IAEA's Quality Management Audits Programmes

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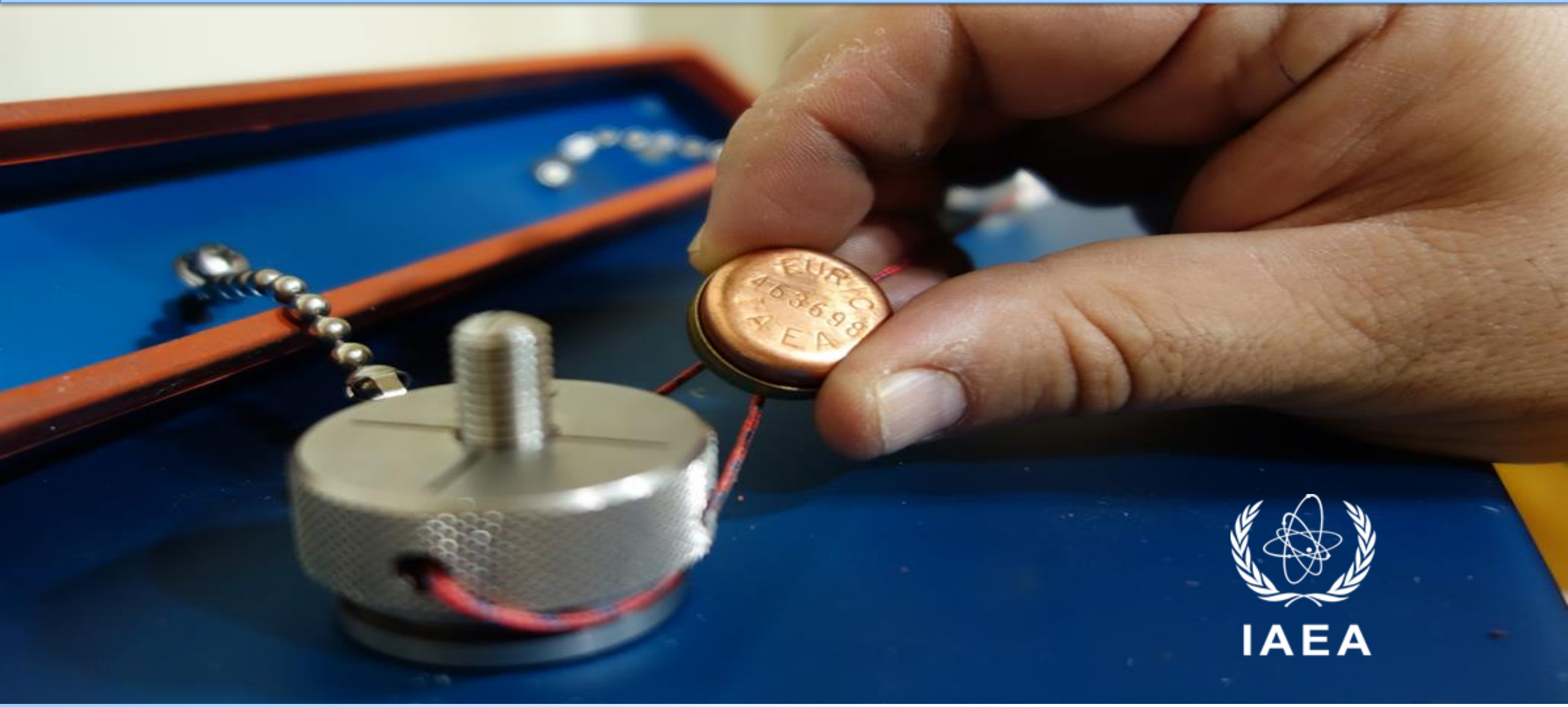
International Atomic Energy Agency

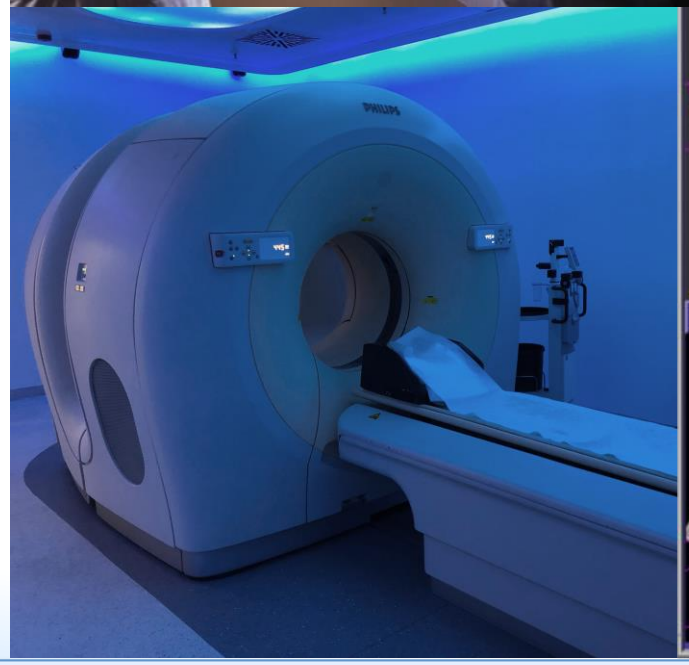
Independent, intergovernmental, science- and technology-based organization within the United Nations family.

