

# BASIC RADIATION TRAINING

## For Hospital Medical Personnel

Alabama Department of Public Health • Office of Radiation Control • 334.290.6244 • [alabamapublichealth.gov/radiation](http://alabamapublichealth.gov/radiation)

# 2022



**Jerome Coleman, Radiation Physicist Senior**  
[jerome.coleman@adph.state.al.us](mailto:jerome.coleman@adph.state.al.us)

**Michael Hallman, Radiation Physicist Senior**  
[michael.hallman@adph.state.al.us](mailto:michael.hallman@adph.state.al.us)



**SCAN ME!**

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Name: \_\_\_\_\_ Organization: \_\_\_\_\_ Telephone #: \_\_\_\_\_

## CONTACTLESS SIGN-IN

**USE YOUR PHONE'S CAMERA APP TO AIM AT THIS QR CODE, THEN  
SELECT THE LINK THAT APPEARS AUTOMATICALLY.**



Or type in the URL below:

**<https://bit.ly/adphsignin>**

**!!!PLEASE CLOSE YOUR BROWSER'S TAB ONCE DONE!!!**

# Basic Radiation Training

*For Emergency Workers*

Alabama Department of Public Health  
Office of Radiation Control

**PHYSICAL:**

ADPH Training Center & Administrative Complex  
208 Legends Court, Prattville, AL 36066

**MAILING:**

P. O. Box 303017, Montgomery, AL 36130-3017  
T: 334.290.6244 F: 334.285.9342

[www.alabamapublichealth.gov/radiation](http://www.alabamapublichealth.gov/radiation)

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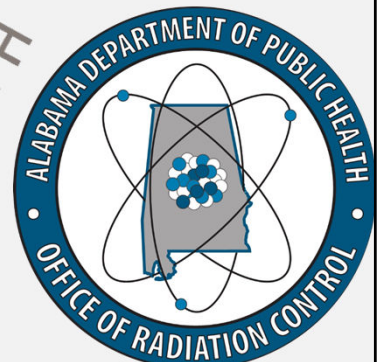
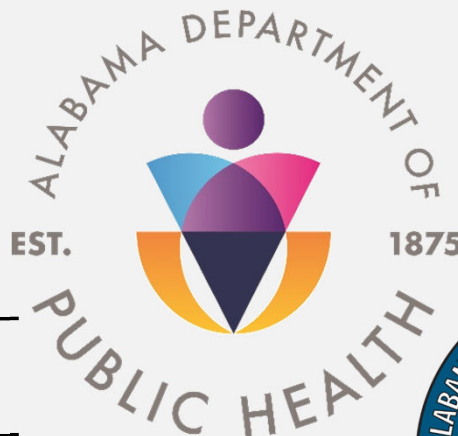
**Jerome Coleman**, Radiation Physicist, Senior  
[jerome.coleman@adph.state.al.us](mailto:jerome.coleman@adph.state.al.us)

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**Michael Hallman**, Radiation Physicist, Senior  
[michael.hallman@adph.state.al.us](mailto:michael.hallman@adph.state.al.us)

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**24-hour ADPH ORC Duty Officer**  
334.324.0076

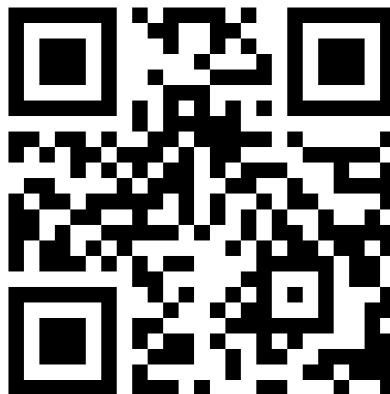


Date	Change	Performed by
04/01/2022	ALL: Added QR code & URL for signing into class	M. Hallman
	ALL: Added change log	
	ALL: Added QR code to cover to download book	
	ALL: Added blank for putting name/org./tel. # on cover	
	MORGAN: Priceville Jr. High changes to Priceville High School	
	ALL: Added FEMA & NRC acronyms	
	MORGAN: First Response EMS is replaced by Decatur Morgan EMS	
07/26/2022	ALL: Refer all videos to ADPH ORC channel via QR code and URL	M. Hallman
07/26/2022	ALL: Removed QR code to EW assessment (replaced by feedback)	

## Change Log

### Videos

- ▶ All videos are now housed on our YouTube channel:



<https://bit.ly/ADPHORCyoutube>

# TABLE OF CONTENTS

• Sign In / Introduction / Change Log / ADPH ORC YouTube Channel .....	1-2
• Radiological Guidance for Hospital Personnel .....	5
• Notification and Communication .....	6
• Notification of State Radiation Control Agency .....	7
• Basic Hospital Supply Requirements .....	7
• Preparation of the Radiation Emergency Area (REA) .....	8
• Ventilation and Other Concerns .....	9
• Response Team Preparation .....	9
• Radiation Patient Treatment Algorithm .....	10
• Patient Transfer .....	11
• Patient Assessment and Triage .....	12
• Removing Contaminated Clothing .....	13
• Sample Collection .....	14
• Types of Radiation Injuries .....	14
• Types of Radiation Injuries: Irradiation, Contamination, and Incorporation .....	15-16

The Federal Emergency Management Agency (FEMA), an agency of the Department of Homeland Security (DHS), is required to interview a certain number of emergency workers, personnel and equipment monitors to ensure that they are aware of their radiation dose limits, equipment, and the basics of radiation. The training manual has the following features:

- **Table of contents** for looking up the answers for exercises, evaluations, real-time emergency situations
- **Forms** located in the back of the book that can be used for reception centers, personal radiation exposure records, equipment setup, etc.
- **Maps** for the two nuclear power plants' 10-mile Emergency Planning Zones (EPZ) and the 50-mile Ingestion Pathway Zones (IPZ).
- **Glossary** in the back of the book with radiation terms not routinely used.

Formatting for this guide is as follows:

1. Information *on* the PowerPoint slide
2. Information *below* the PowerPoint slide in the Notes section
3. Information *discussed* in the Basic Radiation Training course by the instructor



# TABLE OF CONTENTS

• Wound Care for External Contamination .....	17
• Wound Injury .....	18
• Decontamination for Intact Skin .....	19
• Detecting Internal Contamination .....	19
• Treatment for Internal Contamination .....	20-21
• Discharging the Patient .....	22
• Patient Movement Out of the REA .....	23
• Exit of Hospital Personnel .....	24
• Final Close Out of Radiation Emergency Area (REA).....	25
• REAC/TS .....	25
• REAC/TS Donning/Doffing Guides .....	26
• REAC/TS Monitoring a Patient Guidelines .....	27
• REAC/TS Personnel Monitoring Guidance .....	28
• REAC/TS Patient Radiological Survey Sheet .....	29
• REAC/TS Area Radiological Survey Sheet for Decon of Room .....	30

Everything you need to know about protecting yourself from radiation can be found in this manual. Therefore, please place this manual in a readily accessible location. For example, law enforcement might place it in a patrol car, or firemen might place a copy in each fire engine.

EWS = Emergency Worker Station (where you get your equipment)

EWD = Emergency Worker Decontamination

CRC = Community Reception Center

MCF = Mass Care Facility (where people are sheltered after going through the CRC, a.k.a. "shelter")

\*\*\*Potassium Iodide (KI) will be administered for Emergency Workers at each EWS and to the general public in affected areas at each CRC.\*\*\*

Henry:

EWS = Henry County EMA Parking Lot

EWD = Houston County Farm Center

CRC = Houston County Farm Center

MCF = Westgate Recreation Center

Houston:

EWS = Houston County Farm Center

EWD = Houston County Farm Center

CRC = Houston County Farm Center

MCF = Westgate Recreation Center

Lauderdale:

EWS = Lauderdale County High School

EWD = Lauderdale County High School

CRC = Brooks High School

MCF = Florence High School

Lawrence:

EWS = Lawrence County EMA

EWD = Moulton Recreation Center

CRC = Moulton Recreation Center

MCF = Moulton Church of Christ, Moulton Elementary School, Moulton Middle School

Limestone:

EWS = Athens/Limestone County Rescue Squad

EWD = all CRCs

CRC = Ardmore High School, Elkmont High School

MCF = all CRCs

Madison:

EWS = N/A

EWD = N/A

CRC = Dr. Richard Showers Recreation Center ; Dublin Park Recreation Center, Madison ; UAH, Spragins Hall

MCF = all CRCs that are activated.

