AbstractID: 12819 Title: Developing and Maintaining a Safe HDR Brachytherapy Practice

Recent press and Congressional Hearings on the medical use of radiation have emphasized the importance of quality assurance to ensure safe and effective radiotherapy treatments. These articles and discussions focused on several very tragic events that occurred in our field. This has provided all of us with an important opportunity to pause and re-examine the quality assurance programs in our individual clinics and to revisit national guidance on critical safety issues.

In the past, catastrophic failures have been documented with high dose brachytherapy. In the fall of 1992, two clinics experienced catastrophic failures of their high dose rate brachytherapy source wire. In one case, this failure led to a misadministration and death of a patient. As a result, significant changes were realized in the regulatory environment which resulted in more vigilant quality assurance requirements.

During this presentation, we will discuss the lessons learned from brachytherapy misadministrations and their impact on clinical practice. Attendees will learn about relevant federal regulatory requirements, NRC licensing requirements, and AAPM recommendations and task group reports. Quality assurance, safety checks, and logistical planning will also be discussed with the aim of providing attendees with information to develop a successful and safe HDR program.

Educational Objectives:

1. Discuss the lessons learned from brachytherapy misadministrations.
    a. NUREG-1480
    b. IAEA Safety Reports Series No. 17
2. Discuss the necessary steps to prepare for the clinical implementation of a HDR brachytherapy program.
    a. NRC licensing
    b. Equipment purchase
    c. Room design and shielding
    d. Acceptance testing and commissioning
3. Development of an HDR QA program.
4. Discuss logistics for HDR workflow.