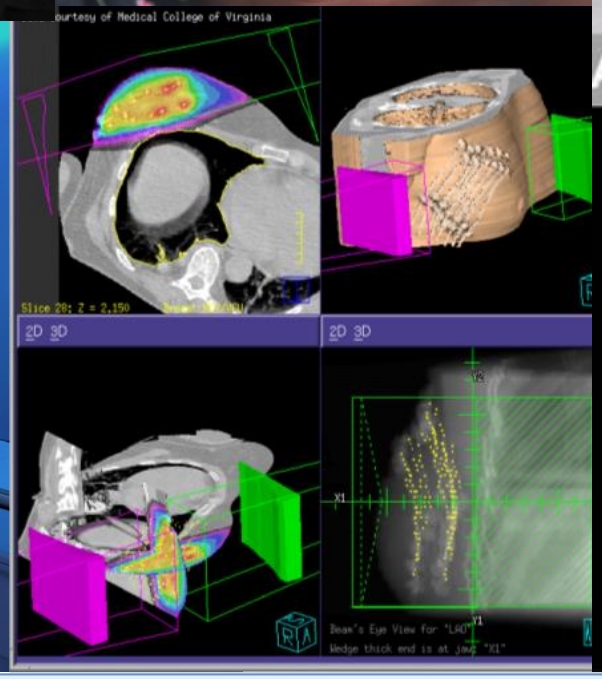
Serves as the global focal point for nuclear cooperation worldwide

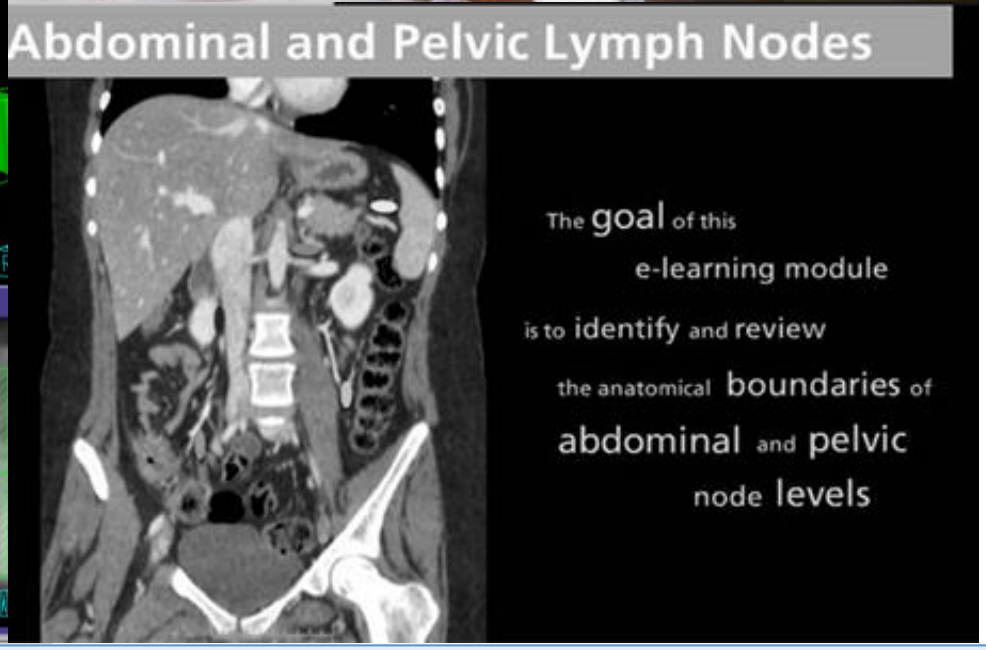
1. Safeguards and verification, ensures that MS comply with their commitments under the Non-Proliferation Treaty and other non-proliferation agreements to use nuclear materials and facilities only for peaceful purposes.
2. Safety and Security. Develops nuclear safety standards and promotes high levels of safety as well as the protection of human health and the environment against ionizing radiation.



3. Nuclear Sciences and Applications. Assists MS in the context of social and economic goals through the planning and use of nuclear science and technology for various peaceful purposes.







Within the IAEA's commitment to transferring nuclear technologies for peaceful purposes

Our role in the Division of Human Health is to strengthen the capabilities of MS to address the needs related to the prevention, diagnosis and treatment of health problems through the application of nuclear and related techniques

Global Support for Nuclear Medicine, Radiology and Radiotherapy

Making the case

Continuing professional development

Adherence to safety standards

On diagnostic and therapeutic applications

Planning and setting up

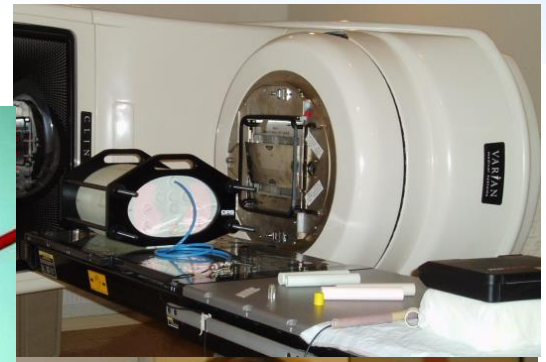
Appropriate use criteria, right study for the right patient

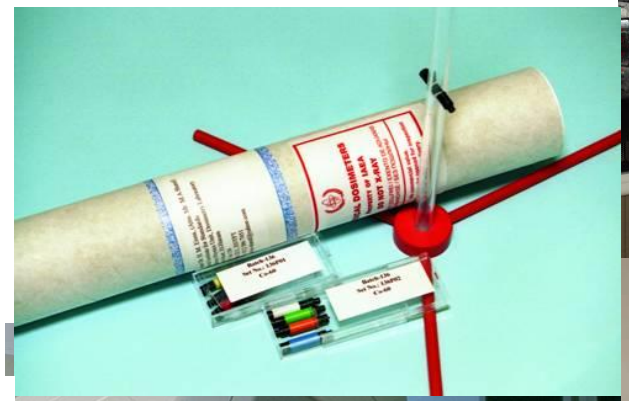
Implementation of Quality management programmes

