Keys to Successful…

Medical Service Drills

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About Us

- **Kevin Hicks** is with the Alabama Office of Radiation Control where he serves as the Director for Emergency Planning and Environmental Monitoring. He is responsible for planning, reviewing, and implementing the statewide health physics program. Kevin has spent 26 years with Alabama Department of Public Health.
- **Michael Hallman** is in his third year as a senior radiation physicist in the Emergency Planning & Environmental Monitoring branch of the Office of Radiation Control under the Alabama Department of Public Health. He hails from Tuscaloosa, Alabama, where he graduated from The University of Alabama with a bachelor's in chemical engineering. Currently a resident of Birmingham, Alabama, Michael enjoys technology, dogs, wine, and college football (ROLL TIDE!).

About Us

- **Glenda Bryson** joined FEMA RIV/REPP in 2016. She is the Site Specialist for Browns Ferry and State Lead for Alabama. Previously, Glenda worked as a REP Planner and Critical Infrastructure Specialist with the Georgia Emergency Management & Homeland Security Agency for 11 years.
- **Gerald McLemore** joined the FEMA RIV/REPP in 2007. He was assigned to the North Section as the Site Specialist for Mississippi until 2019. Now, Gerald is the Senior Site Specialist for the South Section and the State Lead for Florida. Currently, he performs Site Specialist duties for St. Lucie and Turkey Point Nuclear Plants.

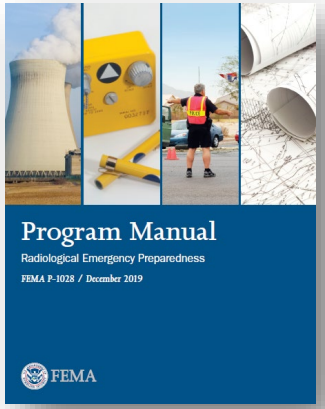
Disclaimer

- The speakers, the Alabama Department of Public Health and the Federal Emergency Management Agency do not endorse any particular vendor or other supplies presented. The speakers are simply stating the techniques and supplies the State of Alabama has elected to use for training, drills, exercises, or actual events that would involve a nuclear power plant emergency. Other vendors or other supplies may offer similar solutions to the challenges at hand.

Agenda

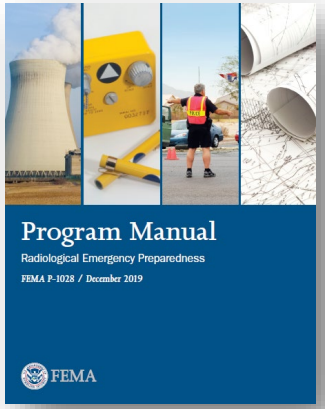
- Medical Service Drill Planning and Assessment
- Training: EMS
- Training: Hospital
- Practice: EMS + Hospital
- Above and Beyond
- Example Case
- Contact Us
- Resources

Medical Service Drill Planning and Assessment



- The 2019 revision of the Federal Emergency Management Agency (FEMA) Radiological Emergency Preparedness (REP) Program Manual (RPM) and NUREG-0654/FEMA-REP-1, Rev. 2 were released on December 23, 2019.
- Part II: REP Program Planning Guidance
  - Planning Standard L – Medical and Public Health Support
  - Planning Standard N – Exercises and Drills
- Part III: REP Program Assessment Policies and Guidance, Objective 5: Operate, Capability Target 5.3

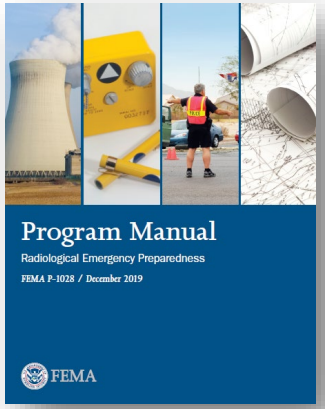
Medical Service Drill Planning and Assessment



- Planning Standard L, Evaluation Criterion L.1

  Arrangements are established with primary and backup hospitals (one hospital is located outside the plume exposure pathway EPZ) and medical services. These facilities have the capability for evaluation of radiation exposure and uptake. The persons providing these services are adequately trained and prepared to handle contaminated, injured emergency workers and members of the general public.