Morgan:

EWS = Morgan County EMA (however, some equipment is prepositioned)

EWD = Priceville High School

CRC = Priceville High School, Hartselle Intermediate School

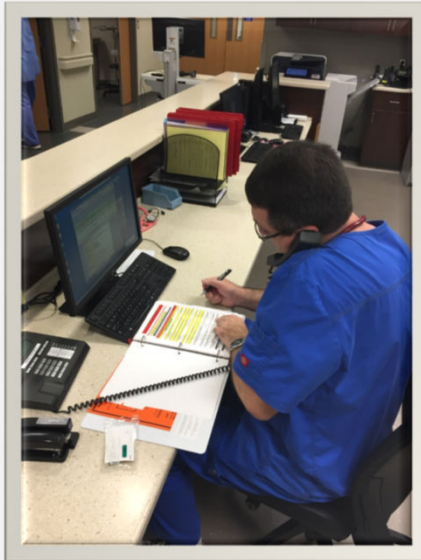
MCF = Priceville High School, Hartselle Sparkman Civic Center

# RADIOLOGICAL GUIDANCE FOR HOSPITAL PERSONNEL



Radioactive materials are among the many kinds of hazardous substances emergency hospital personnel might have to deal with. It is prudent, as emergency personnel, to know your role in responding to such an accident should one occur in your community. Emergency hospital personnel should always follow procedures in order to handle radiation accidents properly.

# NOTIFICATION & COMMUNICATION



Request the following information:

1. Number of accident victims
2. Each victim's medical status and mechanism of injury
3. If victims have been surveyed for contamination
4. Radiological status of victims (exposed vs. contamination)
5. Identify the contaminant, if known
6. Estimated time of arrival
7. Call-back number

When the hospital receives a call that a radiation accident victim is to be admitted, a planned course of action should be followed. The individual receiving the call should get as much information as possible and maintain good communication with the ambulance.

If any doubt about contamination exists, assume the victim is contaminated until proven otherwise. Advise ambulance personnel of any special entrance to the emergency department for the radiation victim. If the accident notification comes from a source other than the usual emergency communications, get a call-back number and verify the accident prior to assembling the radiological emergency response team and preparing for patient admission.

If during a drill, before each transmission, say "This is a Drill."

# NOTIFICATION OF STATE RADIOLOGICAL CONTROL AGENCY

**RADIOLOGICAL EMERGENCY ASSISTANCE CONTACTS**  
USE FOR INCIDENTS INVOLVING RADIOACTIVE MATERIAL

**24-hour  
State EOC Communication Center**  
(205) 280-2310  
(800) 843-0699

If contact is not established, please call:  
Alabama Radiation Control Duty Officer  
**(334) 324-0076**

For additional contacts, please call the following:  
**Radiation Control Office**  
(334) 290-6244 • 1 (800) 582-1866

NAME	CELL
David Turberville	(334) 314-6323
Myron Riley	(334) 224-4035
Nick Swindall	(334) 322-8397
Kevin Hicks	(334) 314-6326
Cason Coan	(334) 320-3457
Undria McCallum	(334) 296-2105

\*Current as of January 1, 2022     Alabama Department of Public Health  
\*Destroy all Earlier Editions     Office of Radiation Control  
Prattville, AL

22

ADPH-RAD-1/REV 10-22

## BASIC SUPPLY REQUIREMENTS

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



In the event of a radiation emergency involving contamination, bring the following supplies to the corridor outside the decontamination area or to an adjacent room.

In some cases, a table or gurney is used and is set up outside the decontamination room with all supplies. This allows the outside nurse to remain in the area to record and document medical and radiological data while assisting the inside decontamination team with needed supplies.



# PREPARATION OF RADIATION EMERGENCY AREA (REA)

- Contamination control is an important consideration during patient admission to ED.
- Cover floor between ambulance arrival area and REA.
- Be aware that plastic coverings can become slippery when wet.



1. Select a treatment room near an outside entrance. Clear the area of visitors and patients. Remove or cover equipment that will not be needed during emergency care of the radiation accident victim. Survey instruments should be checked (record background levels) and ready to use prior to arrival of the patient.
2. Several large plastic-lined waste containers will be needed. The treatment table should be covered with several layers of waterproof, disposable sheeting. Plastic bags in all sizes will be needed and should be readily available. Rolls of brown wrapping paper, butcher paper, or plastic floor covering, three to four feet wide, can be unrolled to make a path from the ambulance entrance to the decontamination room. Ordinary cloth sheets or square absorbent pads can be used if paper is unavailable. Whatever floor covering is used, it should be taped securely to the floor. This route should then be roped off and marked to prevent unauthorized entry. The floor of the decontamination room or treatment area should be covered in a similar way, if time allows. This will make cleanup of the area easier. A control line should be established at the entrance to the decontamination room. A wide strip of tape on the floor at the entrance to the room or if available, a radiation step off pad, should be marked clearly to differentiate the contaminated (dirty) side from the non-contaminated (clean) side.

## Steps to Controlling Contamination

- Ensure controlled area is large enough to hold patients
- Remove or cover non-essential equipment
- Cover floor areas
- Restrict access to controlled area
- Monitor everything leaving controlled area
- Use strict isolation procedures
- Control waste
- Use buffer zone for added contamination control
- Change out supplies as they become contaminated
- Use waterproof materials where possible

# VENTILATION AND OTHER CONCERNS

- While it may be desirable that the room(s) have a negative pressure system that is separate from the rest of the hospital or a means of preventing the unfiltered exhaust air of the radiation emergency area from mixing with the rest of the hospital, there is very little likelihood that contaminants will become suspended in air and enter the ventilation system. Therefore, no special precautions are advised.
- Decontamination table should be set up inside controlled area for patient decontamination
  - Standard treatment table
  - Burn table
- Not all equipment can be decontaminated
  - Covering material with plastic or sheets will help prevent contamination
  - Porous materials such as straps on hospital carts should be discarded after use



# RESPONSE TEAM PREPARATION

## Inside REA

- Team Coordinator
- Physician
- Triage Officer
- Nurse
- Technical Recorder
- Radiation Safety Officer
- Survey/Monitor Assistant

