



## **Radioactive Seed Localization for Conservative Surgery of Nonpalpable Breast Cancer: Recommendations for Technology Implantation Program**

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**Background:** The radioactive seed localization (RSL) is used in impalpable breast cancer conservative surgery to assist the surgeon in accurately locating and excising the lesion site. This study aims to present recommendations about the RSL program implementation in health institutions.

**Methods:** An extensive literature review was performed. It comprehends: the committee responsible for implementation of the program actions; description of the necessary multidisciplinary team; the radiological safety committee role; the facility licensing; professionals training; material and instrumentation associated with the technique; and seed tracking system.

**Results:** The Program Implementation Committee must be formed by leaders from each department. The committee assumes responsibility for evaluating the necessary processes and presenting the schedule for program implementation. Since the procedure is classified as a nuclear medicine procedure it requires licensing. The Professional Team Formation, Education, and Training is a priority and simulation exercises are necessary. The Materials and Instrumentation Associated with the Technique must be well-known by the team and they should practice using radiation detectors. The seed must be always tracked, from moment they are received to discard. An Inventory for Tracking Seeds is provided. The Radiological Safety Aspects such as the ALARA principle are presented. A full description for the Radiological Procedure for Placing the seeds, the surgical removal and the Specimen Handling in Pathology focusing on how to locate the seed and retrieve them. After removed, the seeds can be placed in storage to wait for full radioactive decay or be returned to the manufacturer.

**Conclusions:** Regular multidisciplinary team meetings during program development are important to create a realistic timeline, having briefing meetings after the first 1-5 RSL cases and having annual or biannual follow-up meetings to discuss any issues or incidents.