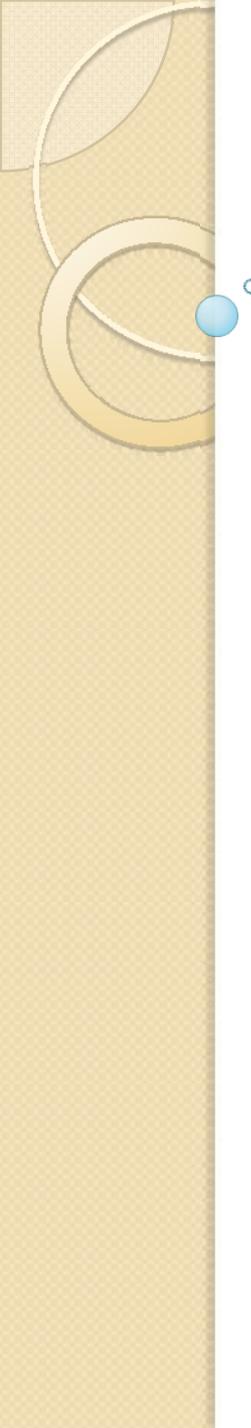


Lessons from ORAMED – Nuclear Medicine

François Jamar, UCL, Belgium

*Skin dose limits (500 mSv) can be exceeded (...) in hospitals
where radiation protection standard is low*

M. Sans, on behalf of ORAMED



Lessons from ORAMED – Nuclear Medicine - Awareness

Awareness was almost null in most centers before the project started for both physicians and technologists/nurses

The fact that measurements were undertaken already started to get people more aware and to understand the difference between whole-body doses and extremity (skin) doses.

Dissemination of the information has improved awareness and starts to change the mentalities, mainly among technologists

Physicians remain less concerned by the issue and mostly rely on the whole-body dose as a sort of **green card** for their staff

Lessons from ORAMED – Nuclear Medicine - Awareness

Awareness can be improved by implementing a programme at both educational and feed-back levels, as part of a global quality assurance management, the responsibility of which is that of the undertaker and the operational manager (us. Head of Dept)

Avenues to follow:

- **Audit of practice** (example of the Swiss authority), as part of the clinical audit foreseen in EC Dir. 97/43 (e.g. QUANUM, IAEA,...)
- **Tutorials** at the local level, using tools such as the ORAMED interactive training
- Practical aspects, using *tangible -material-* tools, e.g. video monitoring
- Regular **follow-up** of practices and of monitored doses
- Prefer **quality outcomes** to regulatory issues

Lessons from ORAMED – Nuclear Medicine - Priorities

With the wide development of **PET studies**, close and controlled monitoring of extremity doses in staff handling PET radiopharmaceuticals is essential (dispensing, administration but also synthesis when fully automated procedures are not [yet] available)

Therapeutic applications, esp. with tricky labelling (e.g. Zevalin) or prolonged procedures (e.g. SIRT)

Harmonization of regulations related to radioactive materials, pharmaceuticals and hospital hygiene. For instance, the forthcoming implementation of the EC Directive PICS-C and of radiation protection issues can be handled at the EC level together with HERCA

Thoughts for the future – Nuclear Medicine

Develop **appropriate training** for handling radiopharmaceuticals

Improve **regular information of staff**, on new/hot topics, but also fundamentals

Try to develop a **'sham-lab' training**

Optimize radiation protection **measures and devices** (shielding, automation, remote dispensing...)

Keep all this within a reasonable budgetary line, unless additional financement is provided

Thoughts for the future – Nuclear Medicine

Although measured doses within ORAMED were highly significant, no deterministic effects have been reported in Nuclear Medicine, giving an overall feeling of safety.

Research in genetic and chromosomal abnormalities after exposure to unsealed sources should be undertaken (e.g. internal dosimetry using probes such as gamma-H2AX, that are sensitive enough to 10-20 mGy WB doses)

The medical significance of capillary abnormalities should be further assessed as a deterministic effect of *uncertain significance*