## Outside REA

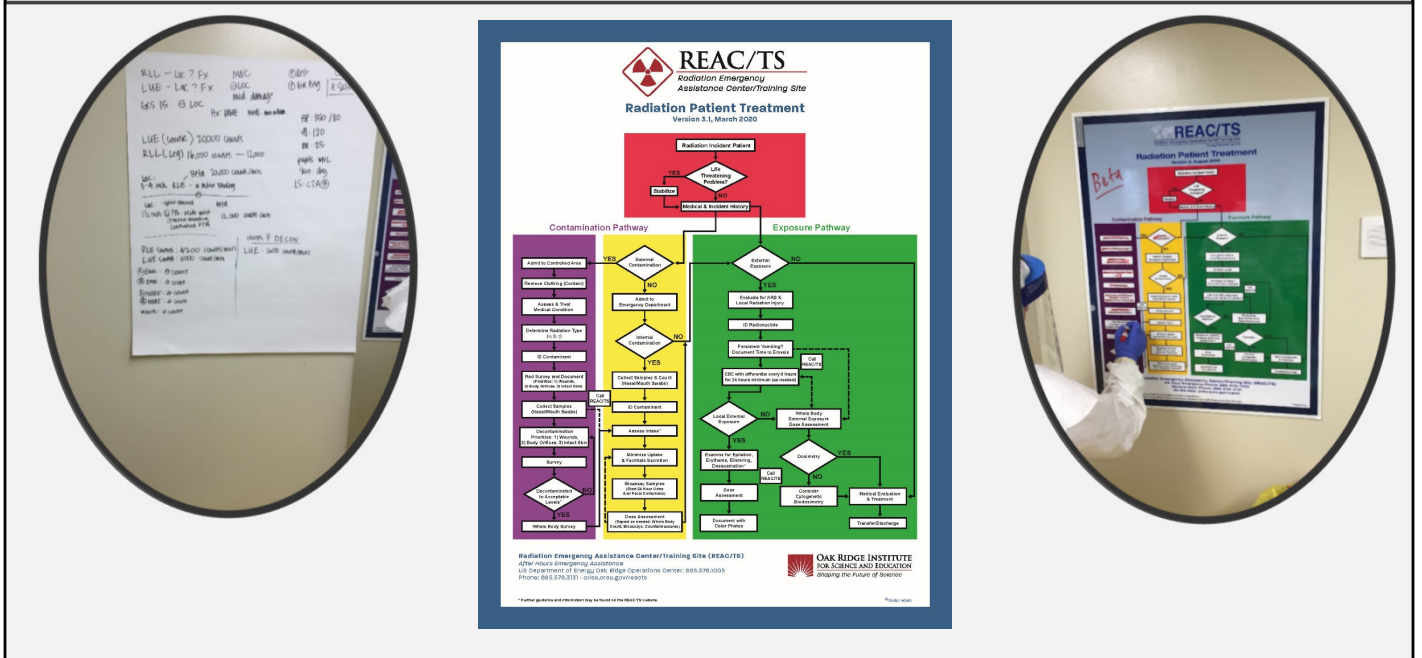
- Administration
- Public Information Officer
- Security
- Engineering
- Laboratory Tech



Each member of this team should be familiar with the hospital's written plan and should participate in scheduled drills. More frequent drills should be considered by subgroups as decontamination, triage, or radiological monitoring.

- It is important that Radiation Emergency Response Team members be designated with a role.
- Each team member plays a critical role in a successful response
- The exact number of members will vary according to each facility and the nature of the incident.

# RADIATION PATIENT TREATMENT ALGORITHM



Place on wall inside the decontamination room and review prior to the patient arrival. The REAC/TS algorithm will guide the treatment staff in assessing and treating the patient who is found to be contaminated by radioactive material.

24-Hour Emergency Phone: 865-576-1005  
Ask for REAC/TS

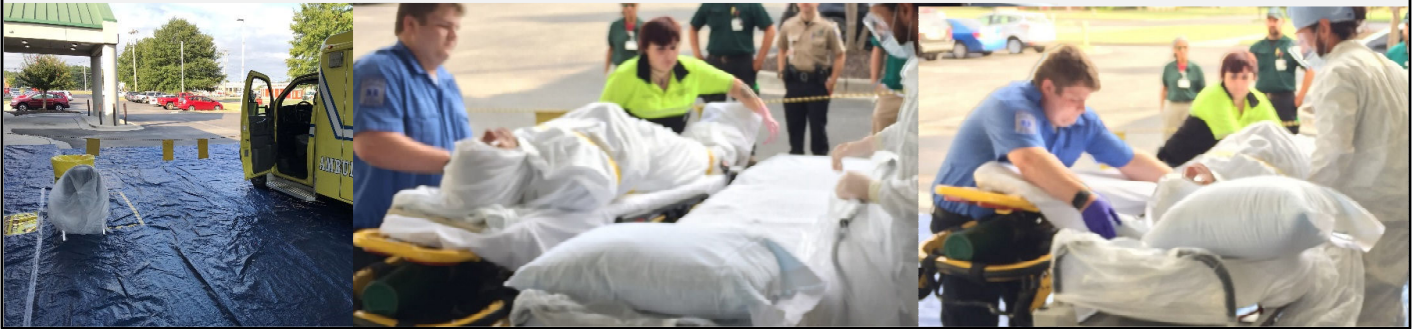
Routine Work Phone: 865-576-3131

On the Web: <https://orise.orau.gov/reacts>



# PATIENT TRANSFER

- Primary assessment is the initial, rapid assessment and treatment for life threats.
- Meet patient at ambulance entrance.
- Conduct rapid radiological survey for hazardous levels and of patient. Take survey of EMS and ambulance for release.



The hospital staff will meet the ambulance outside the emergency department or designated receiving area. A victim in stable condition should immediately be transferred to clean stretcher. A whole body survey should be conducted prior to entering the decontamination room. The EMS personnel should remain with the ambulance.

Before leaving the area, the ambulance and personnel must be monitored for contamination. If contamination is found, a shower and change of clothing is required. A final survey by the hospital's RSO is required before leaving the area. If the ambulance is found to be contaminated, the ambulance will be directed to the emergency worker decon station to be decontaminated. Contact your local county EMA for the locations of the emergency workers decon stations.



# PATIENT ASSESSMENT AND TRIAGE

- Follow established local protocols and standards of care in providing patient care
- Local protocols and standards of care may need to be amended/modified to reflect care of contaminated patients
- Needs to be done by local jurisdiction/hospital medical staff
- Patient may have both radiological and non-radiological injuries/medical problems



## **Unstable Patient**

If it is determined that the patient is unstable and requires acute treatment, then he or she should be admitted to the Radiation Emergency Area (REA) and life-threatening injuries should be stabilized

## **Stable Patient**

Survey patient for contamination

If contaminated, admit patient to REA and deliver medical, trauma care

If not contaminated, admit to regular Emergency Department so this saves space in REA and reduces risk of patient contamination.

# REMOVING CONTAMINATED CLOTHING



## **Removing Contaminated Clothing:**

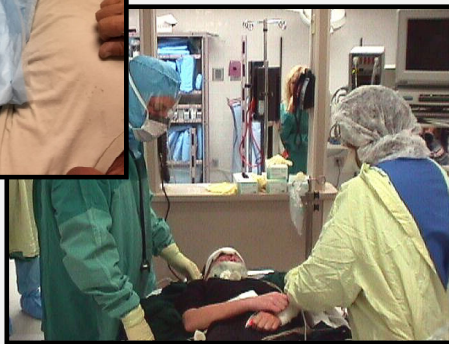
1. Treat life-threatening problems first. Roll any sheeting TOWARDS the CONTAMINATION.
2. Prevent the spread of contamination, especially to the face.
3. Shoes are a likely source of contamination. Remove them using plastic to prevent contact.
4. Slowly cut the clothes from the head toward the feet.
5. Roll clothing, trapping the contamination in the clothing and rolled away from the patient's skin.
6. Roll the patient protecting the cervical spine. Fold the sheet enclosing the clothing.
7. If possible, have the RSO survey the patient's back while on his/her side after clothing has been removed.
8. Gently place all clothing and bedding in a trash bag marked for contaminated waste.

# SAMPLE COLLECTION

- Substances that would normally be discarded should be saved
- Clinical and lab tests are used to assess the biological effects of radiation exposure
- Isotope identification is very important when determining a course of treatment
- Any samples taken should be placed in a sealed container and properly labeled



# TYPES OF RADIATION INJURIES



There are three types of radiation injuries that may be seen in the Emergency Department:

1. External only
2. External and/or Internal Contamination
3. Internal Incorporation

## External Only

- Easiest to remove and least harmful
- 80% of contaminant removed with clothing removal

## Internal

- Radioactive material ingested, inhaled, injected (impaled), or absorbed into body

## Incorporation

- Radioactive material taken into the cells, tissues, and organs

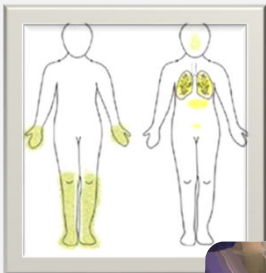
# EXTERNAL IRRADIATION ONLY

## External Irradiation

- Occurs when all or part of the body is exposed to penetrating radiation (gamma/X-ray) from an external source
- Exposure alone does not make patient radioactive
- Irradiated patients present no radiological danger to care givers
- Exposure can be to the whole body or localized



# CONTAMINATION (EXTERNAL OR INTERNAL)



- Occurs when the radioactive material is deposited on or ingested by the patient
- A patient can be contaminated externally, internally, or both
- Inhalation, ingestion, absorption, and injection are methods by which radioactive material can enter the body
- Contaminated patients can present a radiological contamination hazard to care givers
- Wear appropriate PPE

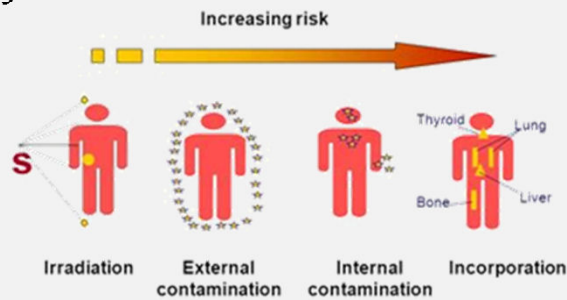
Prior to decontamination, remove the contaminated “dirty” sheet and survey using a radiological instrument the patient’s back for radioactive contamination.