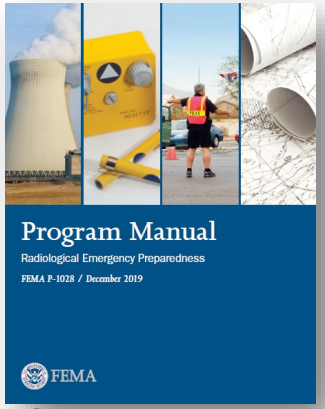
Medical Service Drill Planning and Assessment



- Planning Standard L, Evaluation Criterion L.2

  Arrangements for the medical treatment of contaminated, injured onsite personnel and those onsite personnel who have received significant radiation exposures and/or significant uptakes of radioactive material are described. These arrangements include the following components:

Medical Service Drill Planning and Assessment



- Planning Standard L, Evaluation Criterion L.2.a

  An onsite first aid capability with adequate medical equipment and supplies.

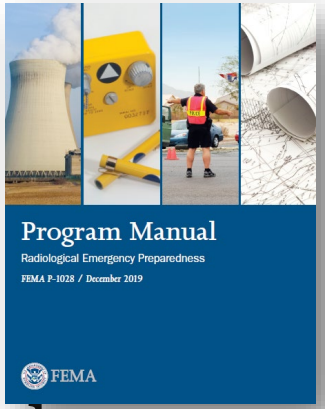
- Planning Standard L, Evaluation Criterion L.2.b

  Primary and backup offsite medical facilities.

- Planning Standard L, Evaluation Criterion L.2.c

  Radiological controls capability, including the isolation of contamination, assessment of contamination levels, radiation exposure monitoring for medical facility staff, collection of contaminated waste, and decontamination of treatment areas.

Medical Service Drill Planning and Assessment



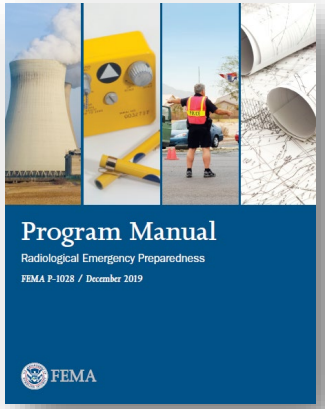
- Planning Standard L, Evaluation Criterion L.2.d

  Provisions to evaluate for radiological contamination either prior to transport to a medical facility or after arrival.

- Planning Standard L, Evaluation Criterion L.2.e

  Contact information for facilities capable of treating overexposure to radioactive material.

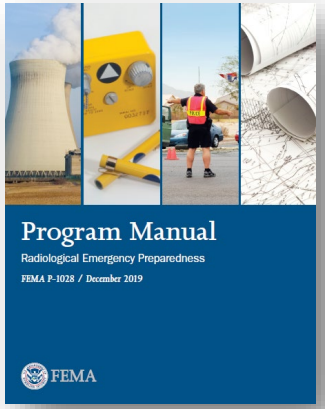
Medical Service Drill Planning and Assessment



- Planning Standard L, Evaluation Criterion L.3

  Supplemental lists are developed that indicate the location of the closest public, private, and military hospitals and other emergency medical facilities within the state or contiguous states considered capable of providing medical support for any contaminated, injured individual.

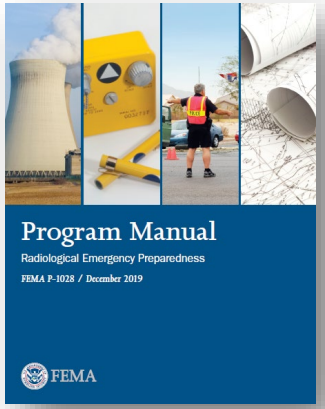
Medical Service Drill Planning and Assessment



- Planning Standard L, Evaluation Criterion L.4

  Each organization arranges for the transportation of contaminated, injured individuals and the means to control contamination while transporting victims of radiological incidents to medical support facilities and the decontamination of transport vehicle following use.

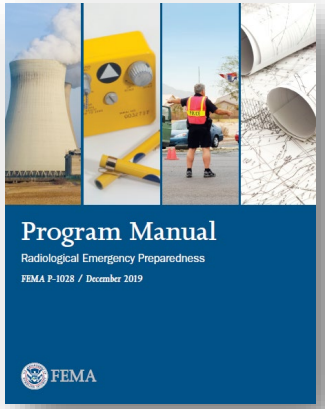
Medical Service Drill Planning and Assessment



- Planning Standard N, Evaluation Criterion N.4.b

  Medical services drills are conducted annually at each medical facility designated in the emergency plan. These drills involve a simulated, contaminated emergency worker and/or member of the general public and contain provisions for participation by support services agencies (i.e., ambulance and offsite medical treatment facility).

