

Radiation Awareness for Health Care Workers

This PSHSA Fast Fact is intended to help health care workers understand the types of radiation therapy in use for cancer treatment, and the possible implications of working in areas where these treatments are provided.

Once diagnosed, most cancer is treated using surgery, chemotherapy, and radiation therapy, either alone or in combination. Radiation therapy is used to treat approximately half of the people who develop cancer. In hospitals and health care clinics around the world, radiation therapy equipment, radiopharmaceuticals, and software are being used to treat cancer.

There are Four Types of Radiation Therapy

1. Teletherapy
A type of external radiation therapy that uses either cobalt-60 equipment or linear accelerators to produce a beam of radiation.
2. High-dose-rate brachytherapy
Involves the temporary placement of radioactive sources directly in or around a tumour. This is used to treat, for example, cancer of the cervix, lung, breast and prostate.
3. Low-dose-rate brachytherapy
Involves permanently implanting radioactive “seeds” in or around a tumour. This is used, for example, for the treatment of prostate cancer.
4. Systemic radiation therapy
Is the use of radioactively-labelled substances called radiopharmaceuticals to treat cancer. Radiopharmaceuticals are substances that are attracted to specific organs or tissues in the body.

Cobalt-60 Radiation Therapy to Treat Cancer

Cobalt-60 radiation therapy is a type of teletherapy (or external radiation therapy) in which a powerful machine is used to direct a radioactive beam generated from a

cobalt-60 source, located outside of the body, to the area affected by the cancer.

Teletherapy is a painless, outpatient procedure that is very similar to getting a diagnostic x-ray. Teletherapy is most commonly used to treat a fixed tumour or a group of tumours in a small area at which the radioactive beam can be directly aimed, minimizing exposure of normal, healthy cells.

Radiation destroys or damages cells, preventing them from dividing into more cells. Since cancer cells grow and divide at a much faster rate than normal, healthy cells, cancer cells are much more sensitive to the radiation.

Implications for Healthcare Workers

Make it your business to:

- know which procedures your patient has had, and the implications for personal exposure.
- identify the Radiation Protection Officer in your workplace and ask questions about your risks.
- forward unresolved concerns to your Joint Health & Safety Committee.

Additional information can be found at these web sites:

www.radiationsafety.ca

www.mds.nordion.com