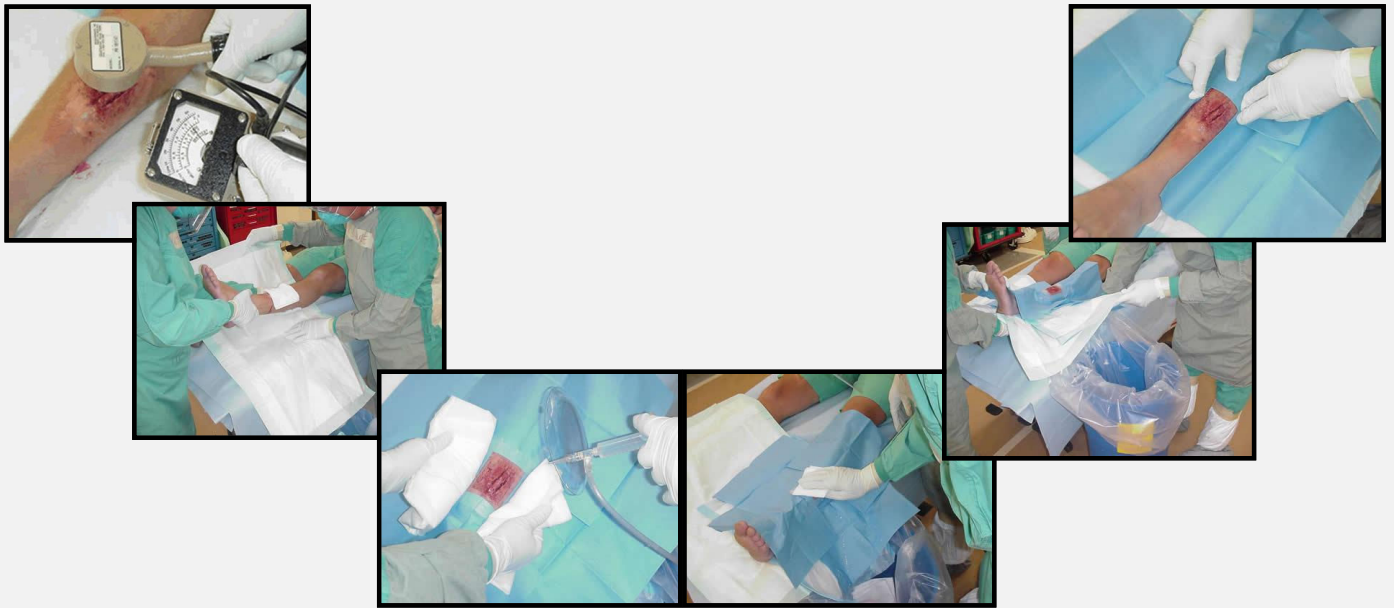
# INCORPORATION (INTERNAL)

## Internal Incorporation

- Refers to the uptake of radioactive material into body cells, tissues, bones, and target organs such as the liver, thyroid, or kidney
- Material distributed throughout the body based on its chemical properties
- Can occur rapidly and is most difficult to remove



# WOUND CARE FOR EXTERNAL CONTAMINATION



External Decontamination is a continuous cycle.

1. Survey the wounds for radioactive contamination.
2. Place an absorbent pad underneath the body to absorb the water/saline during decontamination.
3. To prevent the spread of contamination, drape the wound prior to applying water/saline.
4. Irrigate wound with water (room temp) or saline.
5. Pat dry (do not rub) wound.
6. Remove all drape and absorbent pads prior to resurveying.
7. If contamination levels are still twice background (2 x bkg), follow the steps above.
8. Remember to change gloves after handling patients or potentially contaminated equipment.
9. Avoid unnecessary activity in contaminated areas.
10. Avoid rough handling of contaminated clothes to minimize the creation of an airborne hazard.
11. Avoid touching unprotected skin areas while working with contaminated patients

**REMEMBER:** Consider everything contaminated unless proven otherwise. Use a pancake probe to determine if anything is contaminated or not.

# WOUND INJURY

- Radioactive materials can enter wounds through several mechanisms:
  - Deposition by the object causing the wound
  - Deposition after wounding, such as a splash, spill, or spray
  - Blast injury
  - Crush injury
- Challenging because the radioactive material may be imbedded in the wound
- Survey open wounds with a covered probe
- Gamma-emitting radioisotopes
- Beta-emitting radioisotopes
- Alpha-emitting radioisotopes
  - May require use of special wound probes



## Wound Decontamination

- Consider wounds contaminated until proven otherwise
- Save dressings, drainage, and debrided tissue for isotopic analysis
- A wound with plutonium contamination (or other alpha-emitting material) is difficult to detect
- Specialized probes must be used
- Following decontamination, all wounds should be covered to prevent cross contamination from other area

## Lacerations

- Irrigate with water or saline to remove most of the contamination
- Hydrogen peroxide or Betadine scrubs of wound may be necessary
- Jagged edges of wound may be difficult to fully decontaminate
- Expert consultation should be sought prior to debridement

## Foreign Bodies

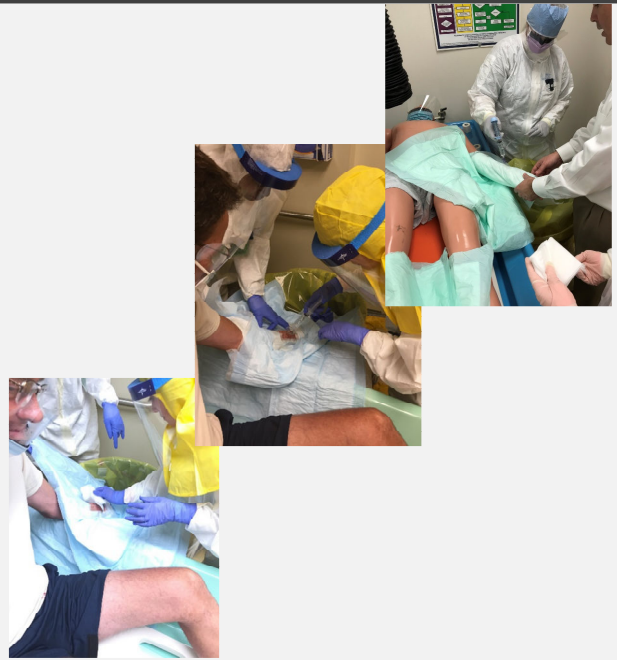
- Treat as any suspected foreign body
- Save for later analysis (place in a leaded container)
- Shrapnel from radiological dispersal device or other radioactive source may be highly radioactive and should be surveyed by trained personnel

## Orifices – Mouth or Nose

- Sample with swabs under tongue and between gums
- Use a separate moist swab for each nostril. Label each sample from which nostril
- Blow nose gently
- Saline lavage: Head forward, keep saline out of mouth, pharynx - High likelihood of swallowing
- Remove any foreign objects
- For mouth, brush teeth, gargle, rinse mouth and spit. **AVOID SWALLOWING**

