AbstractID: 11166 Title: Dosimetry Quality Assrance in Japan

Purpose: The Outreach Radiation Oncology and Physics (ORP) section has provided quality assurance support programs for designated regional cancer centers (300 institutions), prefecture regional cancer centers (50 institutions), and institutions participating in clinical trials since Nov. 2007 Japan. Our mission is to contribute to the construction of a system whereby patients with cancer can receive the appropriate treatment based on scientific findings regardless of the region in which they reside. As independent quality assurance and quality control services, we monitor the output for radiotherapy beams, the dosimetry data utilized by institutions, the calculational algorithms used during treatment planning, and each institution's quality control procedures. The methods of monitoring include mailed and on-site dosimetry. **Method:** Mailed dosimetry (Radio-Photo-Luminescence) is used as a screening method. Our section is a reception office which monitors dose output data. For measurement, we use another institution's services (Association for nuclear Technology in Medicine). Our on-site dosimetry is performed based on RPC programs. During the on-site visit, each institution's person in charge of quality assurance is interviewed, physical measurements are made of the radiotherapy machines, and dosimetry and quality assurance data are reviewed. An institution becomes a priority for an "on-site dosimetry visit" if a mailed dosimetry discrepancy exceeding 5% is suspected. The remainder of the prioritization scheme is based on regional cancer centers. Dosimetry measurements are intended to verify the validity of important mechanical and radiation parameters (output, field size dependence, tissue-maximum dose ratio, wedge factor). **Conclusion:** For criteria, the TG-40 guidelines are used for the review of QA procedures. Mechanical and ion chamber measurements are made in air and water. The beam calibration and radiation parameter are ±3 and ±2%, respectively. We have provided on-site dosimetry visit programs for 17 linear accelerators since Nov. 2007. All of the institutions were within the permissible limit.