



PR 35
(73FR45635)

17

Department of Radiation Oncology

10/24/2008

DOCKETED
USNRC

VIA E-Mail to: rulemaking.comments@nrc.gov

October 29, 2008 (12:45pm)

Annette L. Vietti-Cook
Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

ATTN: Rulemakings and Adjudications Staff

Re: Comments on Proposed Rule for Medical Use of Byproduct Material—
Amendments/Medical Event Definitions (RIN 3150-AI26, NRC-2008-0071) [See 73 FR
45635 (August 6, 2008)]

Dear Ms. Vietti-Cook:

I am a Radiation Oncology practicing at the University of Alabama at Birmingham. As part of a multi-disciplinary team I have performed over 500 prostate implants over the last ten years. Over this time the procedure to perform prostate implants at UAB has evolved from pre-planning to intraoperative planning.

I am concerned that the U.S. Nuclear Regulatory Commission's (NRC's) proposed modifications to 10 CFR 35.40 and 35.3045 to establish separate medical event criteria and written directive requirements for permanent implant brachytherapy would result in inappropriately categorizing some medically acceptable implants as "medical events" (ME's).

1. TIMING OF WRITTEN DIRECTIVE AND MEDICAL EVENTS

The proposed rule language for § 35.40(b)(6) and § 35.3045(a)(2) does not take into account clinical practice realities. Many authorized users (AUs) perform real-time, adaptive, interactive planning, whereby the written directive and the source strength to be implanted are based on the actual volume dynamically determined during the procedure rather than based on the pre-implant volume.

Real-time planning is a more accurate method of implantation. It allows the physician to take into account any alterations in the organ volume and shape that occur between the time of the pre-plan and the implant procedure and therefore represents the actual organ volume and implant situation. For those performing real-time adaptive planning implantation, the total source strength to be implanted is determined intraoperatively

Office of the Chairman
105 Wallace Tumor Institute
1824 6th Avenue South
205.934.2761 • Fax 205.975.5186
jaborner@uabmc.edu
www.uabmc.edu/radonc

The University of
Alabama at Birmingham
Mailing Address:
WTI 105
619 19TH ST S
BIRMINGHAM AL 35249-6832



A Comprehensive Cancer
Center Designated by the
National Cancer Institute

Template = SECY-067

SECY-02

during the implantation procedure and not pre-implant. Further, even those performing permanent brachytherapy using preplanned techniques will often modify their plan if intraoperatively they find major discrepancies in the gland or organ volume from the volumes determined during the preplan.

I support ASTRO's suggested revisions to the proposed regulations. I believe this modification will clarify that the source strength implanted as stated in the WD refers to the source strength implanted after administration but before the patient leaves the post-treatment recovery area.

2. DEFINITION OF TREATMENT SITE

The definition of "treatment site" described in § 35.2 as "the anatomical description of the tissue intended to receive a radiation dose, as described in a written directive" leads to some ambiguity regarding the exact volume that "treatment site" refers to in § 35.3045(a)(2)(ii). There are various standard volumes already defined in radiation oncology, including the gross tumor volume, which is the volume that contains tumor. Two other margins are added to the gross tumor volume during the brachytherapy planning process. One margin is added to account for the subclinical spread of tumor, which is termed the "clinical target volume," and a second margin is added to account for uncertainties in source positioning, tumor boundaries, isodose constrictions, etc., which is termed the "planning target volume." These volumes are defined by ICRU publication 62.

These expansion margins are not constant but change for different clinical situations. Radiation oncologists use a larger margin if there is high degree of uncertainty and/or if there are no adjacent critical structures. Conversely, the margins are smaller if the boundary is distinct and/or if there are adjacent critical structures.

I believe that the proposed regulations cross into clinical decision-making by specifying margin parameters and the source strength to be placed in the margin. The NRC will be interfering into medical judgment if it dictates the amount of source strength the authorized user can place in the margins. Using the definition found at § 35.2 of "treatment site" as "the anatomical description of the tissue intended to receive a radiation dose, as described in a written directive" raises ambiguities in terms of the proposed medical event reports and notifications as it is unclear whether the "treatment site" refers to the gross tumor volume or includes the margins in the clinical target volume or those in the planning target volume.

I support ASTRO's recommended changes to the definition of "treatment site" at § 35.2 be revised to reflect the distinct clinical areas - gross tumor, the clinical target volume, plus a variable planning target volume. Further, by following ASTRO's suggested alternative language, section § 35.3045 (a)(2)(iii) of the proposed rule would become superfluous and therefore could be eliminated.

I believe that these suggested modifications to the proposed rule language are necessary because in the normal course of some medically acceptable brachytherapy implant procedures, a few seeds may come to rest beyond 3 cm (1.2 in) from the outside boundary of the treatment site. This can occur if the seed comes to rest inside a small blood vessel and then travels away from the implant area. With intraoperative planning the physician can assess the clinical impact of the missing seed and replace it if needed. Individual seeds away from the implant have never been shown to have any clinical impact but occur commonly in implants performed by the most experienced physicians.

Thank you for giving me this opportunity to provide comments on the NRC's proposed rule changes to 10 CFR 35.40 and 35.3045 related to medical events in permanent implant brachytherapy. Please contact me at 205-975-0224 or jfiveash@uab.edu if you have any questions.

Sincerely,



John B Fiveash, M.D.
Associate Professor
Robert Y Kim Outstanding Educator Chair
Department of Radiation Oncology
University of Alabama at Birmingham