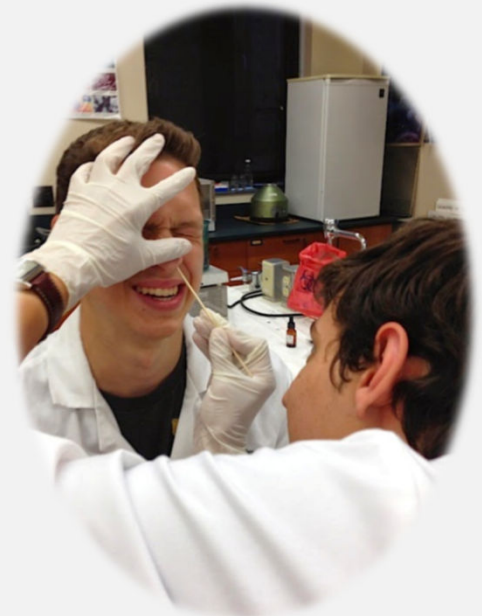
# A GUIDE TO DECONTAMINATE INTACT SKIN

1. Removing clothing will remove majority of contamination
2. Sample contaminated areas with moistened gauze or swabs
3. Isolate contaminated area with waterproof drapes
4. Use least aggressive method for decontamination so as not to abrade the skin
  - a. Use 4x4 for small areas
  - b. Irrigate with lukewarm water
  - c. Gently scrub skin with soap and warm water
  - d. Use bleach diluted 10:1 on intact skin
  - e. Use cornmeal/detergent mix on calloused areas
5. Decontamination is a repetitive process



# DETECTING INTERNAL CONTAMINATION

- To rapidly detect internal contamination and/or incorporation, check for one or more of the following:
  - History of splash/spray, etc. with radioactive material
  - Contamination in or near portals of entry—mouth, nose, wounds, etc.
  - Contamination found in emesis, sputum, urine, feces, saliva etc
- Not finding contamination in initial sputum or urine does not rule out the presence of internal contamination



The following methods take longer to detect internal contamination/incorporation using the samples collected:

- 24-hour urine and feces collections
- Repeat sputum collections
- Whole body counting
- Symptoms of toxicity from the radioactive material, such as heavy metal poisoning from uranium or plutonium, can be detected



## TREATMENT FOR INTERNAL CONTAMINATION

- Three basic strategies for the removal of internally contaminating radioisotopes are to:

1. **Decrease absorption from gut**
2. **Dilute isotope and block incorporation**
3. **Administer mobilizing agents**



### 1. DECREASE ABSORPTION FROM GUT

- Gastric lavage - timing, forcing through pylorus
- Barium sulfate - radium and strontium
- Al and Mg salts - decreases absorption of radium and strontium
- Prussian blue - cesium, thallium
  - Included in the Strategic National Stockpile
- pH adjustment - changes solubility of some compounds



## 2. DILUTE ISOTOPE & BLOCK INCORPORATION



- Isotopic dilution
  - Administering large amounts of the stable isotope of the same element to increase excretion of radioisotope
  - Works well for tritium
  - Water, IV fluids, other oral fluids
  - Maintain copious urine output
- Block incorporation
  - Saturate the target tissue/organ with the stable isotope to reduce uptake of the radioisotope
  - Radioiodine is the prototype for use

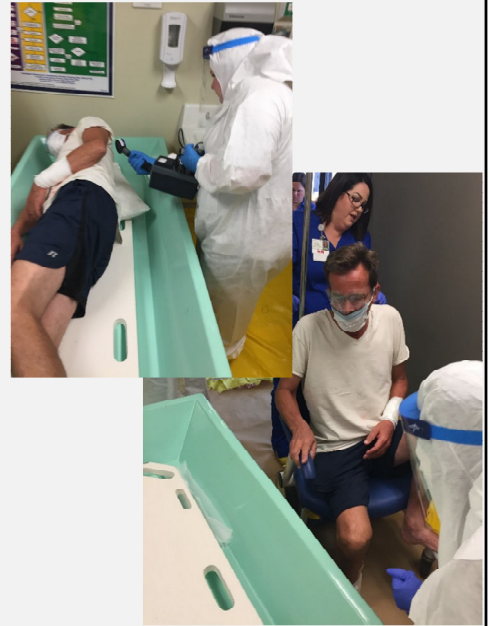
## 3. MOBILIZING AGENTS

- Mobilizing agents
  - Chemicals that enhance elimination of the radioisotope from the body
  - Chelation (EDTA, DTPA, etc.) for heavy metals/transuranics
  - Diuretics used to increase excretion of electrolytes



# DISCHARGING THE PATIENT

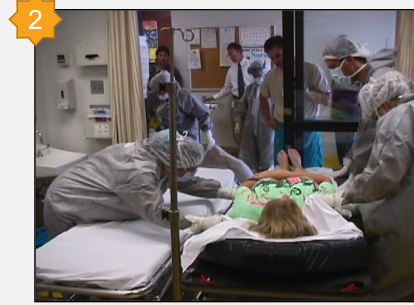
- Following decon, thoroughly survey patient
- Replace gurney sheets
- Transfer patient to a clean stretcher with the help of “clean” assistants
- Have RSO perform final check of patient and stretcher before removing stretcher from REA
- After final approval, wheel patient out of the REA
- Alternate lateral transfer to a clean gurney may also be used



Patient decontamination is just one step in the decontamination process. Following decontamination, the patient and staff still need to exit the REA.

A final survey should be conducted prior to leaving the decontamination room. Remove the sheets and replace with a clean sheet to be used to transfer the patient to a clean stretcher. While the patient is rolled, conduct a final survey of the back.

# PATIENT MOVEMENT OUT OF REA

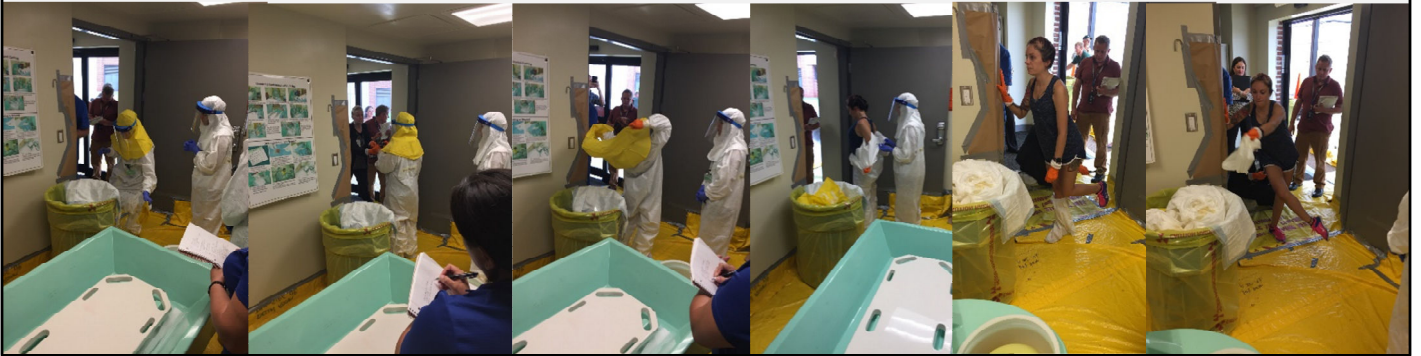


When contamination levels have been reduced to below twice background ( $<2 \times$  bkg) and patient's injuries have been assessed, the patient should exit the decontamination room. To prevent cross contamination, a strip of craft/butcher paper should be placed on the decontamination room floor to allow the entry of the clean stretcher. The patient should then be transferred to the clean stretcher. Prior to exiting the decontamination room, RSO or designee should survey the stretcher wheels for contamination.



