The Development of a Virtual Radiotherapy Clinic

With recent advances in the Internet and Intranet technology, the demand for obtaining technical information on-line has been increasing dramatically. This paper presents the Virtual Radiotherapy Clinic - an environment that facilitates information to assist all professionals within the field using widely available Internet technology. The Virtual Clinic has been developed to address the six characteristics, which must be present to provide a realistic radiotherapy simulation: 1) Radiation Treatment protocols, 2) Radiation Dosimetry and Simulation, 3) Brachytherapy, 4) Quality Assurance (QA), 5) Radiation Safety functions, 6) Clinical Radiobiology. The Virtual Clinic is comprised of three main components: computer hardware, software, and the archetype. Functionally it is based on using modified medical physics instruments to support all activities in a radiation clinic. As configured, the virtual clinic supports machine calibration, QA in different magnitudes, and many others including physics billings and etc. Reliable Internet radiotherapy tools are essential for distributed applications to facilitate efficient multi-point communications among all participants. Ongoing developments of the Virtual Clinic include the patient education. Support for other forms of medical physics simulation is also planned. Throughout the project, electronic mail will be offered as a means of communication and contacts for those medical physicists and other care givers who are permanently or temporarily house bound, as well as those confined to rural areas. The eventual goal is to create an information center that is the core of a comprehensive "virtual radiotherapy clinic".