

FACILITY NAME

POLICY/PROCEDURE: Brachytherapy:

Emergency Procedures for Radioactive Material

POLICY #

DATES: START

REVIEWED

REVISED

DEPARTMENT REPRESENTATIVE:

FACILITY ADMINISTRATOR:

MEDICAL DIRECTOR:

MEDICAL PHYSICIST:

POLICY/PURPOSE:

It is the policy of this facility to provide guidelines for the safe operation and control of radioactive materials and to provide proper response to emergency and abnormal situations. The following emergency procedures will be followed as emergency situations arise involving radioactive materials.

PROCEDURE:

1. Dislodged or dispelled radioactive sources:
 - a. If a source applicator dislodges and changes positions, contact the Radiation Safety Officer (RSO), Medical Physicist and the Radiation Oncologist. The sources may need to be removed so that the applicator can be adjusted.
 - b. If the sources or source applicator becomes dispelled from the patient:
 - i. Use the long handled forceps to place the sources or applicator into the lead container.
 - ii. Move the lead container or source holder away from the patient.
 - iii. Contact the RSO and/or Medical Physicist as soon as possible.
2. Loss of radioactive source or seed:
 - a. Contact the RSO and the Medical Physicist immediately.
 - b. Qualified staff (staff completing the emergency section of the Brachytherapy Skills Checklist) will use a G.M. counter to search for the lost source/seed.
 - c. Do not remove any bandages, linen, bedding, trash, etc. from the area until they have been surveyed.
 - d. Once the source/seed is found, it should be placed in a lead container using the long forceps.
 - e. If the source/seed is not found, the appropriate federal and state agencies will be notified immediately by the RSO.
3. Damage to a radioactive source or seed:
 - a. If a source or seed has been damaged due to rough handling, high temperature or crushing, leakage or rupturing could occur. The area should be closed off and the RSO should be notified immediately.
 - b. Shut off all fans and ventilators.
 - c. Drop damp towels on the suspect material. Do not throw anything away.

- d. The qualified medical physicist (one who meets the state and federal regulations for source handling) will place the seed into a lead container using the long forceps.
 - e. The area should be decontaminated, if necessary.
 - f. A wipe test will be performed to ensure the decontamination was successful
4. Spill of radioactive materials:
- a. Close off the area and post a "Radioactive Materials" sign. No one will be permitted in the area.
 - b. Contact the RSO.
 - c. Any fans, ventilators or air conditioners operating in the area should be turned off.
 - d. Qualified staff (staff completing the emergency section of the Brachytherapy Skills Checklist) will follow these instruction to clean the spill:
 - i. Confine the spill by dropping large quantities of paper towels onto it and blotting
 - ii. Put on protective gear (rubber gloves, protective gowns, safety eyewear, shoe covers)
 - iii. An uncontaminated person will obtain a survey meter and determine background reading in a non-contaminated area
 - iv. Scrub the area with decontaminants and detergents
 - v. Blot the area dry with clean paper towels
 - vi. Perform a wipe test to confirm the decontamination.
 - vii. If the exposure is still above background, repeat the washing process
 - viii. If the exposure level cannot be reduced, mark the area with red tape, cover with absorbent paper and label as contaminated area (exposure level, time and isotope). Notify personnel to stay clear of the area. Allow area to decay to background level before returning area to normal use.
 - ix. Place all of the cleanup materials in the appropriate container, seal, label and take to the decay storage area.
 - x. If shoes appear contaminated, remove before leaving the area. If feet are contaminated a washbowl and soap should be brought to the area for clean up.
 - e. All personnel involved in the spill and the cleanup will survey their hands, feet and clothing for contamination. Gently wash skin with soap and water until background levels are reached. The cleanup area must be treated as contaminated until cleared by the RSO.
 - f. Document the spill incident, recording the date, isotope, amount spilled, final exposure and background readings and the name of personnel involved in the cleanup. A report should be given to the RSO.
5. HDR source malfunction:
- a. See the policy for *HDR Emergency*
6. CVBT source malfunction:
- a. Follow the vendor recommended instructions using the bail out box to store sources and catheters in.

7. Emergency resuscitation for the radioactive patient:
 - a. Notify the RSO after notifying the resuscitation team
 - b. Resuscitation procedures will be performed without regard to the radiation
 - c. The resuscitation team will be limited to the minimum team members necessary to perform the procedure (any pregnant members will be excluded, if possible)
 - d. The team will stand back away from the patient when possible
 - e. The radioactive sources will be removed as soon as the situation permits
 - f. A list of the team involved will be documented
 - g. Team members with a film badge will wear them