# EXIT OF HOSPITAL PERSONNEL

- Carefully remove protective clothing at control line
- Protective clothing should be removed in a step-by-step process. Follow the doffing instructions
- Step across control boundary once protective clothing is removed and perform a total-body survey
- Take a shower and redress in normal attire



Each decontamination room personnel will take their turn in properly removing the anti-C clothing while exiting the decontamination room. To properly remove the anti-C clothing and equipment and to eliminate unnecessary cross contamination, follow the “Radiation Accident Protocol Exit of the Decontamination Team” poster.

Please note: If personnel needs assistance with removal of coveralls, etc, assistance can be given but make sure that clean latex gloves are worn. Also, to assist with balance, a metal non-fabric chair should be used.

Once each decontamination room personnel has completely exited the decontamination room, the RSO will conduct a total-body survey to verify no contamination is present. If contamination is found, the personnel will be instructed to remove their clothing and shower with a mild soap and shampoo and return to be resurveyed.

# FINAL CLOSE OUT OF REA

To close out the REA, everything must be surveyed to ensure it is not contaminated and then decontaminated if necessary

Decontamination of equipment can be very technical, and a licensed contractor should be consulted.



Consult with law enforcement before initiating cleanup actions if incident was the result of a terrorist or criminal act—evidence preservation.

Who is responsible for cleanup costs?

## RADIATION EMERGENCY ASSISTANCE CENTER/TRAINING SITE (REAC/TS)

### CONTACT APP



**24-Hour Emergency Phone:**

**865-576-1005**

**Ask for REAC/TS**

**Normal Work Hours Phone:**

**865-576-3131**

**On the Web:** [orise.orau.gov/reacts](http://orise.orau.gov/reacts)

The REAC/TS RadMed App includes...

- Updated eGuide for The Medical Aspects of Radiation Incidents
  - Basic health physics and dose estimation (US and SI Units)
  - Treatment of whole body and acute local radiological illnesses and injuries
  - Assessment and treatment of internal contamination with radioactive materials
  - Patient decontamination
  - Delayed effects of exposure to ionizing radiation
  - Risk and psychological issues
- Dickey chromosome assay (DCA)
- State, federal and international resource database
- Assessment tools for radiation incident preparedness
- REAC/TS courses
- REAC/TS videos
- Real-Time REAC/TS news
- Links to partner resources



The REAC/TS staff are available 24 hours a day/seven days a week to deploy and provide emergency medical consultation for incidents involving radiation anywhere in the world. REAC/TS is recognized for its expertise in the medical management of radiation incidents.

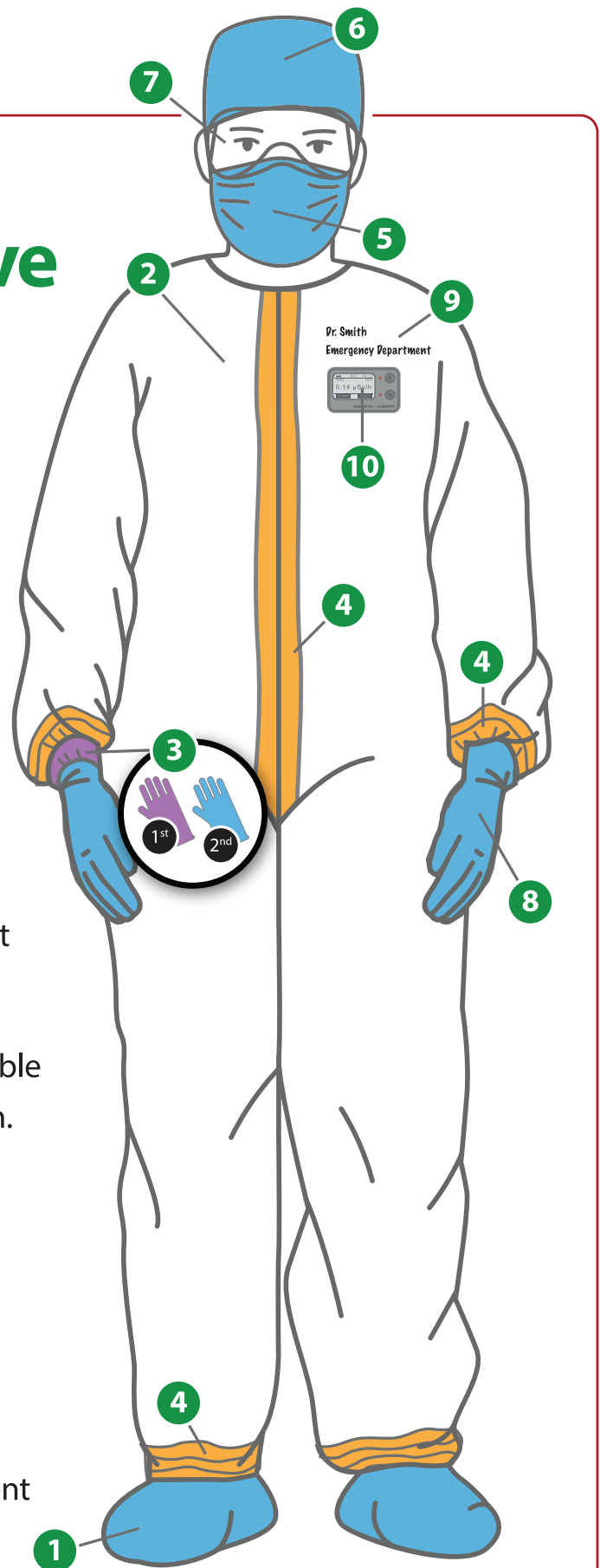


# REAC/TS

Radiation Emergency  
Assistance Center/Training Site

## Putting on Protective Clothing (Donning)

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



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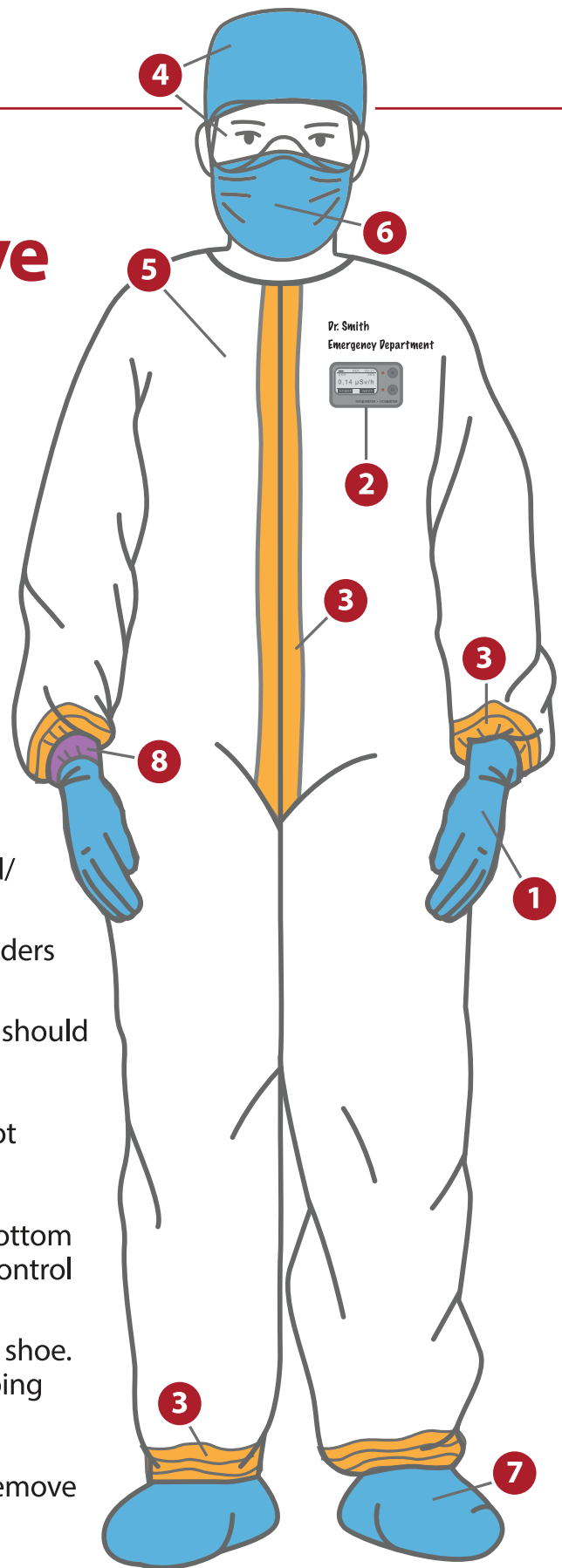
# REAC/TS

Radiation Emergency  
Assistance Center/Training Site

## Removing Protective Clothing (Doffing)

The outside of all protective clothing should be considered contaminated.