Medical Service Drill Planning and Assessment



- Objective 5: Operate

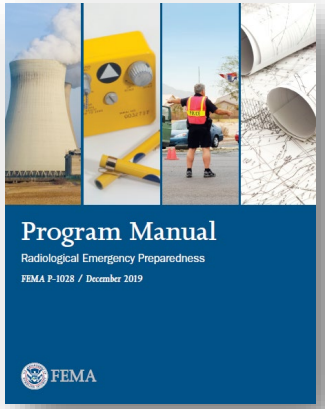
  Capability Target 5.3: Transportation and Treatment of Contaminated, Injured Individuals

  Intent: The capability to provide medical transport and treatment to contaminated, injured individuals.

  Planning References: C.2.d, F.2, H.11, H.12, J.2, K.3, K.4, L.1, L.3, L.4, and O.1

  Assessment Activity N.4.b

Medical Service Drill Planning and Assessment



- Transportation
  - Transport contaminated, injured individuals to medical facilities.
  - Maintain communications between the medical transportation provider and the receiving medical facility.
- Medical Facility
  - Operationally check instruments and equipment.
  - Set-up, activate, and operate a radiation emergency area.
  - Monitor and decontaminate the individual, equipment, and other items.

Training: EMS

- Use QR codes for videos
  - Example: three-sheet method
  - https://youtu.be/F-6GgSq2qeA
- REAC/TS: Radiation Emergency Assistance Center/Training Site
  - https://orise.orau.gov/reacts
- Practice donning/doffing procedures
  - Present videos and/or real time practice
  - For PPE and ambulance
- Practice Field Decontamination
  - Use real-time mannequin
    - Rescue Randy
- Offer CEUs for EMTs (cards, certificates)

Training: EMS

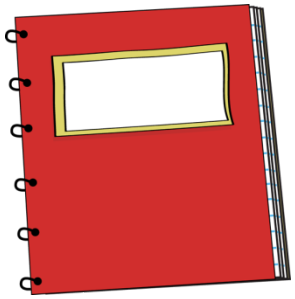
INVENTORY IT!
- Pre-exercise
- Post-exercise
- Zip tie shut to ensure contents are accounted for
- Available for use throughout year; simply ask for notification for replacement

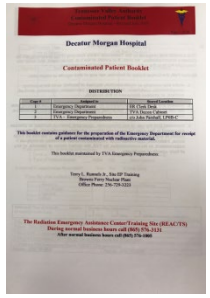
- Tote Contents
  - PPE (M-5XL)
  - Masking Tape
  - Garbage bags
  - Radioactive Material labels
  - Dosimeters and charger
  - TLDs
  - Base gloves
  - Outer gloves
  - Donning & doffing instructions (foam board)
  - Emergency Response Guide
  - EMS plan in notebook
  - Basic Radiation Training manual
  - Dose limit cards
  - Transportation of Radioactive Material Reference Guide
    Radiological Emergency Assistance Contacts sheet

Training: Hospital

- Use QR codes for videos
  - Example: doffing PPE
  - https://youtu.be/MNU6uaIdNQA
- Use drawings for setup of ambulance reception area and decontamination room
  - Take photos
  - Draw on photos

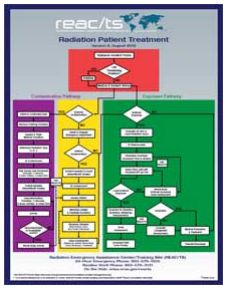
- Review plans for individual hospitals
  - 3 notebooks
    - State agency
    - Head nurse
    - ER





Training: Hospital

- REAC/TS: Radiation Emergency Assistance Center/Training Site
  - https://orise.orau.gov/reacts
  - Algorithm
    - Foam board with dry erase marker
    - https://orise.orau.gov/reacts/infographics/radiation-patient-treatment-algorithm.pdf



  - Medical Aspects of Radiation Incidents
    - https://orise.orau.gov/reacts/documents/medical-aspects-of-radiation-incidents.pdf

