A Training Program in Radiation Protection and Quality Control for Radiographers and Radiological Technologists from Developing Countries

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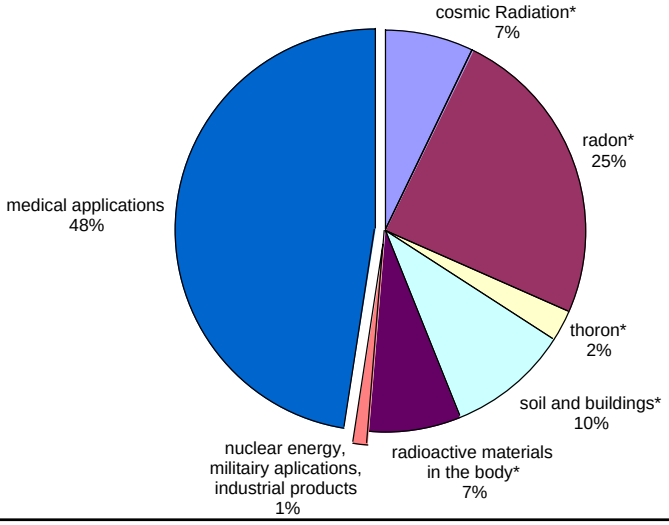
Introduction



Sources of exposure for the Belgian Population

Source: MIRA

Exposure

Level	Effective dose (mSv)
I	1,2
II	0,14
III	0,02
IV	<0,02

Annual effective dose to the population from diagnostic radiology examinations

Sourse: UNSCEAR 2000

Equipment vs. Knowledge

There is an urgent need for X-ray equipment, but even more for the basic knowledge of X-ray technology, quality control and machine maintenance

A training program in Belgium?

- Specialists in different subjects
- Modern equipment (MRI, multi-slice CT, ...)
- Practical sessions can be organised in the skills lab of EHSAL
- Quality control programmes in practise.
- Visits to manufacturers, workshops and congresses.
- Building networks with colleagues in the North.

History

Objectives

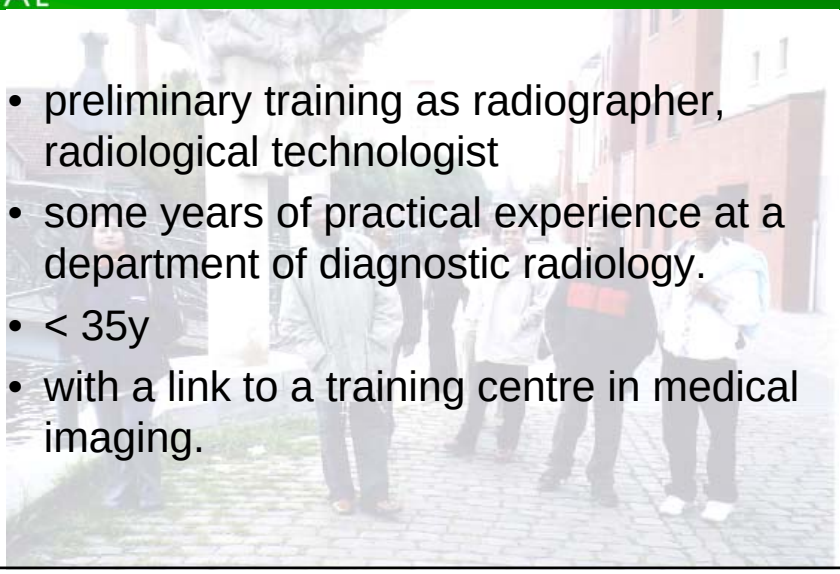
To give the students a training in:

- the functioning of diagnostic radiological equipment
- radiation protection of patients and staff in diagnostic radiology
- setting up and putting in practise a quality control programme
- new developments in medical imaging
- methods to pass the knowledge to colleagues and other students.

Objectives cont..

Bring the students in contact with colleagues and specialists in Europe and other developing countries

Criteria for applicants

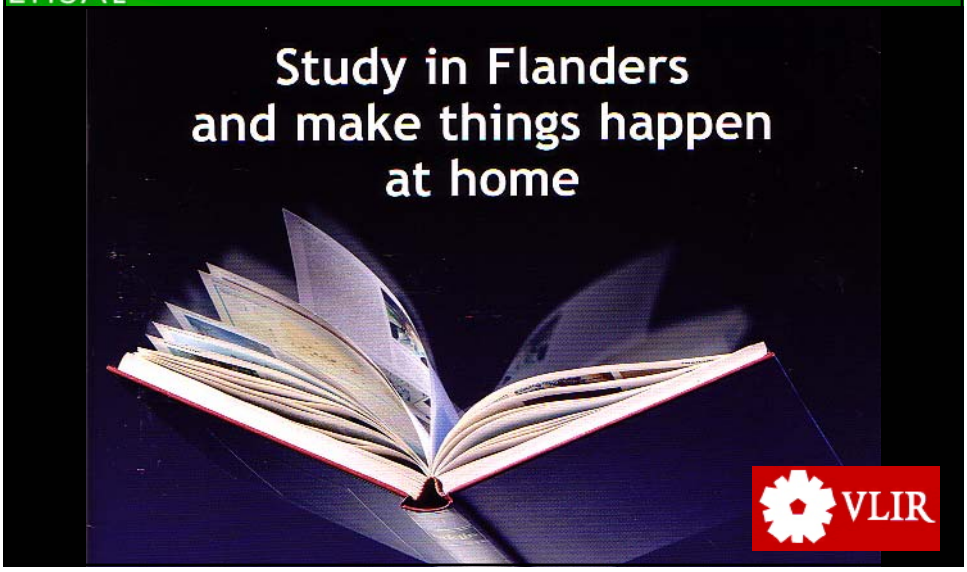


- preliminary training as radiographer, radiological technologist
- some years of practical experience at a department of diagnostic radiology.
- < 35y
- with a link to a training centre in medical imaging.

Students

	2004	2005
Number of applicants	35	47
Selected	12	11
Female	4	3
Zambia	1	
Ethiopia	3	1
Uganda	1	2
Nigeria	1	1
India	2	2
Cameroon	1	
Tanzania	2	1
Nepal	1	1
Ghana		1
Sudan		1
Malawi		1

International Training Program



Practical Implementation

Introduction in X-ray technology

Dosimetry and Radiation Protection
- Introduction in radiation physics
- Staff Protection
- Patient protection
- Optimisation
- **Practical dosimetry (skills lab EHSAL)**

Quality Control
- Basic principles
- Starting a QC program
- Using phantoms and test objects
- Developing protocols
- **Low-End QC (skills lab EHSAL)**
- **Practical QC (LUCMFR)**

Visits and projects
- **Internship at radiology departments**
- **Visits to manufacturers, research institutes workshops**
- **Personal projects**

Skills lab EHSAL

Skills lab cont..

Practical Implementation

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Evaluation

- The mix of theoretical and practical work is highly appreciated.
- The students are highly motivated.
- The duration of the course (2 months) is a good compromise.
- Students stay in contact with lecturers or colleagues
- The departments evaluate the participation in the program as very positive.

Evaluation (cont.)

- The analyses of the trainees can be confronting:
  e.g.. the use of fluoroscopy at some departments is criticised as exaggerated.
- Practical CT quality control should be included

Future Plans

- The program is scheduled for October-November 2006.
- The organisers consider to organise the program for technologists alternating with the training for medical physicists.