

2nd WHO Global Forum on Medical Devices Presentation Abstract Submission

Title: The Role of Key Professionals in Improving Patient Outcome through Technology Life Cycle Management – Medical Physicists, Biomedical Engineers, Clinical Engineers.

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Type of presentation: Health Outcomes

The dependency of medical services on the availability of reliable and safe technologies has reached an all-time high. The technologies are more integrated and sophisticated, and require to be managed throughout their life cycle by professionals with unique competencies. Given the wide variety of technologies and the many stages of their life cycle, technology management can positively affect patient outcome when performed by competent and trained health professionals. The type and number of these professionals will depend on the complexity of the patient population served, the facility service level, and the diversity of medical devices. Typically, these professionals include biomedical engineers, clinical engineers and medical physicists. This presentation will focus on the roles that these professionals play and where overlapping responsibilities may exist.

The main functions of biomedical engineers are the research, design and manufacturing of medical devices. The main functions of clinical engineers are insuring optimal selection, installation, integration and safe performance of technology. To insure safe performance, clinical engineers develop verification programs and maintenance strategies. Medical physicists interact with clinicians and other staff in the medical applications of both non-ionizing and ionizing radiation. In the latter case, they are responsible for radiation safety. All three professions involve writing and/or reviewing technical and software specifications, performing acceptance tests, commissioning of technology and development/implementation of QA/QC programs. In medical imaging, medical physicists review/modify image acquisition protocols and assess quality and dose; in radiotherapy, they calibrate devices and measure the characteristics of the treatment machines, advising clinicians on imaging protocols, radiation therapy simulation, treatment planning and treatment delivery. To perform the functions these key professionals require specific education and training as well as professional recognition by the medical and educational communities. Details of the education, experience and competences of these health professionals will be provided.