Training: Hospital

- Cabinet Contents

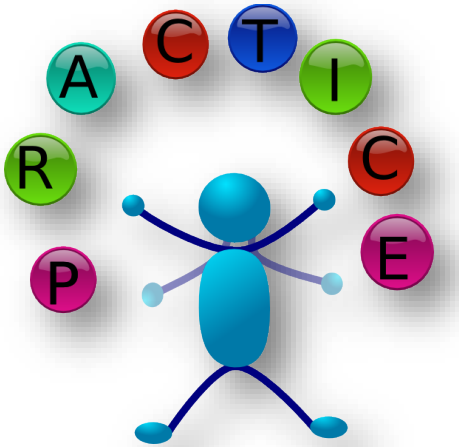
Sample Supplies and Equipment Needed to Prepare the Emergency Department for the Care of the Contaminated Patient	
Brown wrapping paper	Shampoo
Large waste containers lined with plastic bags	Emergency medical supplies and equipment (such as suction, oxygen, airways intubation, IV solutions)
Rope	Water resistant suit
"Caution : Radiation Area" signs	Gowns
Decontamination table	Surgical hoods
5-gallon containers for wash water	Masks
Masking tape	Surgical gloves of various sizes
Cotton-tipped applicators	Waterproof shoe covers
Various sizes of plastic bags	Dosimeters and survey meters
Small lead storage containers	Rubber or plastic aprons
Sterile saline	Batteries
Sterile water	Wax or felt tip pens
Sodium hypochlorite or household bleach	Radioactive labels
Providone iodine solution or other surgical soap	Sheets, Blankets, towels, patient gowns
Soft scrub brushes	Dosimeter charger
3-percent hydrogen peroxide solution	Spare batteries for survey instruments and dosimeter charger
Film badges	TLDs

- Outside nurse kit
  - Chucks
  - Shears
  - Base gloves
  - Top gloves
  - Sample ID labels
  - Small REAC/TS poster
  - REAC/TS book
  - Face masks with shield
  - Cotton-tipped applicator
  - Small sample bags
  - Tape – radiation banding
  - Stickers – radioactive material
  - Sharpie
  - Surgical caps
  - Medical tape
  - Gauze
  - Gauze bandages (optional)
  - Radiation exposure record
  - Anatomical drawings

Training: Hospital

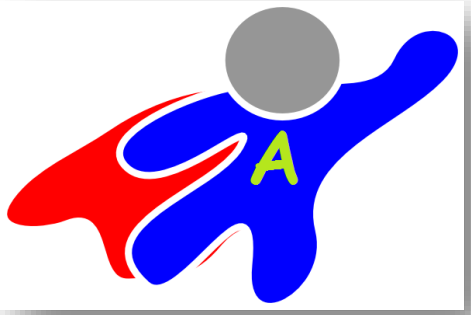
- Integrate with all departments
  - ED nurses
  - Nuclear Medical
  - Radiation Safety Officer
  - Housekeeping/Plant Operations/Environmental Services
  - Administration
- Practice donning/doffing procedures
  - Present videos and/or real time practice
  - For PPE and ambulance reception/decontamination room
- Offer CEUs for nurses (cards, certificates)

Practice: EMS + Hospital



- Training 2-3 weeks prior to MSD
- Practice 1-2 days before MSD
  - Practice = wound on left arm and right leg
  - Evaluation = wound on right arm and left leg

Above and Beyond



- Standard Requirements
- Life Saving Injuries
- Multiple Patients
- Multiple Patients with Life Saving Injuries

Example Case

- Mercy Hospital, Miami, FL
- Winter 2019 MSD for St. Lucie NPP
- Demonstrated…
  - Multiple patients
    - Contaminated
    - Not contaminated
  - Life threatening patients
    - Contaminated
    - Not contaminated
  - Boat arrival of patients
  - Self-reporting patients
- For more information, contact REP leads
  - Niel Batista
    - niel.batista@miamidade.gov
  - Mary Napoli
    - napoli-mary@monroecounty-fl.gov

Maintain good relationships

- EMS/FD
- Hospital
- Local & State EMA
- Utility
- Radiation Control Agency
- FEMA/NRC