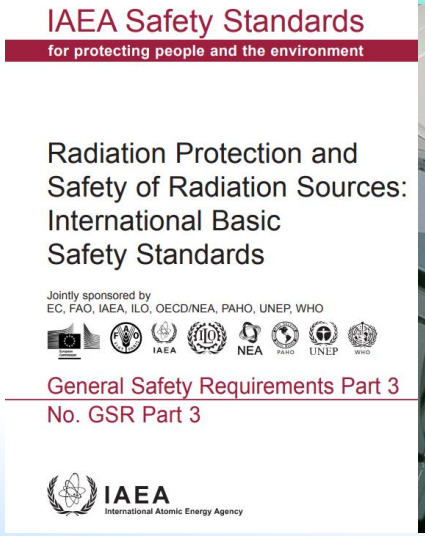
Introduction of Comprehensive Audits

- The IAEA has recognized the need to audit medical radiation technology (diagnostics & therapy)
- The foundation is the IAEA International Basic Safety Standards. First edition in 2003, revision 2014
- EC Directive 97/43/Euratom: EU countries are recommended to implement clinical audits
- IAEA methodology for comprehensive clinical audit has been developed and published for radiotherapy, nuclear medicine and diagnostic radiology

https://www-pub.iaea.org/MTCD/Publications/PDF/Pub1578







Definitions (ISO)

- **Quality Assurance**

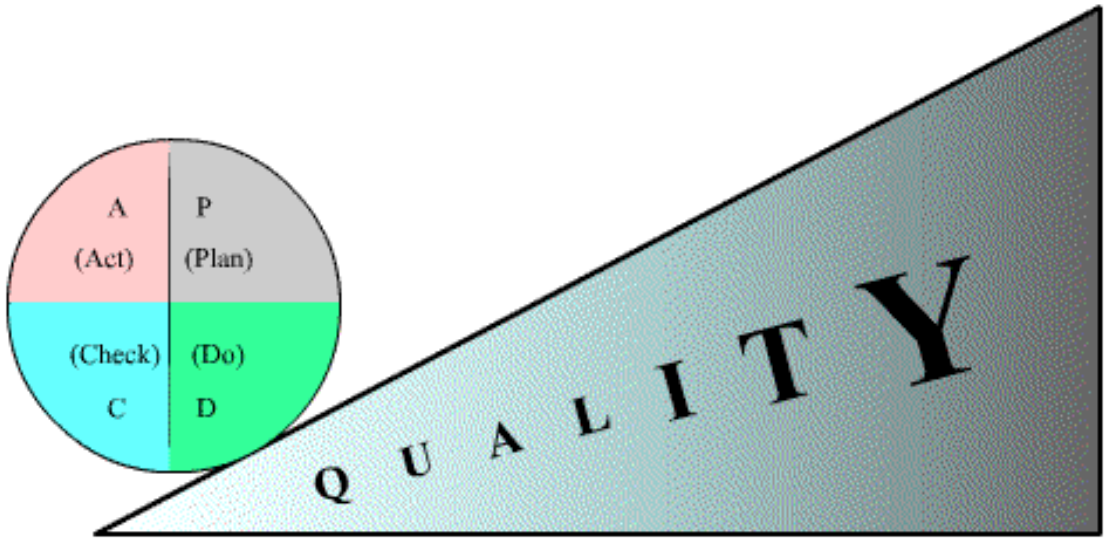
  set of activities intended to establish confidence that quality requirements will be met. QA is one part of QM

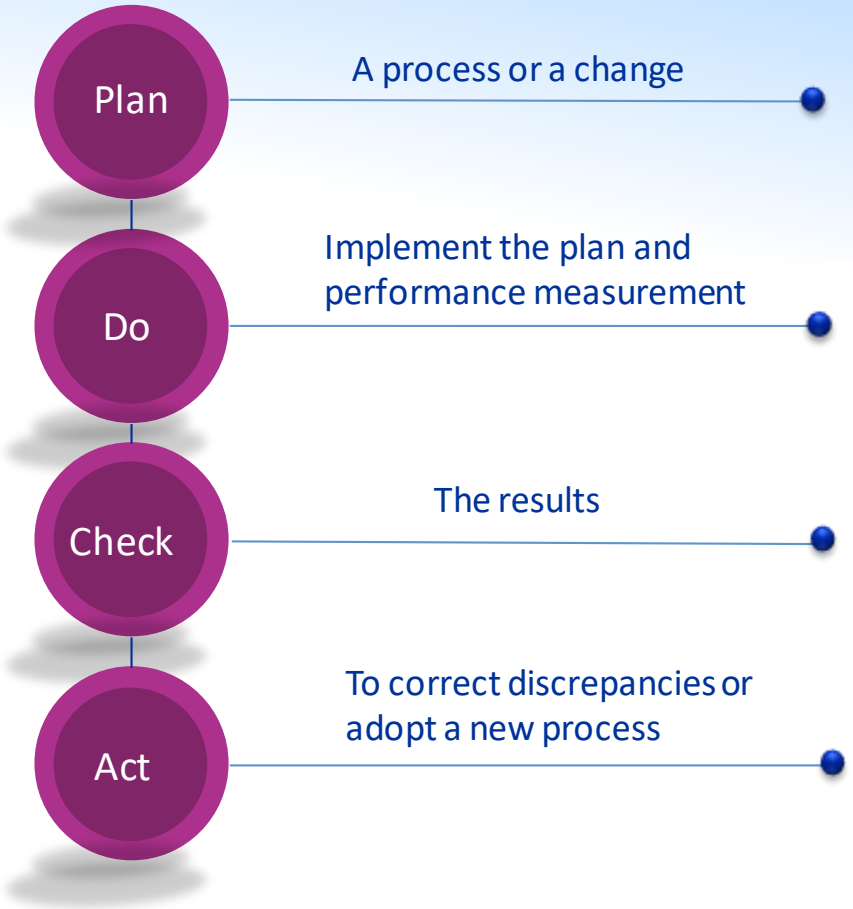
- **Quality Management**

  includes all the activities that organizations use to direct, control, and coordinate quality. These activities include formulating a quality policy and setting quality objectives

  QM includes:

The Deming (PDCA) Cycle





Improve the clinical practice of the speciality and the quality of services provided