- 1 Remove outer gloves, turning them inside out as they are pulled off.
- 2 Give dosimeter to the control line person.
- 3 Remove all tape at sleeves, trouser cuffs, and zipper (as applicable).
- 4 Remove head cover and face shield/goggles, pulling them back and away from the face.
- 5
  - Coveralls: Unzip and remove by folding outward/downward, leaving shoe covers in place
  - Protective Gown: Pull away from the neck/shoulders and remove by turning inside out
  - Only the inside of protective coveralls or gowns should be touched.
- 6 Remove mask by grasping earpieces or ties. Do not touch the front of the mask.
- 7
  - Remove shoe cover from one foot and survey bottom of shoe. If not contaminated, place foot across control line onto step-off area.
  - Remove other shoe cover and survey bottom of shoe. If not contaminated, stand in step-off area, keeping hands inside the control line.
- 8 While keeping hands inside the controlled area, remove inner gloves and place them in the contaminated trash receptacle.
- 9 Perform a head-to-toe radiological survey before leaving the step-off area.



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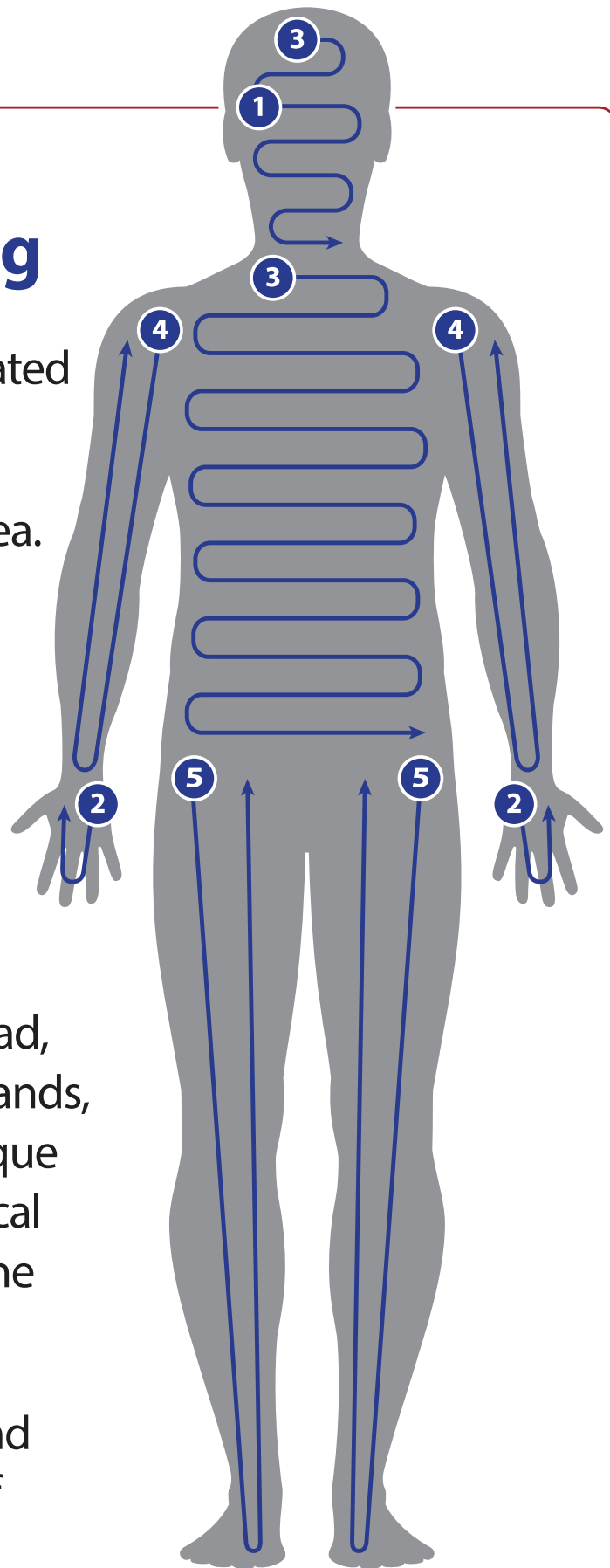


# REAC/TS

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## Personnel Monitoring

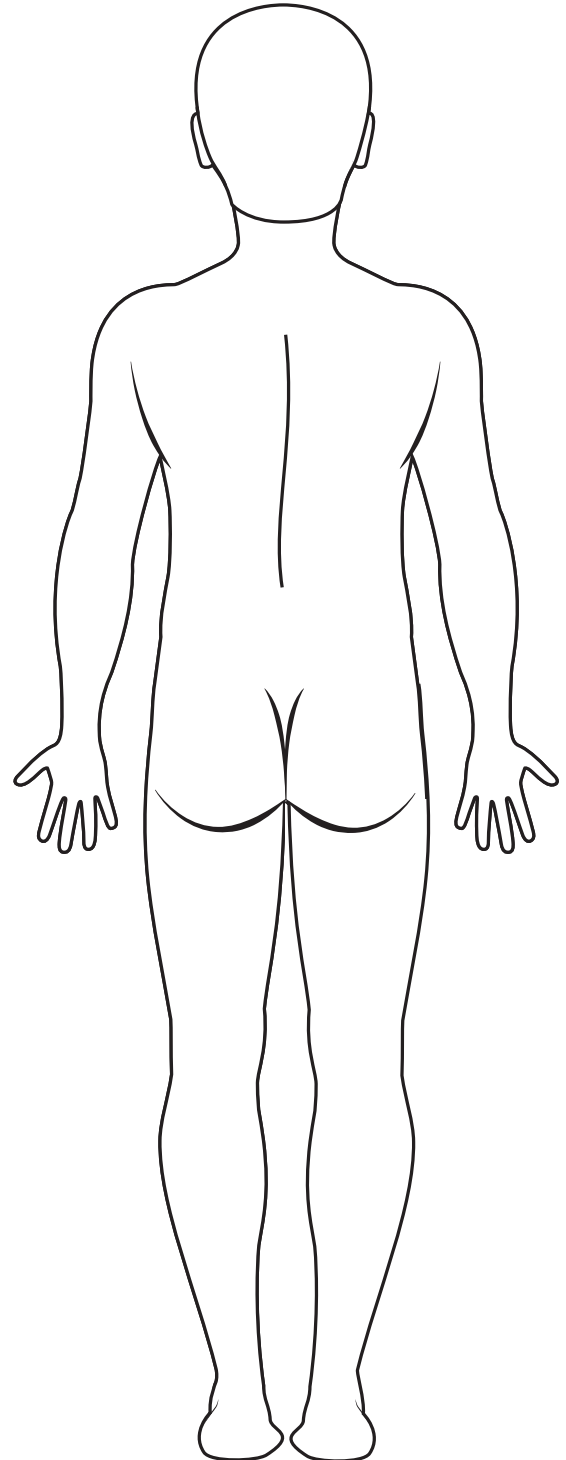
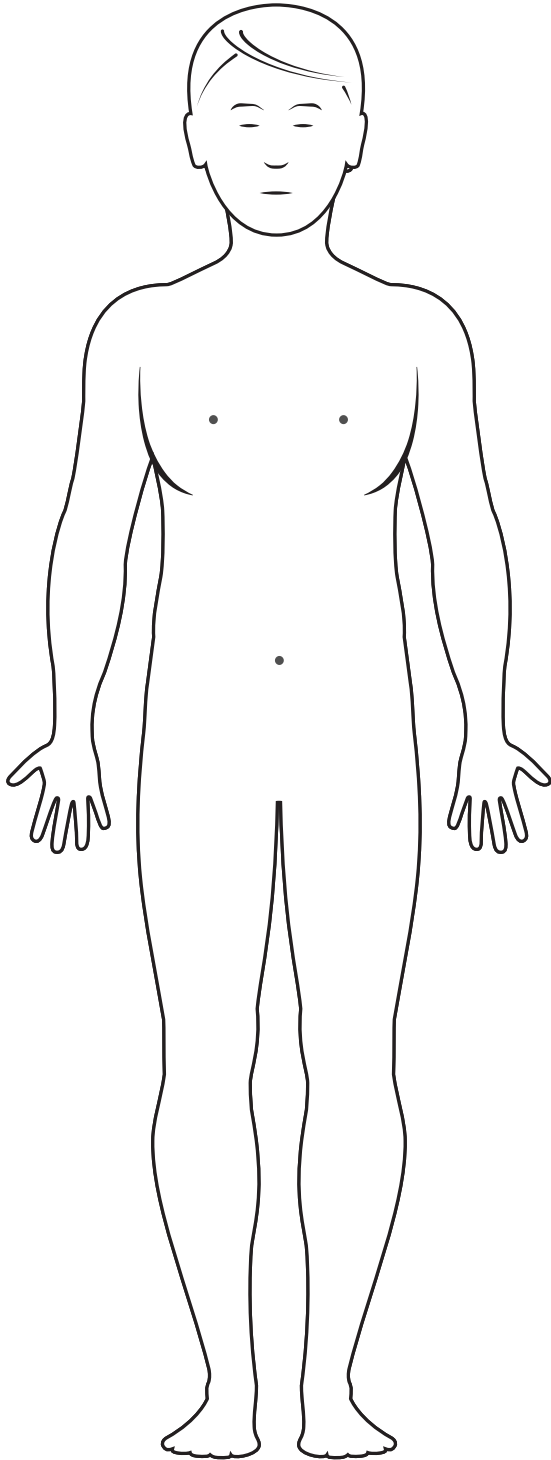
- Before stepping from contaminated area, survey soles of feet.
- Have person stand in step off area.
- Instruct the person to stand straight, feet spread slightly, arms extended with palms up and fingers straight out.
- Survey ① face and ② hands.
- Survey from the ③ top of the head, covering the torso, ④/② arms/hands, and ⑤ legs. Good survey technique is essential. Use a slow, methodical technique to monitor 100% of the body surface area.
- Have the person turn around, and repeat the survey on the back of the body.



