

7. Deceased patients containing Radioactive Material

- 7.1 Radioactive material is used in healthcare settings for treatment or diagnosis of various diseases. Radioactive material is not to be confused with x-rays; if a patient has had an x-ray (for example a CT scan or external beam radiotherapy) they are not made radioactive, they have simply been exposed to ionising radiation.

Once a patient has been administered with a radioactive material for diagnostic or therapeutic purposes, they will remain radioactive until the radioactive material is excreted and / or has decayed. For sealed sources, the only route is via physical decay of radioactive material. If a patient dies immediately after the administration of an unsealed source then there will be no excreted material and decay of the radioactive material will rely on physical decay only.

- 7.2 There are two types of radioactive source that a patient can receive: a sealed or an unsealed source. Sealed sources are encapsulated, which means that if someone came into contact with it, they would receive an exposure to radiation whilst in contact, but would not become contaminated with any radioactive material when they moved away. Sealed sources are commonly used in brachytherapy, where small radioactive seeds are implanted into the body surgically for cancer therapy (e.g. 125-I brachytherapy for prostate cancer). These seeds are not excreted, and remain in the patient.

Examples of unsealed sources include nuclear medicine diagnostic (for example a PET scan with 18-F) and therapeutic procedures (for example 131-I for thyroid cancer). Unlike sealed sources, an unsealed source will both give you a radiation exposure, and make you radioactive if you come into contact with it. **Therapeutic unsealed sources in a deceased patient, i.e. one who has recently received nuclear medicine therapy, pose the biggest risk to staff.**

- 7.3 Unsealed sources can be administered to a patient a number of ways, including being implanted (example 90-Y for liver metastases – SIRT), IV injection (for example 99m-Tc for a bone scan), inhaled (for example 99m-Tc for lung scans) or swallowed in a capsule (for example 131-I for radioiodine therapy).
- 7.4 Sealed sources used for brachytherapy are usually 125-I seeds. If the patient death has occurred 20 months post implant, the patient is not considered to be radioactive.
- 7.5 Due to the nature of the risk, precautions and restrictions must be followed to minimise the radiation dose to staff, and prevent the spread of radioactive contamination. SEPA regulate radioactive material in the environment, compliance with the regulations must be maintained.
- 7.6 If a **brachytherapy** patient (with implanted seeds) has died within 20 months of implantation follow [Bodies containing Radioactive Material](#), section 1.
- If a patient who has been administered recently with **diagnostic radioactive material** dies follow [Bodies containing Radioactive Material](#), section 2.
- If a patient who has been administered with **therapeutic radioactive material** dies follow [Bodies containing Radioactive Material](#), section 3.

- 7.7 The doctor completing the Medical Certificate of Cause of Death is required to record the presence, or otherwise, of radioactive materials or implants on the MCCD in box DH3 to the best of his or her knowledge and belief. This information must also be recorded in Section 2b of the [Deceased Adult Inpatient Notification Form](#). They should also be able to respond to queries from mortuary staff or cremation authorities regarding any known radioactive hazards.
- 7.8 If you suspect a patient who has died is radioactive please contact Medical Physics.
- Medical Physics admin office WGH: ext: 33904
- Medical Physics admin office RIE: ext: 22371
- Oncology physics: ext: 32174
- Out of hours please contact switch board and rota watch 'radiation emergency'.