IAEA's Vision

Quality Management in Radiation Medicine

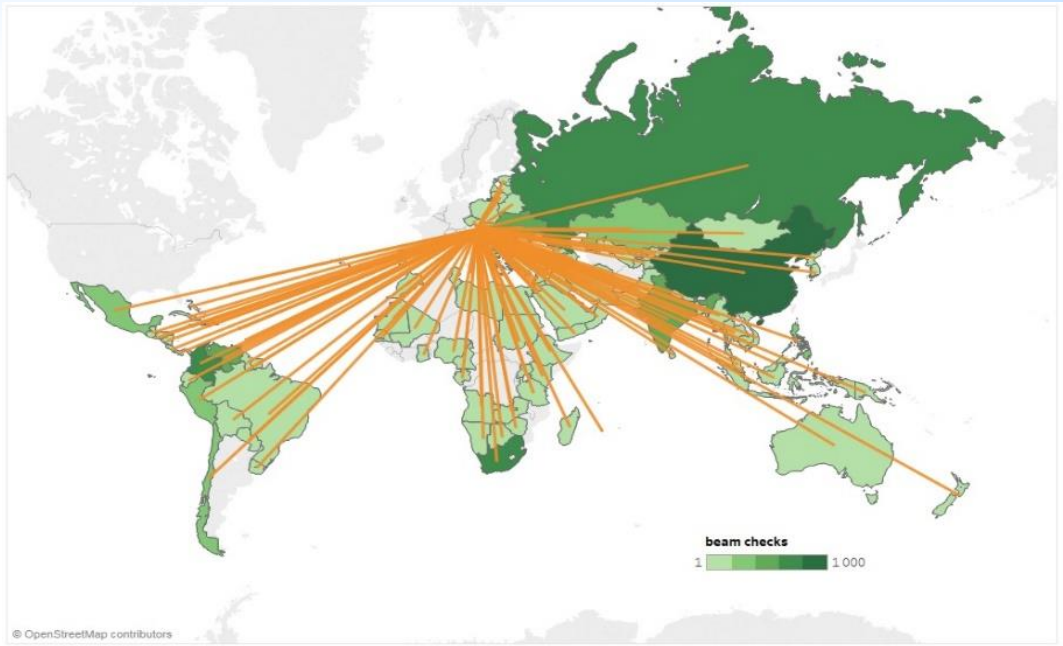
- Provide best possible **service** to patients
- At the lowest possible **risk**
- At adequate **costs** for patients and community, including the environment
- Improve **satisfaction** of customers and providers

Objective of the QM Audit

Dose Audits for Radiotherapy Centres

Dose audit service:

- 50 years of the IAEA/WHO postal dose audits (1969–2019)
- >13000 beam checks
- ~2300 radiotherapy centres in 133 Member States

