



International Atomic Energy Agency

IAEA/RCA Training Course on 3D Image-Guided Brachytherapy for Cervical Cancer (Advanced Course)

PROSPECTUS

- Project Number and Title:** Supporting 3 D Image-Guided Brachytherapy Services – RAS/6/062
- Place:** Saitama Medical University International Medical Center
Hidaka, Saitama, Japan
- Dates:** 29 September – 3 October 2014
- Deadline for Nominations:** 1 August 2014
(Please note that it will not be possible to consider the applications received after the deadline due to administrative reasons.)
- Organizers:** The International Atomic Energy Agency (IAEA) in cooperation with the Government of Japan
- Host Country Organizer:** Shingo Kato, Saitama Medical University
- IAEA organizers:**
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- Language:** English



Purpose: The purpose of the course is to provide to radiation oncologists and medical physicists with a comprehensive understanding of the clinical and physics aspects of 3D IGBT of cervical cancer in order to enable safe and effective implementation or further development of a 3D IGBT program in their institutions. The participants are expected to disseminate the acquired knowledge and skills in their own countries through national training/teaching programs.

Expected Output:

1. Comprehensive understanding of the basics of 3D IGBT for cervical cancer: target concept and delineation of targets and organs at risk; available imaging modalities and their advantages and limitations; patient stratification; basic brachytherapy physics (dosimetry and dose delivery for brachytherapy); applicator reconstruction; dose distribution optimization; dose reporting.
2. Understanding of quality assurance and quality control (QA/QC) in the application of 3D IGBT.
3. Training of brachytherapy professionals who will become trainers for the national training courses.

Scope and Nature: The course will be of a total of 5 days and will be financially supported by the IAEA. The course will consist of lectures and hands-on practical activities by IAEA-supported experts and local personnel. The course will be limited to approximately 30 participants, including local participants, from participating Member States.

The course will cover principles of 3D image-guided brachytherapy, understanding of which is essential for successful implementation or further development of 3D IGBT program. The course will cover following key topics: radiobiology related to brachytherapy, conditions and requirements for transition from 2D to 3D BT, imaging modalities/protocols relevant to IGBT, required infrastructure, organisation of workflow, brachytherapy physics and dose distribution optimization, target concept and dose reporting, QA/QC protocols, adaptive application techniques based on clinical and imaging findings. Practical activities will include: discussions of different clinical scenarios, hands-on training (actual practice and/or video viewing of operating theatres). In addition, experts will also share their experiences of setting up their 3D IGBT program to provide participants with practical and realistic expectation of the tasks and challenges inherent in the implementation of a new 3D IGBT program.



Background Information:

Cervical cancer is among the most common cancers in the region. Intracavitary or interstitial brachytherapy plays a major role in the treatment for these diseases. For several decades, brachytherapy treatments have traditionally been performed with X-ray-based two-dimensional (2D) treatment planning, and several reference points have been used as the standard dose-specific points (e.g. points A/B, rectal/bladder reference points defined by the International Commission on Radiation Units and Measurements in intracavitary brachytherapy for cervical cancer). However, the treatment planning based on reference points identified in 2D treatment plan is not the optimum treatment planning method in order to provide the most desirable treatment outcomes and avoid the complications in the normal organs at risk. Recently, 3D images acquired by computed tomography (CT) and magnetic resonance imaging (MRI) have increasingly been used for treatment planning of brachytherapy, as these imaging modalities provide more accurate information than X-rays on the spatial relationship of the radioactive sources, the tumour, and organs at risk (OARs). Treatment planning using 3D images also allows better quality assessment of the treatment using tools such as 3D dose distribution and dose-volume evaluation for tumour and OARs and thus leads to the optimized treatment for the individual patient. Several clinical studies have reported that this modern technology has improved local tumour control and decrease side effects and complications.

Participation:

Each country is encouraged to submit two nominations. It is most preferable that the nominees are a team of one radiation oncologist and one medical physicist from the same institution.

Participants' Qualifications:

All participants must have at least 3 years of experience in brachytherapy as practicing professionals in radiation oncology or medical physics. They should be members of departments that have the technology to be able to provide Image-Guided Brachytherapy. Preference will be given to individuals who are members of the National Project Teams and who will likely be able to transfer knowledge and skills to other professionals at the national level. The participants must fill the attached questionnaire and submit with the nominations. Information provided in the questionnaire will be used in selecting participants. Proficiency in English (the language of the course) is required.



Nomination Procedure:

Nominations (**including those of local participants**) should be submitted on the standard IAEA Application Form for Training Courses (available on the IAEA web-site: <http://www.iaea.org/>) Completed forms should be endorsed by relevant national authorities and returned to the Agency through official channels, i.e. the office of the National RCA Representative.

The applications should contain sufficient information to establish the nominees have the required qualifications. The nominated candidate may not be selected if sufficient information is not provided.

Applications must be received by the International Atomic Energy Agency, P. O. Box 100, A-1400 Vienna Austria, not later than **1 August 2014**. Nominations received after this date or which have not been routed through established official channels, cannot be considered.

Advanced nominations through facsimile (+43-1-2600-7), or e-mail (Official@iaea.org) are welcomed. The facsimile/e-mail should contain the following basic information about the candidate: name, date of birth, academic qualifications, and current position including the exact nature of the duties carried out, proficiency in English and full contact address including telephone/email/facsimile numbers.

Security in the Field:

It is recommended that the meeting participants complete the courses Basic Security in the Field: Safety, Health and Welfare (BSITF) and Advanced Security in the Field (ASITF), prior to traveling to locations where UN security phases are in effect. The aim of these courses is to educate participants on how best to avoid or minimize potential dangers and threats, and to show what individuals can do if they find themselves in insecure situations.

Access to the courses, further information and FAQ can be found under the following link, using Microsoft Internet Explorer:

<https://training.dss.un.org/consultants/index.php>

If you have difficulty using the websites, a CD-ROM can be obtained from your IAEA National Liaison Officer or from IAEA.

Once the candidate has completed the courses and passed the accompanying exams, certificates will be generated automatically and must be printed for submission to the IAEA (either as an e-mail attachment or by fax). Copies of the certificate should be kept by the



candidate for his / her records, as they are valid for a period of three years.

**Administrative and
Financial Arrangements:**

Nominating Governments will be informed in due course of the names of the candidates who have been selected and will, at that time, be given full details on the procedures to be followed with regard to administrative and financial matters.

Selected participants from countries eligible to receive technical assistance will be provided with a round trip economy class air ticket from their home countries to Saitama and a stipend sufficient to cover the cost of their accommodation, food, and minor incidentals. Shipment of accumulated training course materials to the participants' home countries is not the responsibility of the IAEA.

The organizers of the training course do not accept liability for the payment of any cost or compensation that may arise from damage to or loss of personal property, or from illness, injury, disability or death of a participant while he/she is travelling to and from or attending the course, and it is clearly understood that each Government, in nominating participants, undertakes responsibility for such coverage. Governments would be well advised to take out insurance against these risks.



Questionnaire to be filled out by nominees for participation in the regional training courses held under RAS/6/062

Name: _____

Institution: _____

Nature of position: _____

Yes No

Do you have at least 3 years of experience in brachytherapy as a practicing professional in radiation oncology or medical physics?

Are you familiar with at least the basic concepts of 3D image-based brachytherapy (IGBT)?

Are you from a department which has equipment capable of planning and delivering quality assured 3D IGBT or is expected to acquire these in the near future?

Are you able to transfer the knowledge and skills from the course and train at the national level?

Are you a member of the National Project Team formed under the project?