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# Patient Radiological Survey Sheet

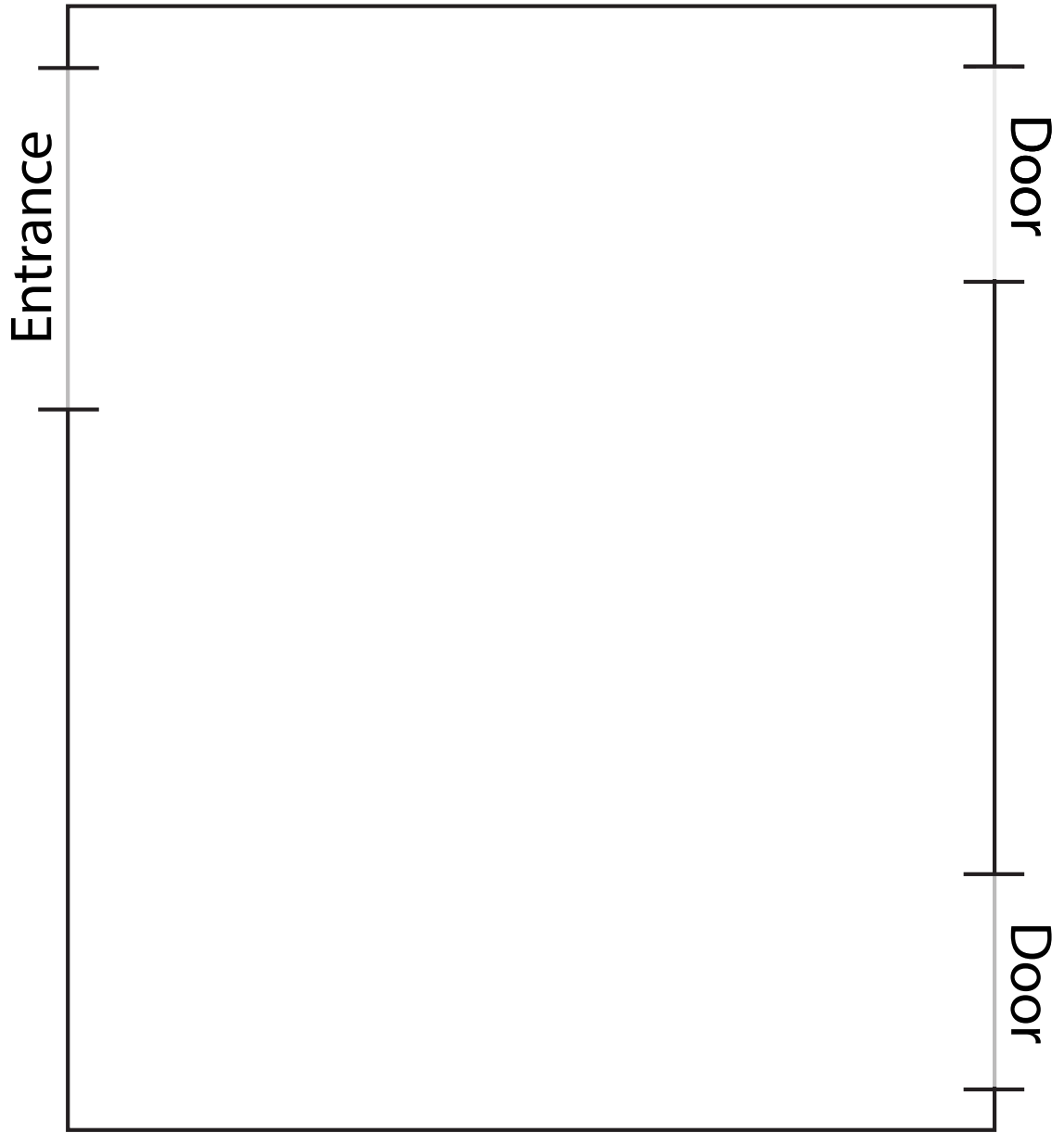
Patient Name:		SSN/ID Number:			Date:	
Instrument ID:	Calibration Date:	Battery Check:	Response Check:	Background:	Nasal Swabs: (R)   (L)	
Survey Completed By:			Signature:			



# Area Radiological Survey Sheet

Area(s):				Date:
Instrument ID:	Calibration Date:	Battery Check:	Response Check:	Background:
Survey Completed By:			Signature:	

- Perform survey instrument checkout process
- Be systematic
- Focus on high-touch areas
- Document on survey sheet



Comments:

# RADIOLOGICAL EMERGENCY ASSISTANCE CONTACTS

USE FOR INCIDENTS INVOLVING RADIOACTIVE MATERIAL

**24-hour  
State EOC Communication Center  
(205) 280-2310  
(800) 843-0699**

If contact is not established, please call:  
Alabama Radiation Control Duty Officer  
**(334) 324-0076**

For additional contacts, please call the following:  
**Radiation Control Office  
(334) 290-6244 • 1 (800) 582-1866**

<b>NAME</b>	<b>CELL</b>
David Turberville	(334) 314-6323
Myron Riley	(334) 224-4035
Nick Swindall	(334) 322-8397
Kevin Hicks	(334) 314-6326
Cason Coan	(334) 320-3457
Undria McCallum	(334) 296-2105

***\*Current as of  
January 1, 2022***

***\*Destroy all  
Earlier Editions***

Alabama Department of Public Health  
Office of Radiation Control  
Prattville, AL

# 22

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