

TG-70: Clinical electron beam dosimetry: supplement to TG-25

Purpose: The purpose of this talk is to describe the intent and content of Task Group 70: Clinical electron beam dosimetry: supplement to TG-25.

Task Group 70 of the AAPM was formed originally to address the issues of clinical electron beam dosimetry in light of the changes brought about by the new calibration protocol TG 51. The latter task group gives a clear description of the procedure required to establish the dose rate at one point in a radiation beam. However, clinical dosimetry demands the ability to find the dose rate at any point in a radiation treatments field. TG 70 addresses these issues for electron beam treatments. Originally, Task Group 25 addressed these issues at the introduction of calibration protocol, TG 21 and provided direction for all aspects of clinical electron beam application in radiation therapy. Its initial intent was to give recommendations to practicing medical physicists, techniques for them to follow, and reasons for the particular recommendations. Task Group 70 has the same intent as the original TG 25 but to do so in light of not only TG 51 but also to take into account advances in the field since the time of TG 25. Improvements in the accuracy of correction factors such as the incorporation of realistic stopping powers for electron beams, P_{wall} , P_{gr} and P_{fl} , are describe along with improvements in electron beam treatment planning or improvements in techniques that have taken place since the original TG25 report. Each section states clearly the reason for that particular section, the problems that are addressed, or the new information that has been developed since TG 25. The solutions to those problems, the actions needed to be taken by practicing clinical medical physicist, and other direction is provided in each section.

Practical clinical aspects of electron beam dosimetry will be discussed including techniques for determining the output factors, percentage depth dose, and output factors and central axis percentage depth dose measurements for small, irregularly shaped electron beams. The final section of the task group report describes clinical applications of electron beams.