

## **Radiation Safety in Endovascular Brachytherapy**

Endovascular Brachytherapy (EVBT) radiation safety may be divided into regulatory, staff and patient aspects. Systems using either photon or beta emitting radionuclides have been approved for clinical and research use in the United States. Certain general principles apply to all systems. Detailed safety policies must be individualized to particular systems.

The relevance of FDA labeling for any proposed clinical use of EVBT may be determined by reviewing the conditions imposed in the facilities radioactive materials license.

From the patient's point of view, treatment using any removable source is an interoperative High Dose Rate (HDR) procedure. Treatments administered in a HDR facility must conform to the usual safety protocols. Treatments delivered in an interventional laboratory require analogous protocols. However, the radiation risk to staff is not sufficient to require remote afterloaders.

Source management safety includes all of those activities associated with any use of therapeutic radioactive materials. Particular focus is directed toward the avoidance of treatment errors.

Staff risks include exposures in the laboratory under both normal and emergency conditions. They also include exposures associated with other aspects of source handling such as shipping, QA, and device cleaning.

The overall radiation risk associated with any properly run EVBT program is justifiable provided that the clinical results are better than that achievable with alternative technologies.