)
- [How To Choose Chemical Personal Protective Equipment](#)
- [NFPA Risk-Based Selection of Chemical Protective Clothing](#)
- [3 Steps To The Right Suit](#)
- [Choose the correct chemical suit with these 5 steps](#)

HAZARDOUS MATERIALS REFERENCES



January 2023

CAMEO Chemicals

CAMEO Chemicals is a database of hazardous chemical datasheets that emergency responders and planners can use to get response recommendations and predict hazards—such as explosions or toxic fumes. It is part of the [CAMEO® software suite](#), developed jointly by NOAA and the Environmental Protection Agency (EPA).

CAMEO Chemicals is available for free in multiple formats. The mobile app and desktop program formats can be run offline, so that you don't have to rely on an internet connection to get your response information. When you're online, you'll also have access to links to the NIOSH Pocket Guides and the International Chemical Safety Cards.

Online Versions

The main site is cameochemicals.noaa.gov and the mobile site is m.cameochemicals.noaa.gov.

App for Tablets and Mobile Phones

- [Get the CAMEO Chemicals app for iOS \(link is external\)](#) (on App Store)
- [Get the CAMEO Chemicals app for Android \(link is external\)](#) (on Google Play)

Desktop Program for Windows and Mac

- [Download CAMEO Chemicals 2.8.0 for Windows](#) [EXE, 177.5 MB]
- [Download CAMEO Chemicals 2.8.0 for Mac](#) [DMG, 236.4 MB]

The Windows version can be run on the Windows 8.1, 10, and 11 operating systems. The Macintosh version can be run on the Catalina (10.15), Big Sur (11), and Monterey (12) operating systems. Other operating systems have not been tested and are not supported.

Note: The auto-update feature has been removed in version 2.8.0. Users with older CAMEO Chemicals versions will need to manually download and install the new version using the links above.

CAMEO Chemicals

Home
Help

Search Chemicals
New Search
Modify Search
Search Results

MyChemicals
chemicals: 0
View MyChemicals
Predict Reactivity

Mobile Site

Chemical Datasheet Add to MyChemicals Print Friendly Page

CHLORINE

Chemical Identifiers

CAS Number 7782-50-5 **UN/NA Number** 1017 **DOT Hazard Label** Poison Gas Oxidizer Corrosive **USCG CHRIS Code** CLX

NIOSH Pocket Guide Chlorine **International Chem Safety Card** CHLORINE

NFPA 704

Diamond	Hazard	Value	Description
0	Health	4	Can be lethal.

Part of the chlorine chemical datasheet, showing placards, hazard labels, and identification numbers.

Comparing CAMEO Chemicals Formats

CAMEO Chemicals is available as a website, mobile website, mobile app, and desktop program. All of those formats use the same database, so the content is the same (see the [development history](#) for details about released versions). Most of the program functionality is the same across formats as well, as shown in the [CAMEO Chemicals feature comparison chart](#).

How CAMEO Chemicals Works

Search through the extensive chemical database in CAMEO Chemicals to find datasheets with critical response information, including physical properties, health hazards, information about air and water hazards, and recommendations for firefighting, first aid, and spill response. Additional datasheets based on UN/NA identification numbers provide response information from the Emergency Response Guidebook (ERG) and shipping information from the Hazmat Table (49 CFR 172.101). On the UN/NA datasheets, ERG Response Guide PDFs are available in English, Spanish, and French. You can also make a collection of chemicals, and then use the chemical reactivity tool to predict what hazards could arise if the chemicals were to mix together.

More Information about CAMEO Chemicals

- **CAMEO Chemicals Fact Sheet** [PDF, 547 KB]: Learn more about program features by reading this CAMEO Chemicals fact sheet.
- **CAMEO Chemicals Development History**: Read about the changes made in each release of the CAMEO Chemicals program.
- **CAMEO News Service**: This mailing list provides a way for the CAMEO team (at EPA and NOAA) to communicate important information to the CAMEO community. It is used primarily to send updates when new releases are available for ALOHA, CAMEO Chemicals, CAMEO Data

Manager, MARPLOT, and/or Tier2 Submit. The service is hosted by NOAA. [Follow this link to subscribe.](#) (link is external)

- **CAMEO Software Suite:** Find out more about the four core programs—and several related programs—in the CAMEO software suite, which aids in hazardous material response and planning.

Questions: [Contact us \(link sends e-mail\)](#) with questions, comments, or suggestions about CAMEO Chemicals.



[Chemical Hazards Emergency Medical Management](#)

Goals

- Enable first responders, first receivers, other health care providers, and planners to plan for, respond to, recover from, and mitigate the effects of mass-casualty incidents involving chemicals.
- Provide a comprehensive, user-friendly, web-based resource that is also downloadable in advance, so that it would be available during an event if the internet is not accessible.

[New Users: Where Do I Start?](#)

[Download CHEMM](#)

[Get Email Updates](#)



Goals:

- Provide guidance for health care providers, *primarily physicians*, about clinical diagnosis and treatment of radiation injury during radiological and nuclear emergencies.
- Provide guidance for the wider health care community (see [Other Audiences](#)), including trainers, about issues related to planning for and responding to radiation mass casualty incidents.
- Provide just-in-time, evidence-based, usable information with sufficient background and context to make complex issues understandable to those *without* formal radiation medicine expertise.
- Provide web-based information that is also downloadable in advance, so that it would be available during an emergency if the internet is not accessible.

Download Mobile REMM

Version 5.1 (2022)

- Sign up for the [REMM email updates](#) to be notified about future updates.
- A [short video about the new Mobile REMM app](#) is available on the REMM YouTube channel.

- [For iPhone® / iPad®](#)
- [For Android®](#)

Mobile REMM for iPhone / iPad



Mobile REMM is available as a free iPhone App at the Apple App Store.

- [Download from App Store](#)
- Or search for "radiation emergency" in the Apple App Store
-

Mobile REMM for Android

Mobile REMM is now available as a free Android App at the Google Play.

- [Download from Google Play](#)

Or search for "radiation emergency" in the Google PI