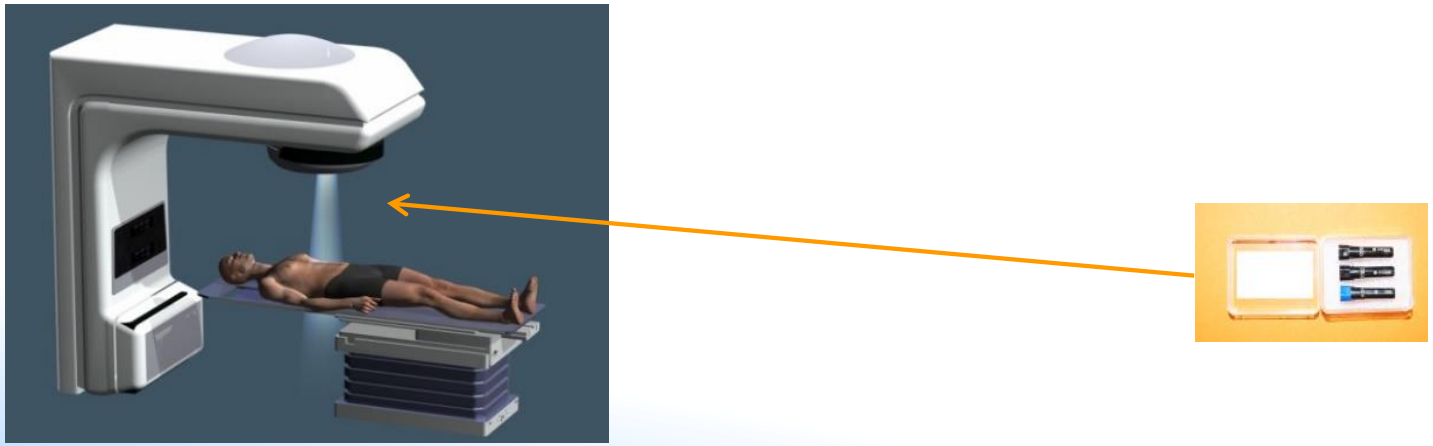


Supports Dosimetry Audit Networks

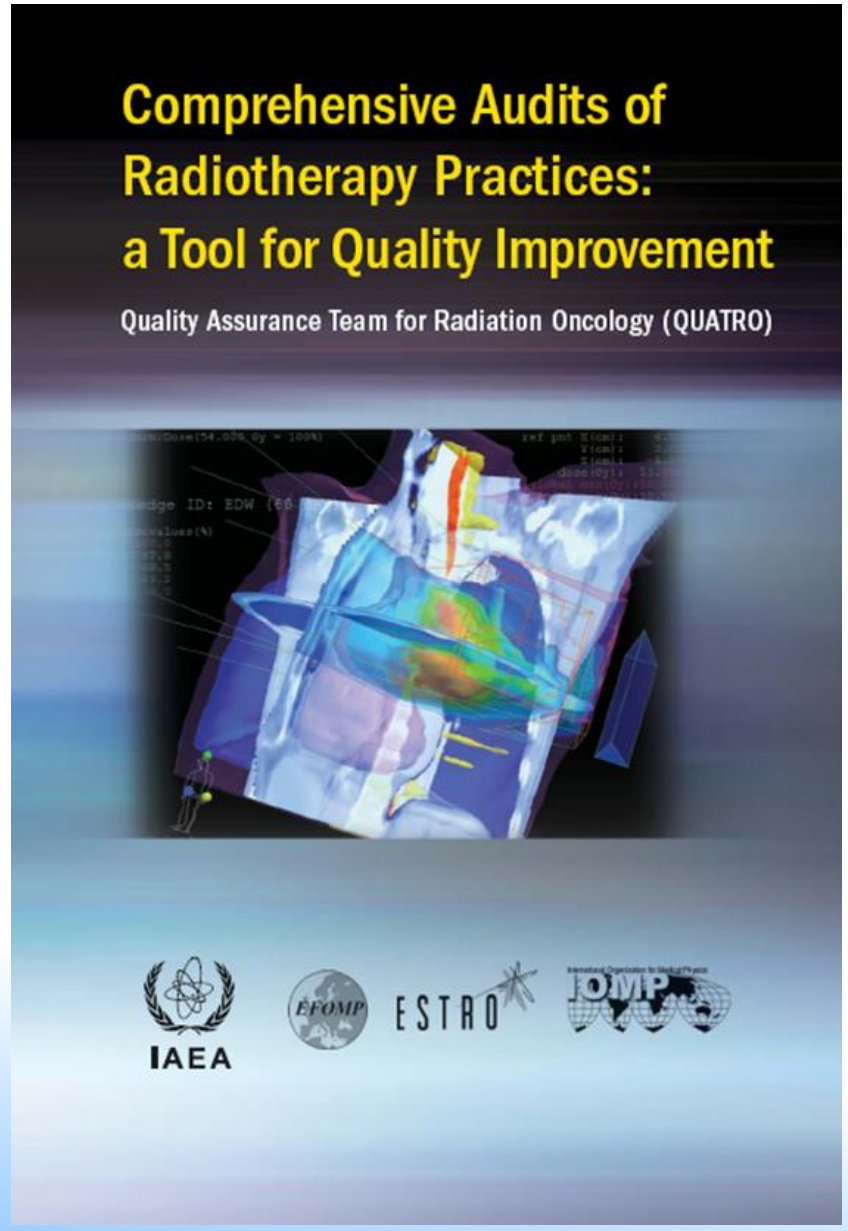
15 years support to over 25 DANs through blind dose comparisons (2004-2019)

How is the audit carried out?

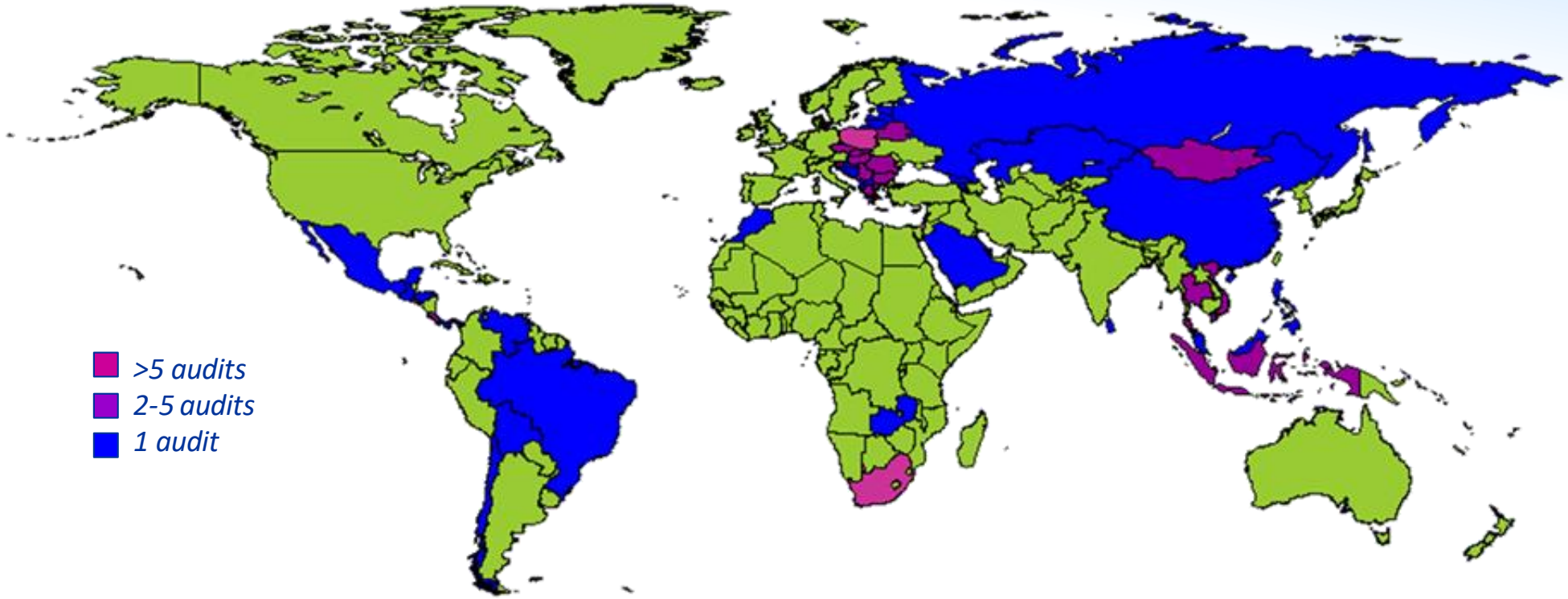
Small dosimeters are sent to radiotherapy centres for irradiation to verify the beam output used for patients' treatments.



