

# ONCOR PRECISION ACCELERATOR BEAM DATA COMMISSIONING, EQUIPMENT AND PROCEDURES

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## Abstract

Department of Neurosurgery at Mother Teresa Hospital is the first public hospital centre in Albania that will provide the treatment of tumors with radiotherapy, based on high technology of linear accelerators. This department will provide a treating of 25 patients per day, with conventional radiotherapy, IMRT, radio-surgery and stereotactic treatments. After installation of equipments, the next procedure is acceptance test and commissioning of linear accelerator for clinical use, by medical physicists. Since commissioning beam data are treated as a reference and ultimately used by treatment planning systems, it is vitally important that the collected data are of the highest quality to avoid dosimetric and patient treatment errors that may subsequently lead to a poor radiation outcome. To achieve this goal, our group is based on TG - 106 and TG – 51 of the Therapy Physics Committee of the American Association of Physicists in Medicine, IAEA 398 report and other documents which provide guidelines and recommendations on the proper selection of phantoms and detectors, procedures for acquiring specific photon and electron beam parameters and methods to reduce measurement errors 1%, beam data processing and detector size convolution.

This study presents the beam data measurement methodology and results from the commissioning of Siemens ONCOR™ PreScision. We have performed a comparison of commissioned photon beam for energy 6 MV and 18 MV and for electron beam for energy 6 MV with other studies and publications.

**Keywords:** *Linac, radiotherapy, tumor, commissioning, treatment*