

# Protecting Children and Infants from Exposure to Radiopharmaceuticals Associated with Patient Care



## WHAT ARE RADIOPHARMACEUTICALS?

Radiopharmaceuticals are radioactive compounds used in a wide range of medical treatments that are meant to improve the health of individuals. One of the more common radiopharmaceuticals in use today contains radioactive iodine -131, or “I-131”.

## WHAT ARE THE CONCERNS ABOUT EXPOSURE TO CHILDREN RESULTING FROM CONTACT WITH PATIENTS TREATED WITH RADIOPHARMACEUTICALS?

The International Commission on Radiological Protection recently reported that the internal dose to the thyroid for infants and young children who may come in contact with a patient recently administered therapeutic quantities of I-131, such as oral sodium iodide I-131, could result in significant doses to the child’s thyroid and potentially raise the risk of subsequent radiation-induced thyroid cancer.

## WHAT IS MDPH DOING TO NOTIFY HEALTHCARE PROVIDERS OF HEALTH CONCERNS?

The Massachusetts Department of Public Health’s Radiation Control Program (MDPH/RCP) has issued an information notice

to medical licensees who are in the practice of administering I-131, advising them of concerns and actions that should be taken to reduce exposure to I-131.

## RECOMMENDATIONS IN THIS DOCUMENT INCLUDE:

Patients who have received therapeutic I-131 treatments should:

- Avoid direct or indirect contact, including shared living space with infants and young children (e.g., consider having children stay outside the home or with other family members) for a specific period of time, in general a few days, but patients should ask their health care providers.
- Have adequate living space at home that can be used only by the patient (e.g., a bedroom) for a specific period of time, in general a few days, but patients should ask their health care providers.
- Understand the potential for increased risk of thyroid cancer in children exposed to therapy patients if the physician’s recommendations are not followed.

Hospitals should consider not releasing patients following therapeutic treatment with I-131 if there might be a risk of exposure to children or infants at home.

## WHAT OTHER REGULATORY CONCERNS ARE ASSOCIATED WITH PATIENTS RECEIVING RADIOPHARMACEUTICAL TREATMENT?

After receiving treatment or diagnosis with radiopharmaceuticals (including, but not limited to those containing I-131), many patients return home and contaminated items are often thrown out in household trash. While hospitals often instruct patients on how to

prevent radioactive contamination from bodily fluids (e.g., saliva, urine, and blood), and the materials that could become contaminated from contact with them (e.g., facial tissues, incontinence diapers, sanitary napkins, and other disposable materials), patients are not always aware of the impacts that can occur from the improper disposal of these items into regular household trash.

Solid waste materials, such as diapers, tissues, or articles of disposable bedding or clothing possibly contaminated with radioactive materials should **not** be disposed of in the regular trash. Instead, these materials should be placed in a heavy plastic garbage bag or sealable container, which should then be stored in a secure place away from people (e.g., a closet, remote hallway, entryway, or shed) until its radioactive contents have had sufficient time to decay.

Your medical provider should give you verbal instructions and written information about how long it will take for the radioactive material to decay and when the items may be disposed of as regular household trash. Your medical provider may also be able to discuss alternative safe disposal options with you.

### **WHY IS PROPER DISPOSAL OF SUCH WASTE IMPORTANT?**

Improper disposal of radioactive material can be detected at solid waste facilities. When detected, it requires considerable resources from the MPDH/RCP, local waste management officials, and trucking company staff to isolate and identify what the radioactive material is so it can be properly managed. In FY09, MDPH/RCP responded to 120 incidents involving radioactive materials at waste facilities across the Commonwealth. Virtually all of these were caused by the improper disposal of personal items contaminated by radiopharmaceuticals. Of equal significance is the fact that the detailed trash inspection process often reveals items (e.g., envelopes with the name and address of the patient) that compromise the privacy of a patient whenever there is a report of the discovery of radioactive material in a trash load.

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## For More Information

### **Radiation Control Program**

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