LOS ANGELES COUNTY DEPARTMENT OF HEALTH SERVICES
HARBOR-UCLA MEDICAL CENTER

SUBJECT: RADIATION PROTECTIVE DEVICES - LEAD APRONS, GONADAL SHIELDS AND GLOVES **POLICY NO.** 470A

CATEGORY: Provision of Care	**EFFECTIVE DATE:** 1/19
POLICY CONTACT: John Shim, MD	**UPDATE/REVISION DATE:** 3/22
REVIEWED BY COMMITTEE(S): Radiation Safety Committee	

PURPOSE:
To identify the requirements and responsibilities for proper storage, cleaning, inspection and disposal of radiation protective devices.

DEFINITIONS:
- **Radiation Protective Devices:** In this policy, radiation protective devices are defined as specially designed and constructed personal protective equipment used to shield the wearer/user – patient or staff -- from radiation exposure. Examples include lead equivalent aprons, vests, skirts, gonadal shields, thyroid collars, gloves.
- **Radiation Protective Devices List (Inventory):** The Medical Center's inventory list of radiation protective devices. This inventory identifies – at a minimum -- the type of device, the owner/user department, the unique inventory identification number assigned to each device, and the dates of annual inspection/integrity testing. The Radiation Safety Department has ultimate responsibility for maintaining this inventory list.
- **Departmental Radiation Safety Liaison:** A specific individual with responsibility for assisting Radiation Safety Office staff with ensuring compliance with this policy, including maintenance of the inventory and performance of inspection/integrity testing. Each department that purchases/routinely uses radiation protective devices is responsible for appointing such a liaison and ensuring that the liaison actively cooperates with the Radiation Safety Office staff.

POLICY:
Harbor-UCLA Medical Center shall ensure compliance with federal, state, and local radiation protection statutes by:
- Using standard methods of personal radiation protection and complying with applicable federal, state, and local rules, regulations, and laws to maintain radiation exposure levels to **A**s **L**ow **A**s **R**easonably

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APPROVED BY:

Anish Mahajan, MD
Chief Executive Officer
Chief Medical Officer

Griselda Gutierrez, MD
Associate Chief Medical Officer

Jason Black, MBA, DNP, RN
Chief Nursing Officer

Achievable (**ALARA**) levels.

- Ensuring inventory control by centralizing the labeling, logging and disposal of all radiation protective devices (lead equivalent aprons, thyroid collars, gonadal shields, and gloves).
- Ensuring proper cleaning and storage of all radiation protective devices.
- Ensuring that all new and used radiation protective devices used at the Medical Center undergo inspection and integrity checking, at least annually.
- Ensuring departments that purchase/use radiation protective devices appoint a Radiation Safety Liaison who is responsible for assisting the Radiation Safety Office staff with:
  1) maintaining an accurate inventory of radiation protective devices,
  2) ensuring that these devices undergo initial and annual inspections/integrity checks in a timely and efficient manner, and
  3) ensuring that these devices are properly disposed of when they become damaged or reach the end of their useful life.

PROCEDURE:

I. ACQUISITION AND RECEIPT

A. Notification and Physical Control of Newly Received Radiation Protective Devices

Supply Chain Operations (SCO) is responsible for notifying Radiation Safety Office staff when a new radiation protective device has been received by the warehouse. SCO warehouse staff shall maintain physical possession of these devices until the Radiation Safety Office staff collect and remove the devices for inventory and inspection/integrity testing purposes.

B. Documentation of Receipt/Disbursement of Radiation Protective Devices

SCO is responsible for maintaining documentation of the receipt of these devices from the vendor and for disbursement to the Radiation Safety Office staff.

C. Inventory Documentation of New Radiation Protective Devices

The Radiation Safety Office is responsible for adding documentation about the device into the Radiation Protective Devices List (inventory). Radiation Safety Office staff shall indelibly label each new device with a device-specific inventory identification code. Additionally, for each new device, the Radiation Safety Office staff shall document in the inventory at minimum the type of device, the user/owner department, the device-specific inventory identification code, and the date of the initial device inspection/integrity check.

II. INSPECTION AND INTEGRITY CHECKING

A. Timing

1. All radiation protective devices shall undergo documented inspection and integrity checking:
   a. Upon initial receipt for use in the Medical Center.
   b. Annually, the Radiation Safety Office staff shall use the Radiation Protective Devices List (inventory) to identify when each device is to be tested, and – in cooperation with user department radiation safety liaisons -- to ensure the performance of documented inspection and integrity testing.
   c. Whenever damage to the integrity of the shielding is known or suspected.

