

Quality Assurance In Nuclear Medicine

The objective of this publication is to provide professionals in nuclear medicine centres with quality assurance procedures for the scintillation camera, computer system and digital image display. It is intended to be a resource for medical physicists, technologists and other healthcare professionals who are responsible for ensuring optimal performance of imaging instruments, particularly SPECT systems, in their respective institutions. It may also be useful to managers, clinicians and other decision makers who are responsible for implementing quality assurance/quality control programmes in nuclear medicine centres.

Quality Assurance for Radioactivity Measurement in Nuclear Medicine IAEA

This publication contains information on the implementation of quality assurance and quality control programmes for measuring radioactivity relating to the practice of nuclear medicine, covering standards at both the end user (clinic) and secondary radioactivity standards laboratory levels. It is based on the QA principles in ISO/IEC 17025 which describes requirements that testing and calibration laboratories must meet to demonstrate that they have a quality system in place and are technically competent.

Tiivistelmä : Isotooppikuvantamisen ulkoinen laaduntarkkailu.

Written at the technologist level, Nuclear Medicine Instrumentation focuses on instruments essential to the practice of nuclear medicine. Covering everything from Geiger counters to positron emission tomography systems, this text provides students with an understanding of the practical aspects of these instruments and their uses in nuclear medicine. By concentrating on the operation of these instruments and the potential pitfalls that they are subject to, students will be better prepared for what they may encounter during their career. Chapters include: Detectors Gas-Filled, Scintillation and Semiconductor; Image Characteristics SPECT, PET; Collimators; Radiation Measurements; and more.

Accurate interpretation of nuclear medicine image data depends upon an understanding of image patterns and quantitative results. This book presents numerous examples which allow the reader to gain an understanding of the interpretation of quality control tests and to recognize artefacts. The examples are not limited to the quality control tests, but include clinical images obtained from unsuspected malfunctioning in the scintillation camera and/or computer system, suboptimal use of the system or operator error.

Zsfassung in niederländ. Sprache.

Quality management systems are essential and should be maintained with the intent to continuously improve effectiveness and efficiency, enabling nuclear medicine to achieve the expectations of its quality policy, satisfy its customers and improve professionalism. The quality management (QM) audit methodology in nuclear medicine practice, introduced in this publication, is designed to be applied to a variety of economic circumstances. A key outcome is a culture of reviewing all processes of the clinical service for continuous improvement in nuclear medicine practice. Regular quality audits and assessments are vital for modern nuclear medicine services. More importantly, the entire QM and audit process has to be systematic, patient oriented and outcome based. The management of services should also take into account the diversity of nuclear medicine services around the world and multidisciplinary contributions. The latter include clinical, technical, radiopharmaceutical, medical physics and radiation safety procedures.

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