Introduction of comprehensive audit

- The IAEA has recognized the need to audit medical radiation technology (diagnostics & therapy)
- International Basic Safety Standards (BSS) is a foundation
- EC Directive 97/43/Euratom: EU countries are in the process of devising a methodology for clinical audit

Revised BSS: II.23 Registrants and licensees shall ensure that quality assurance programmes for medical exposures include, as appropriate to the medical radiation facility:

- periodic radiological clinical audits, by the radiological medical practitioners, of the radiological procedures performed at the facility

Focus on comprehensive audit

- EU countries are in the process of devising a methodology
- EC Directive 97/43/Euratom
- There is a need to audit all medical nuclear technology (diagnostics & therapy)
- QUATRO methodology “Comprehensive Audits of Radiotherapy Practices” developed by IAEA and endorsed by ESTRO, IOMP and EFOMP
- IAEA International Basic Safety Standards is a foundation

IAEA audits in radiotherapy

- ONGOING: IAEA/WHO TLD postal dose audits of radiotherapy beam calibration (38 years, 6500 beams checked in >1500 hospitals in 119 countries)
- NEW: Quality Assurance Team for Radiation Oncology (QUATRO)

Aims of QUATRO

I. **PROACTIVE AUDIT**: to review the radiotherapy process through a comprehensive audit

II. **REACTIVE AUDIT**: to offer assistance in the resolution of suspected or actual dose misadministration

- inconsistent results detected with the IAEA/WHO TLD postal service
- any problems in clinical dosimetry, on request
**QUATRO**

Quality Assurance Team for Radiation Oncology

A peer-review panel with four experts in RT

- radiation oncologist
- radiotherapy physicist
- radiation therapy technologist
- radiation protection expert

**Comprehensive audit in RT (QUATRO I)**

**Proactive audit**

- Peer review and evaluation of the quality of all elements involved in radiation therapy (staff, equipment and procedures, patient protection and safety, overall performance)
- Any areas for improvement will be identified with a view to designating the institution as a centre of competence complying with the IAEA criteria.

**GOAL: QUALITY IMPROVEMENT**

**Competence levels in radiotherapy**

- excellent
- good
- fair
- poor
- none

**Radiotherapy Centre of Competence**

- RT centre capable of delivering a sustainable radiotherapy service to a good standard, achievable in MS economic environment
- RT centre that can serve as a model for other radiotherapy centres
- A training centre for professional training of staff working in radiotherapy

**Comprehensive RT audit**

**Audit timescale**

- Typical duration 5 days per department
- Entrance briefing
- Days 1-3: team activities (tour, interviews, review of documentation, procedures, observation of practical work)
- Days 4-5:
  - Preparation of a preliminary report and recommendations
  - Physics measurements (dosimetry for tele- and brachytherapy, TPS check, benchmark cases, verification of data consistency)
- Exit briefing
Conclusion of the audit

A. The institution is suitable to perform the functions that comply with the IAEA criteria for a centre of competence in radiotherapy

B. The audit team has identified areas for improvement, resolvable by the institution

C. There are underlying major problems that cannot be resolved by the institution or without significant resources

*B, C* follow-up audits

Dissemination of the audit report

- Full audit report – confidential
  - The requestor (typically DIR or Head Dept.)
  - Individuals named by the institution

- Summary report – national authorities
  - National Liaison Officer for Technical Cooperation with IAEA
  - Ministry of Health

QUATRO missions in Europe

Conclusion of the 10 first audits in Europe

A. The institution operates the radiotherapy services at the internationally accepted level: 2/10 centres

B. The audit team has identified areas for improvement, resolvable by the institution: 5/10 centres

C. There are underlying major problems that cannot be resolved without significant resources: 3/10 centres

*B, C* follow-up audits