FACT SHEET (Insert logo here)

Radiation Q&A

What Is Radiation?

- Radiation is a form of energy that is present all around us.
- Different types of radiation exist, some of which have more energy than others.

How Can Exposure Occur?

- People are exposed to small amounts of radiation every day, both from naturally occurring sources (such as elements in the soil or cosmic rays from the sun), and man-made sources. Man-made sources include some electronic equipment (such as microwave ovens and television sets), medical sources (such as x-rays, certain diagnostic tests, and treatments), and from nuclear weapons testing.
- The amount of radiation from natural or man-made sources to which people are exposed is usually small; a radiation emergency (such as a nuclear power plant accident or a terrorist event) could expose people to small or large doses of radiation, depending on the situation.
- Scientists estimate that the average person in the United States receives a dose of about one-third of a rem per year. About 80 percent of human exposure comes from natural sources and the remaining 20 percent comes from man-made radiation sources – mainly medical x-rays.
- Contamination refers to particles of radioactive material that are deposited anywhere that they are not supposed to be, such as on an object or on a person's skin.
- Internal contamination refers to radioactive material that is taken into the body through breathing, eating, or drinking.
- Exposure occurs when radiation energy penetrates the body. For example, when a person has an x-ray, he or she is exposed to radiation.

What Happens When People Are Exposed to Radiation?

- Radiation can affect the body in a number of ways, and the adverse health effects of exposure may not be apparent for many years.
- These adverse health effects can range from mild effects, such as skin reddening, to serious effects such as cancer and death, depending on the amount of radiation absorbed by the body (the dose), the type of radiation, the route of exposure, and the length of time a person was exposed.
- Exposure to very large doses of radiation may cause death within a few days or months.
- Exposure to lower doses of radiation may lead to an increased risk of developing cancer or other adverse health effects later in life.

How Can I Protect Myself During a Radiation Emergency?

- After a release of radioactive materials, local authorities will monitor the levels of radiation and determine what protective actions to take.
- The most appropriate action will depend on the situation. Tune to the local emergency response network or news station for information and instructions during any emergency.
- If a radiation emergency involves the release of large amounts of radioactive materials, you may be advised to "shelter in place," which means to stay in your home or office; or you may be advised to move to another location.
- If you are advised to shelter in place, you should do the following:
    - Close and lock all doors and windows.
    - Turn off fans, air conditioners and forced-air heating units that bring in fresh air from the outside. Only use units to recirculate air that is already in the building. Close fireplace dampers.
    - If possible, bring pets inside.
    - Move to an inner room or basement.
    - Keep your radio tuned to the emergency response network or local news to find out what else you need to do.
- If you are advised to evacuate, follow the directions that your local officials provide. Leave the area as quickly and orderly as possible. In addition:
    - Take a flashlight, portable radio, batteries, first-aid kit, supply of sealed food and water, hand-operated can opener, essential medicines, and cash and credit cards.
    - Take pets only if you are using your own vehicle and going to a place you know will accept animals. Emergency vehicles and shelters usually will not accept animals.

Should I Take Potassium Iodide During a Radiation Emergency?

- Potassium iodide (KI) should only be taken in a radiation emergency that involves the release of radioactive iodine, such as an accident at a nuclear power plant or the explosion of a nuclear bomb. A "dirty bomb" most likely will not contain radioactive iodine.
- A person who is internally contaminated with radioactive iodine may experience thyroid disease later in life. The thyroid gland will absorb radioactive iodine and may develop cancer or abnormal growths later on. KI will saturate the thyroid gland with iodine, decreasing the amount of harmful radioactive iodine that can be absorbed. KI only protects the thyroid gland and does not provide protection from any other radiation exposure.
- Some people are allergic to iodine and should not take KI. Check with your doctor about any concerns you have about potassium iodide.