Contact Us

- Kevin Hicks
  - kevin.hicks@adph.state.al.us
- Michael Hallman
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- Glenda Bryson
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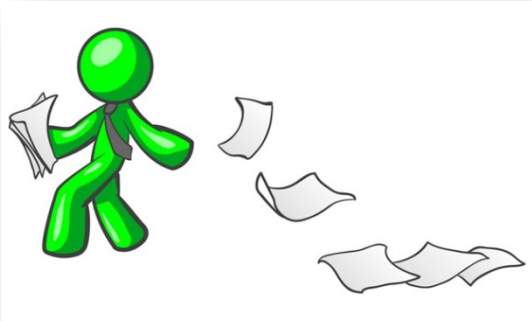
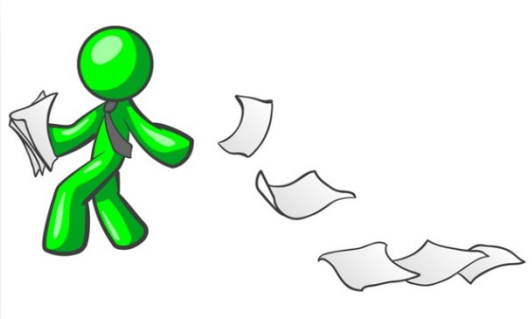
- Gerald McLemore
  - gerald.mclemore@fema.dhs.gov

Resources



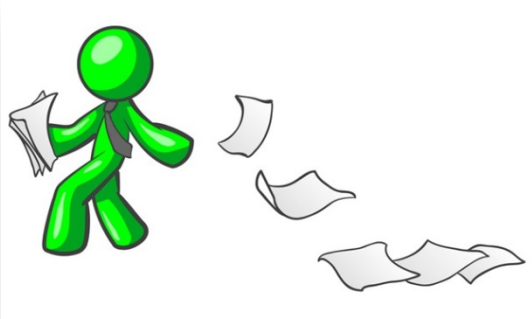
- QR Code Generator
  - https://www.qrstuff.com

Resources



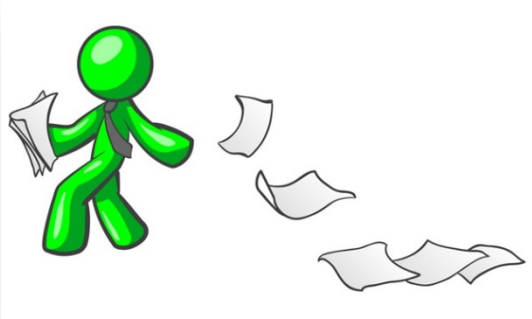
- Videos for ***general training***
  - Types of Ionizing Radiation
    - https://youtu.be/2fIylibGJYM
  - Time, Distance, Shielding
    - https://youtu.be/2AcqRD5TTpc
  - Radiological Basics
    - https://youtu.be/QiwFg60V5DE
  - Biological Effects
    - https://youtu.be/wMySBZ4GwCw

Resources



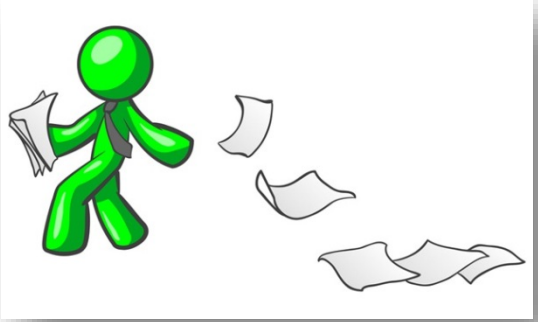
- Videos for EMS
  - ***General training videos***, plus…
  - Donning PPE
    - https://youtu.be/UANQNAd1a4c
  - Field Decontamination: 3-sheet method
    - https://youtu.be/F-6GgSq2qeA
  - Doffing PPE
    - https://youtu.be/MNU6uaIdNQA

Resources



- Videos for Hospital
  - ***General training videos***, plus…
  - Donning PPE
    - https://youtu.be/UANQNAd1a4c
  - Doffing PPE
    - https://youtu.be/MNU6uaIdNQA
  - FEMA Hospital Response
    - https://youtu.be/hidRHAjofQ8
  - CDC Just In Time Training for Hospital Clinicians
    - https://youtu.be/e1LJWWe4StQ

Resources



- Materials for Hospital
  - **PDF:** Radiation Emergency Assistance Center / Training Site (REAC/TS) Pocket Guide for Nurses: "Medical Aspects of Radiation Incidents"
    - https://orise.orau.gov/reacts/resources/medical-aspects-of-radiation-incidents.html
  - **PDF:** REAC/TS Radiation Patient Treatment Algorithm
    - https://orise.orau.gov/reacts/resources/index.html
  - **PDF:** REAC/TS Radiation Quick Reference Guide
    - https://orise.orau.gov/reacts/resources/frequently-asked-questions-about-radiation.html

THANK YOU!

Questions?