B. User Department Responsibilities

1. Assign a radiation safety liaison to actively cooperate and coordinate with the Radiation Safety Office and the Radiology Department to ensure compliance with this policy.
2. The radiation safety liaison shall:
   a. Inventory Maintenance
      - Maintain an accurate inventory of the department's radiation protective devices. Send a copy of this inventory annually to the Radiation Safety Office and the Radiology Department staff PRIOR to the annual radiation inspection and integrity check.
      - Notify the Radiation Safety Office staff as soon as the department becomes aware of a radiation protective device that is not on the department's inventory. Then, promptly deliver the device as directed by the Radiation Safety Office for inventory identification, code labeling, and inspection/integrity testing.
   b. Routine/Scheduled Inspection/Testing
      - Make readily available and deliver for inspection all of its radiation protective devices on a date mutually agreed upon with the Radiation Safety Office staff. These radiation protective devices are to be delivered to the Radiology Department for this inspection.
   c. Device Replacement and Removal from Service
      - Notify Radiation Safety Office staff as soon as the department becomes aware of a radiation protective device that is suspected of being damaged. Then, promptly deliver the device as directed by the Radiation Safety Office for inspection/integrity testing.
      - Order a replacement device, as appropriate, for any radiation protective device that is removed from service due to inspection failure or device age. As a general rule, each radiation protective device should be replaced at least every 10 years. Notify the Radiation Safety Office and Hazardous Materials Office staff BEFORE disposing of a radiation protective device. Many of these devices contain lead or other hazardous materials that require special handling and disposal. Under no circumstances should one of these devices be disposed of via ordinary trash.

C. Radiation Safety Office Responsibilities

The Radiation Safety Office has overall responsibility for coordinating inspection and integrity checking of each radiation protective device and for performing inspection and integrity checks as a joint effort with the Department of Radiology.

D. Inspection and Integrity Checking Techniques

Radiation Safety Office staff (or appropriately trained Radiologic Technologist designee) shall:

1. Visually inspect the radiation protective device for:
   a. Compliance with required inventory identification number labeling. **Any unlabeled radiation protective device will be confiscated by the Radiation Safety Office or Department of Radiology**.
   b. External physical damage.
2. Check the radiation protective device under fluoroscopy for internal damage.

E. Documentation of Inspection/Test Results

1. Inspector shall:
   a. Record the results of the inspection/test – Passed (P), Failed (F), or Disposed of (D) -- on the

Radiation Protective Devices List.

b. Record on each radiation protective device that passes inspection, the month and year that the device was tested.

F. Removal of Failed Device

1. The Radiation Safety Office or Radiology Department staff shall:
   a. Immediately remove from service any device that fails inspection.
   b. Notify the user department that the device has been removed from service.

III. STORAGE AND CLEANING OF RADIATION SAFETY DEVICES

A. Storage

Proper storage of radiation protective devices is essential to prolong the life of these devices, to help ensure personal protection, and to avoid contamination.

1. Hang aprons on wall-mounted or portable hangers and/or hanger bar units.
   a. Never leave an apron or any radiation protective device crumpled, folded, or tossed in a heap.
   b. Don't overload the with wall-mounted or portable hangers with too many aprons.
   c. Don't let the aprons touch the floor at any time.
2. Store radiation protective devices in conspicuous places and encourage their use.

B. Cleaning and Disinfection

1. In order to prevent the spread of infection, if the radiation protection device becomes contaminated with blood or bodily fluids:
   a. Clean the device as soon as possible with soap and water to remove any bioburden. Immediate cleaning will also help to avoid staining of the material.
   b. Follow cleaning with the use of a hospital-approved disinfectant (such as disinfectant wipes) that is compatible with the device, per the device's manufacturer guidelines. Ensure that the proper "wet time" of the disinfectant is observed.
   c. Allow the device to air dry before returning to storage area.
   d. Protective devices that are worn during the care of a patient in transmission-based precautions must also be disinfected immediately after use, and before returning to the storage area.

2. Routine Cleaning and Disinfection
   a. Routine cleaning and disinfection should be performed on all radiation protection devices.
   b. Departments should perform a risk assessment to determine the frequency that this should occur. Areas with higher use and/or higher risk of blood/body fluid exposure would require more frequent routine cleaning and disinfection.
   c. A cleaning schedule and log book should be maintained in the department as documentation of compliance.