Comprehensive RT audit: QUATRO



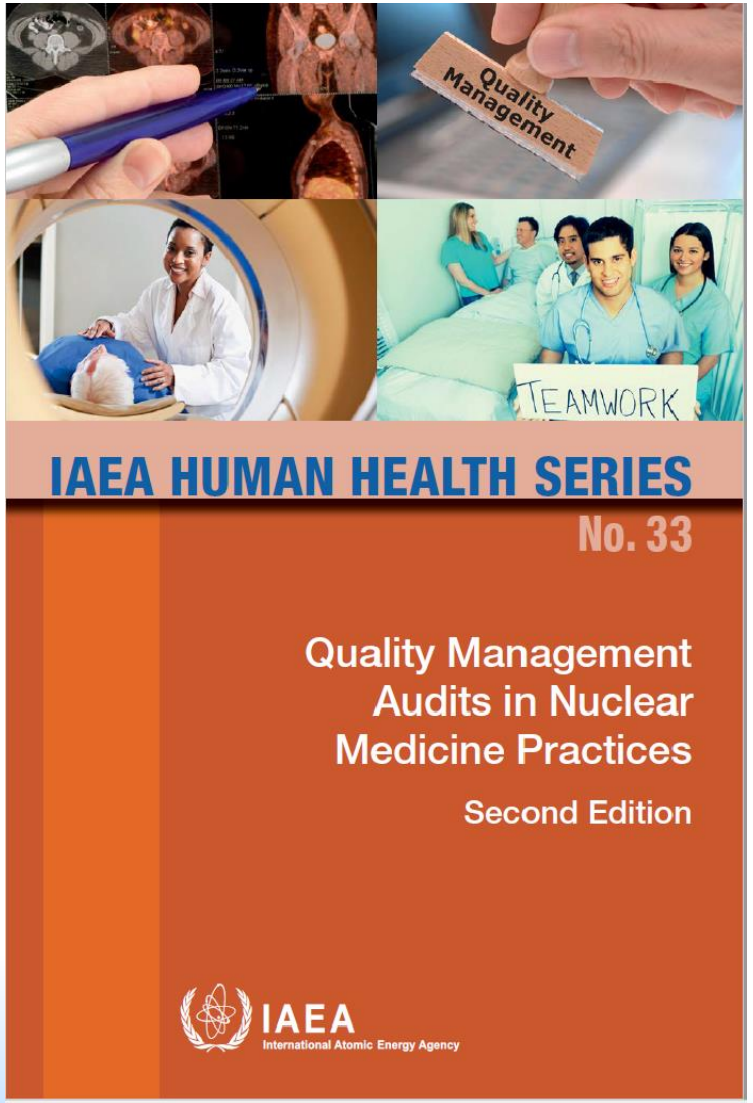
QUATRO activities 2005–2019



Training of auditors and regional QUATRO workshops in all world regions

96 QUATRO missions to date: Africa (11); Asia (22 + 10 re-audits); Europe (33 + 4 re-audits + 1 QUATRO physics audit); Latin America (14 + 1 re-audit)

Ongoing efforts by IAEA - QUALITY



QUANUM project is a means to support MS to implement QM systems

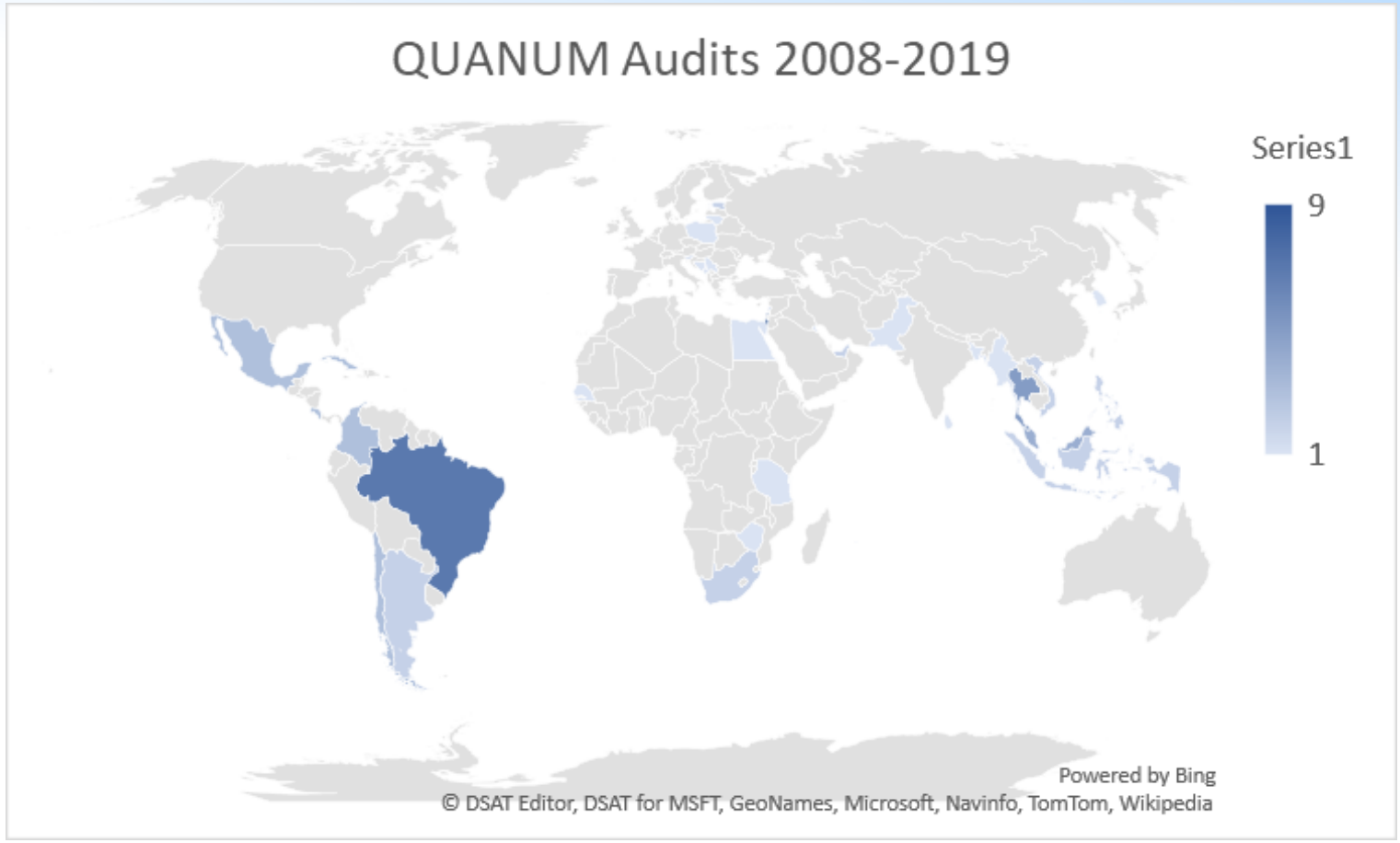
Encourage a routine of conducting periodic and systematic audits in the clinical environment

