

# HANDLING OF RADIATION ACCIDENT VICTIMS

## PURPOSE

These procedures provide guidelines for the handling, isolation, decontamination and exposure evaluation of individuals requiring emergency medical treatment following accidental exposure to radioactive contamination and/or to external radiation sources. They are **specific for the Emergency Department (ED)** of the University of Utah Hospital and are intended to prevent unnecessary exposure to ED personnel and to prevent contamination of ED equipment and facilities.

## IMMEDIATE NOTIFICATIONS

As soon as word is received that a patient will be arriving, or as soon as the patient arrives at the ED, **notify immediately at least one individual in each of the following categories:**

### PERSONNEL TO BE NOTIFIED IMMEDIATELY

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	<u>DAY</u>	<u>NIGHT</u>	<u>PAGER</u>
<b><u>Emergency Department</u></b>			
ED Charge Nurse	581-2291	(day or night)	
Attending Physician	581-2291	581-2291	339-2173
Emergency Management Coordinator	585-3134		339-5720
<b><u>Radiation Safety Officer (RSO)</u></b>			
Attempt to contact in the order listed:			
Byron L. Hardy	581-6141	943-6530	
Karen S. Langley	581-6141	944-1891	
James J. Thompson	581-6141	466-1762	
John H. Moeller	581-2396	571-5679	
<b><u>Security</u></b>			
	581-2295	(day or night)	
<b><u>Hematology</u></b>			
Dr. James P. Kushner	585-1554	943-0174	339-5203
Hematology Fellow on call	581-2291		request page

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## **RADIATION EMERGENCY EQUIPMENT**

- 1 A **Radiation Emergency Kit** is located in the Trauma Room on top of the blanket warmer. The kit contains:
  - a Survey meter
  - b Direct-reading dosimeters and charger
- 2 A portable lead shield is available from the Sixth South Nursing Station.
- 3 Absorbent, plastic-backed sheeting is available from the Radiopharmacy.

## **PATIENTS CONTAMINATED WITH RADIOACTIVE MATERIAL**

### **Evaluation of Patient's Contamination Status**

- 1 **Lifesaving care** of critically injured accident victims takes priority over all other considerations. Patients will be treated in the trauma room, using the contamination control precautions described below.
- 2 The type of accident should be determined as quickly as possible. Write down any information provided by the accident victim or witnesses and give it to the Radiation Safety Officer (RSO) as soon as he arrives.
- 3 Persons with **known or suspected contamination from radioactive materials on or in the body**, and attending personnel who have come in contact with these patients, must be surveyed by the RSO to determine the extent of contamination.
- 4 Identify contaminated patients or attending personnel with radioactive material warning tape or labels until decontamination has been completed.

### **Facility Contamination Control**

- 1 Extreme care should be used to prevent the possible spread of contamination. Avoid transporting possibly contaminated patients or personnel through hospital. Critically injured patients should be treated in the ED trauma room. All others should wait outside the ED and have their movements restricted until they are surveyed.

- 2 Restrict traffic flow into and out of areas with known or suspected contamination and limit access to essential personnel. Survey all individuals leaving these areas.

### **Attending Personnel Exposure and Contamination Control**

- 1 **Minimize** the number of attending personnel.
- 2 Attending personnel must wear **protective clothing** (surgical gowns, masks, caps, gloves) obtainable from the ED supply room.
- 3 If the exposure rates to attending personnel exceed 50 mR/hr, **direct-reading dosimeters** should be worn, preferably under the protective clothing. It may also be necessary to obtain and use the **portable lead shields** as directed by the RSO.
- 4 Personnel coming in contact with contaminated patients must be surveyed for contamination before leaving the immediate area.

### **Patient Care and Dosimetry**

- 1 Collect nasal swabs or nose blowings, urine, feces and possibly gastric contents for analysis to determine the possibility of internal contamination.
- 2 Decontamination or gastric lavage procedures, if required, are to be done in the **decontamination shower** located just within the ambulance entrance to the ED, under the supervision of the RSO. If necessary to perform elsewhere, the floor should be covered with plastic-backed absorbent pads.
- 3 Remove the patient's clothing completely and retain in a plastic bag for analysis and decontamination.
- 4 Wash the skin with warm soap and water, until decontamination is considered adequate by the RSO.

## PATIENTS WITH HIGH EXTERNAL RADIATION EXPOSURES

- 1 Patients found by the RSO not to be contaminated may receive normal care under the direction of the supervising surgical resident and the hematologist.
- 2 Patients that were exposed only to external radiation sources, e.g. x-ray machines, particle accelerators, sealed radioactive sources, radiation therapy machines, neutron sources, etc. pose **no risk to attending personnel** and may be handled in routine fashion.
- 3 If the exposure is not known, or if it is estimated to exceed 25 rem to a major portion of the body, the victim must be admitted to the hospital for observation of possible radiation effects.
- 4 Blood samples may be requested by the hematologist for white cell counts.
- 5 For patients receiving **neutron** exposures, blood and urine should be collected for radioassay. Rings, watches, and other metal objects also should be collected for activation analysis.

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## ADDITIONAL PERSONNEL TO BE INFORMED IN RADIATION ACCIDENT CASES

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	<u>DAY</u>	<u>NIGHT</u>
Hospital Administration:		
Patient Care Services Administrator "on call"	581-2121 request page	581-2121
For patients having accidentally ingested or inhaled radioactive materials:		
Nuclear Medicine Physician (on call)	581-2370	339-5858 (beeper)
Nuclear Medicine Technician (on call)	581-2370	339-4955 (pager)
For patients exposed to x-ray machines, linear accelerators, or other external sources; also internal sealed sources (Iridium, Iodine, Cesium):		
Greg Patton, M.D. (Radiation Oncologist)	581-2396	583-2121 request page
David Gaffney, M.D. (Radiation Oncologist)	581-2396	request page
W.W. Orrison Jr., M.D. (Radiologist)	581-8699	888-332-0398(pager)
Edwin A. Stevens, M.D.	581-8699	888-332-0406(pager)
For serious accidents:		
To be contacted by the RSO:		
Utah Division of Radiation Control	536-4250	
Nuclear Regulatory Commission	1-817-860-8100	

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