

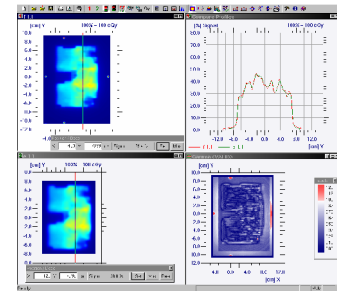
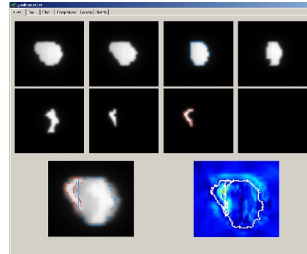
Hands-on course

Quality Assurance of Advanced Radiation Therapy

Coordinators: Iain Bruinvis, Ben Mijnheer, Emmy Lamers and Jelle Scheurleer

Dates: 21-APR-2009 – 25-APR-2009

Venues: INHolland University of Applied Sciences, Haarlem;
Netherlands Cancer Institute – Antoni van Leeuwenhoek Hospital, Amsterdam;
Vrije Universiteit medical centre, Amsterdam;
THE NETHERLANDS



Introduction

The various and rapid developments in the field of 3D imaging, treatment planning and treatment delivery have lead to more accurate and optimal radiotherapy (RT) treatments. Intensity Modulated Radiotherapy (IMRT) is an example of such a recent innovation and has been or will be soon implemented in many radiotherapy clinics. During this course the RT professional will acquire the necessary knowledge and skills to perform state-of-the-art *Quality Assurance of Advanced Radiation Therapy (QAART)* techniques, with special focus on IMRT.

The course “QAART” has been developed by the research group Medical Technology of INHolland University (INHU) of Applied Sciences, together with professionals from the RT departments of the Netherlands Cancer Institute – Antoni van Leeuwenhoek Hospital (NKI-AVL) and the Vrije Universiteit medical centre (VUmc). This course is the core part of a complete educational module but can be followed separately. The course itself will be given in collaboration with four companies offering QA equipment. The aim is an intensive course with optimum interaction between students and teachers. Therefore the number of participants will be restricted to 24, including the students that follow the complete module.

Target group and aims

The course is suitable for professionals with a bachelor’s degree or higher who have some experience in QA of RT. Potential participants include medical physicists (in training), dosimetrists, medical engineers and radiation therapy technologists (RTTs), working in RT departments. Physicists, engineers or RTTs working for companies producing RT products will also benefit from this course. We offer professionals involved in QA of RT a programme complementary to their basic training in radiotherapy. The module (course) is part of the MSc course *Radiation Oncology in Europe* and will be part of the *European Master Programme in Radiation Sciences for Oncology* (the Socrates *EMPIRION* project). After completion of the hands-on course the participants will be able to:

- perform QA checks of 3D conformal and IMRT treatment plans, using state-of-the-art methods;
- understand the principles of QA of advanced treatment planning and delivery techniques including RapidArc and VMAT;
- estimate the influence of various parameters on the accuracy of the treatment delivery process;
- critically analyse the possibilities and limitations of present day equipment for patient treatment verification;
- appraise the recent developments in QA of RT and contribute to the professional development of RT.

Contents

Interactive teaching sessions, focused on situations in clinical practice, are an important part of the course; various experts from renowned RT departments will share their experience in QA of advanced RT. The core

parts of the course are practical hands-on sessions, “QA labs”, given by a team of experts in the field in cooperation with the companies. These sessions are carried out in the School of Health of INHU and in the RT departments of the NKI-AVL and VUmc, where the participants will perform measurements and analyse data obtained using a variety of QA equipment. These hands-on exercises include:

- the application of decision rules applied in EPID set-up verification protocols;
- the analysis of film dosimetry data using gamma evaluation software;
- the performance of independent dose calculations;
- the use of various software packages for 1D and 2D IMRT verification;
- the clinical application of equipment for 2D and 3D verification of various IMRT techniques including VMAT and RapidArc.

QA equipment includes ionisation chamber and diode arrays, radiochromic film, 2D/3D digital systems and EPIDs, as well as independent dose calculation software. In this way experience and insight will be gained in the various ways to perform QA of IMRT techniques for various tumour sites in daily clinical practice.

Organisers and teachers

The course is organised by the INHolland Academy (www.inholland.nl/academy) together with the research group Medical Technology (www.inholland.nl/medicaltechnology) of INHU. The course director is Iain Bruinvis and the other organisers are Ben Mijnheer, Emmy Lamers and Jelle Scheurleer. The teaching faculty consists of medical physicists, medical engineers and RTTs from the Academic Medical Centre – University of Amsterdam (AMC-UVA), the Medical Centre Alkmaar (MCA), the NKI-AVL, the University Medical Centre Utrecht (UMCU) and the VUmc. RT-product company experts from IBA, PTW, ScandiDos and Sun Nuclear will also participate in the hands-on sessions. The course will be held in the English language.

Practical data

The hands-on course starts on Tuesday 21-APR-2009, ends Saturday afternoon 25-APR-2009 and consists of 38 study hours. All teaching sessions during the week will take place at the School of Health, INHU, Haarlem and the practical sessions on Saturday using linear accelerators will take place both at the VUmc and at the NKI-AVL. Registration for the course should be done by e-mail to Alexandra.vanZutphen@inholland.nl before 30-MAR-2009 (maximum number of participants 24). After registration an invoice will be sent for the fee of € 650. This fee includes course material, coffee, lunches and a welcome drink.

Further information

For more information about the course please contact Iain Bruinvis (e-mail Iain.Bruinvis@inholland.nl phone +31-647462133), Ben Mijnheer (e-mail Ben.Mijnheer@inholland.nl phone +31-20-5122203) or Jelle Scheurleer (e-mail Jelle.Scheurleer@inholland.nl phone +31-615279629). For all practical information, including accommodation in hotels, public transport from Amsterdam railway station and airport to the course venue, please contact the secretariat of the course: Alexandra van Zutphen, INHolland University of Applied Sciences, School of Health, Bijdorplan 15, 2015 CE Haarlem, The Netherlands. E-mail: Alexandra.vanZutphen@inholland.nl, phone: +31-23-5412802.