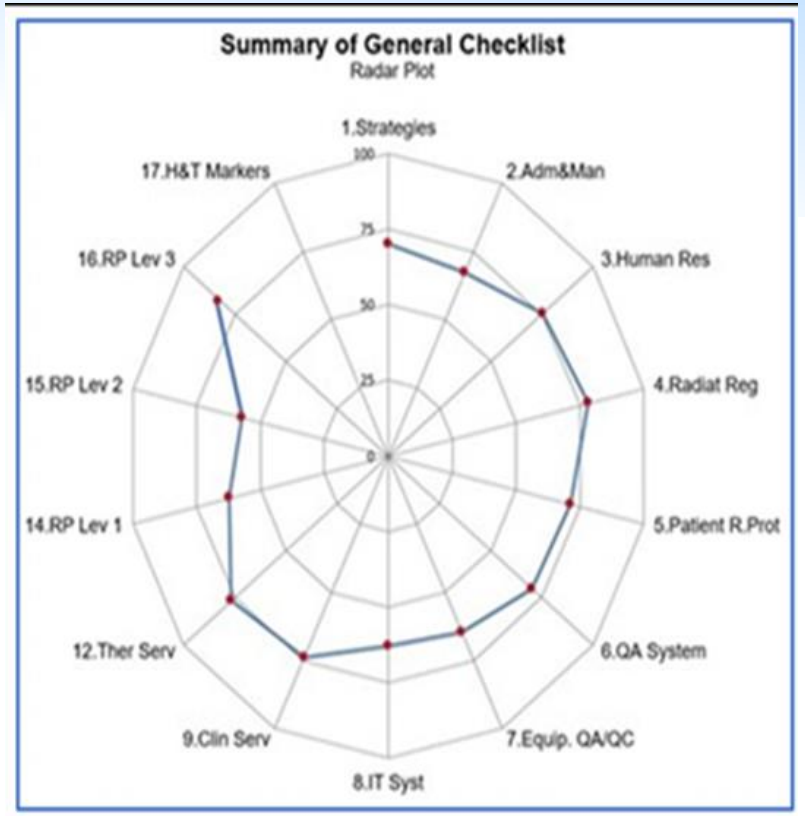
QUANUM provides independent quality audits through comprehensive reviews of nuclear medicine practices

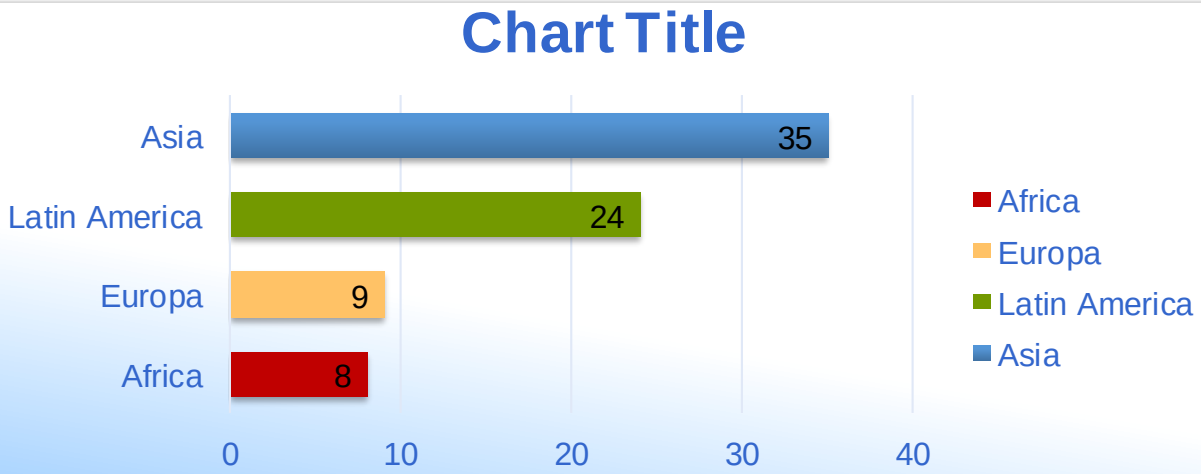
Focuses on the peer review of nuclear medicine practices and management in a nuclear medicine centre.

