

AbstractID: 11572 Title: Cervix brachytherapy dosimetry: Observed improvement in data submitted to clinical trials

**Purpose:** For over 40 years, the Radiological Physics Center (RPC) has reviewed the completeness, consistency with protocols, and the dosimetric accuracy of data submitted for cervix patients treated with brachytherapy on national clinical trials. In 2005 the RPC presented data which showed that 65% of cervix patients placed on study had one or more dosimetry errors in at least one of their implants. This study was conducted to determine if brachytherapy dosimetry has improved in the last 4 years.

**Methods & Materials:** In the last 4 years the RPC has reviewed 695 HDR and LDR implants. Independent dose calculations were performed at points A, B, vaginal surface, bladder and rectum as defined by the protocol in accordance with ICRU-38. The vaginal surface dose was defined as a point lateral to the center of the source (s) at 0.5cm from the surface of the ovoid. RPC doses were compared to the institution's reported doses.

**Results:** From 2005 to 2009 the RPC has determined that dosimetry errors have decreased by 50%. Most remaining errors result from incorrectly defining calculation points. However the use of CT has created some new issues due to the manipulation of the CT images when visualizing the tandem.

**Conclusion:** The decrease in dosimetry errors is due to several different aspects: increase in rapid reviews, more timely reviews of patients and better communication with an institution when discrepancies are discovered.

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