Apply good clinical practices by identifying areas of improvement

http://www-pub.iaea.org/MTCD/publications/PDF/Pub1371_web.pdf



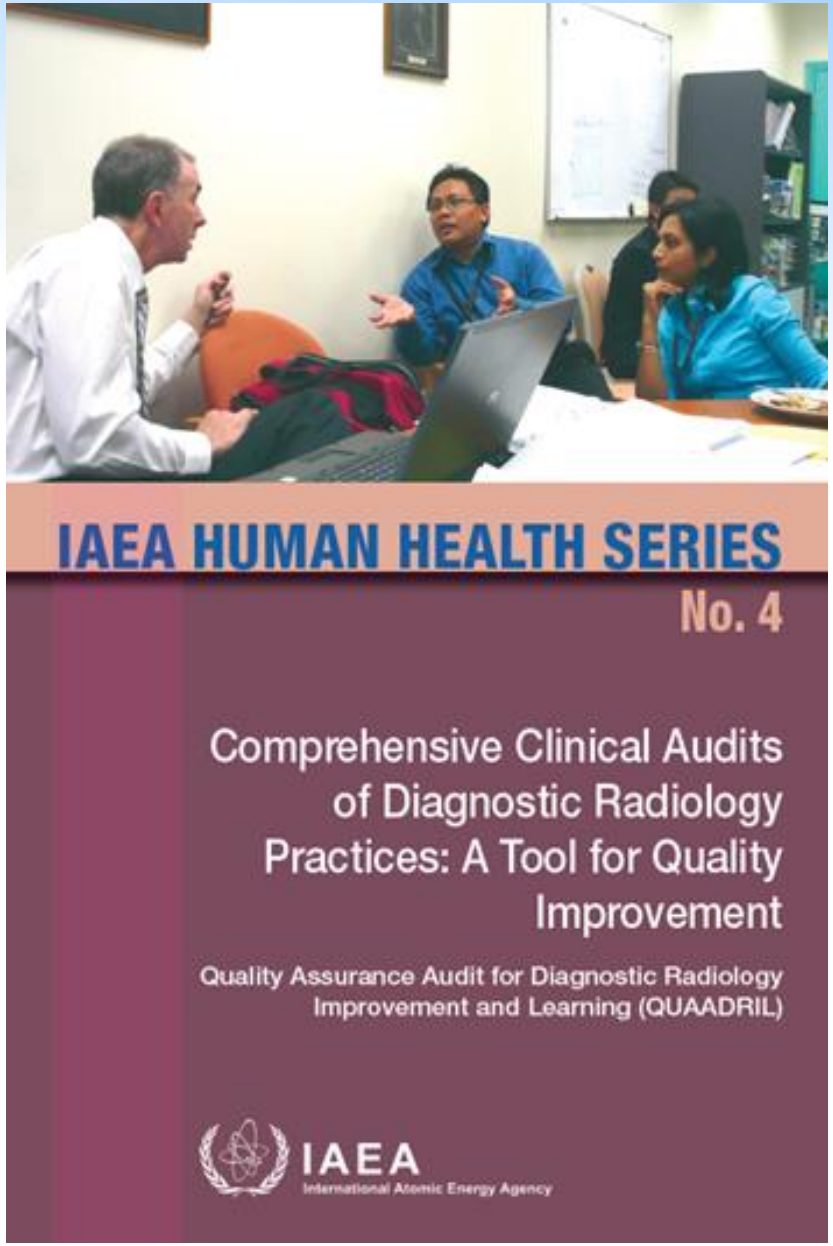




76 Audits -36 countries
56 Auditors – 14 teams
QUANUM workshops 24 -540 trainees

QUAADRIL

Bosnia and Herzegovina
Belgium
Israel
Thailand
Malaysia
UAE



Clinical Audit Purpose

Clinical audit involves evaluation of data, documents and resources to check performance against standards.

The purpose can be generally summarized as:

- To improve the quality of patient care
- To promote the effective use of resources
- To enhance the provision and organization of clinical services

To further professional education and training.

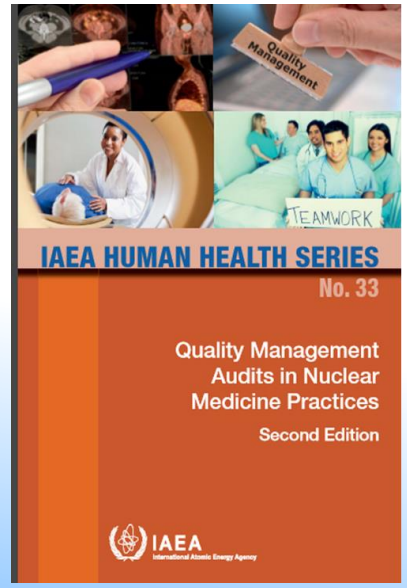
Achievements of the QUAADRIL, QUANUM or QUATRO projects

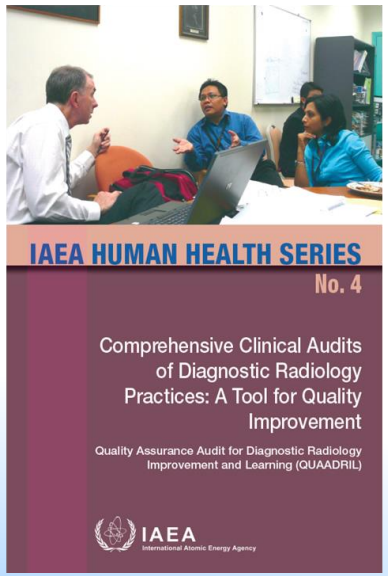
- Quality management culture
- Training in quality management in nuclear medicine, radiology and radiotherapy
- Multidisciplinary audit teams trained (different regions)
- High impact throughout the world and in the audited centres

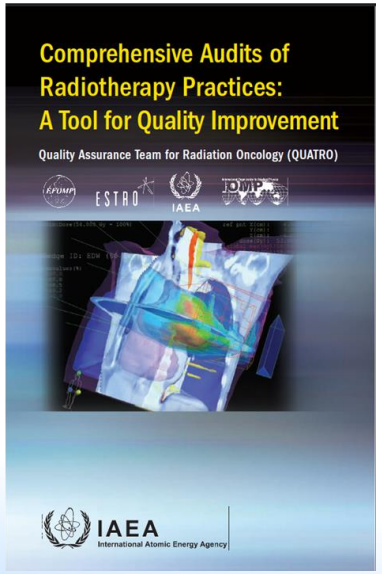
Conclusions

IAEA audits provide a tool for improvement of radiology, nuclear medicine and radiotherapy practices.

Countries can adopt QUAADRIL, QUANUM or QUATRO methodologies as part of the national comprehensive quality system or perform self-audits at the department level.







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