



IAEA

International Atomic Energy Agency

Atoms for Peace and Development

(Virtual event)
**International Conference on
Advances in Radiation Oncology
(ICARO-3)**

IAEA Headquarters

16–19 February 2021

**Organized by the
International Atomic Energy Agency (IAEA)**

Announcement and Call for Papers

A. Introduction

The International Atomic Energy Agency (IAEA) is organizing the third International Conference on Advances in Radiation Oncology (ICARO-3), following the successes of the first and second conferences (ICARO-1 and ICARO-2), which were held in 2009 and 2017. The advances in radiotherapy in the last years have been striking, although numerous challenges remain, including

achieving access to high standard cancer care in many countries. New radiotherapy techniques have been implemented in the past decades, including three-dimensional conformal therapy, stereotactic radiotherapy, intensity modulated radiation therapy, image guided and stereotactic body radiation therapy, tomotherapy, new brachytherapy and unsealed-source techniques, and proton and heavy ion therapy. The increased use of these complex techniques, coupled with the need to treat more patients in less time, will continue to drive a reliance on high-end technologies and impose a financial burden on health care programmes. In addition, the development and implementation of quality assurance programmes for these new techniques pose major challenges in Member States.

The conference will give health care professionals an opportunity to review the current developments in clinical applications in the fields of radiation oncology, radiation biology and medical physics, with a view to addressing the challenges of appropriate cancer management in Member States.

It will also critically examine the pivotal role of emerging radiotherapy techniques in tackling the health challenges common to many Member States.

An appropriate number of accredited continuing medical education (CME) credits will be awarded to participants.

B. Objectives

The conference is aimed at defining the current role and future potential of technological, medical physics and molecular/biological innovations for their incorporation into routine clinical practice in radiation oncology. It will also provide a forum where advances in technology, best practices and quality assurance methodologies can be disseminated and scientific knowledge exchanged. The conference will have the following specific objectives:

- To review the current role and future potential of technological, medical physics and molecular/biological innovations for clinical use in radiation oncology
- To explore the applications of improved imaging tools in treatment planning
- To review the current status of evidence-based recommendations for the treatment of common cancers
- To review the latest developments in medical dosimetry and dose auditing procedures for new radiotherapy techniques
- To review the current status of comprehensive audits in radiotherapy
- To review resource sparing approaches in clinical radiotherapy practice
- To exchange information on the current advances and implementation challenges in the field among leading experts
- To define future challenges and directions in the clinical use of radiotherapy

C. Format and Topics

The conference programme will include plenary and parallel sessions, poster sessions, round-table discussions, lunch forums and teaching lectures.

The **plenary sessions** will include topics of interest to all participants such as personalized medicine, recent technological, physical and clinical developments, quality assurance, challenges and solutions, and health care economics.

Parallel sessions will cover detailed developments and recent findings related to clinical and physical aspects of radiotherapy.

Poster sessions will be dedicated to discussions and interactions with colleagues.

Round-table discussions will address specific challenges from different perspectives and **lunch forums** will review potential solutions to these challenges such as telemedicine and transitioning to paperless radiotherapy departments.

The **teaching lectures** will provide an opportunity for continuous professional development for all participants.

The IAEA invites participants to provide high quality contributions on all aspects of radiotherapy. The topics to be addressed during the conference will be centred on technological as well as biological, medical physics and clinical advances, and should consider real clinical settings in all Member States. Both academic and practice-based papers under the umbrella of the following topics will be considered:

- Technological advances and challenges
- Roadmap for setting up modern radiation oncology facilities
- New treatment and imaging techniques and clinical evidence
- Health economics in radiotherapy
- Developments in treatment planning
- Small field dosimetry
- Auditing procedures
- Personalized medicine
- Advances in the treatment of recurrent patients
- National cancer control strategies
- Developments in quality assurance and new approaches to quality management
- Safety in radiation therapy
- Intensity modulated radiotherapy, including arc-based approaches
- Image-guided radiotherapy
- Stereotactic body radiotherapy
- Particle therapy
- Telemedicine
- Radiobiology
- Spatially fractionated radiation therapy

- FLASH therapy
- Combined therapies
- Paediatric radiotherapy
- Clinical research
- Applied brachytherapy
- Education and training of professionals

D. Target Audience

This conference will offer an opportunity to review the latest technological, clinical and biological developments that are relevant to radiotherapy, and the main target audience therefore comprises:

- Radiation oncologists
- Radiobiologists
- Medical physicists
- Technologists

The conference would also be of interest to scientists, researchers and biomedical engineers working in the field of radiotherapy.

E. Expected Outcomes

The conference will provide clinicians, scientists and other professionals with an overview of technological achievements in the field of advanced radiotherapy techniques and of their potential future therapeutic benefits, as well as provide a summary of progress made in the molecular/biological modification of tumour and normal tissue responses, and of advances in medical physics. Also, the proceedings of the conference will document the impact of new technological and biological tools in current clinical practice and the likely future integration of the knowledge and tools in radiotherapy, preferably using clinical trials as a suitable matrix for providing robust data for future clinical implementation. A review of the effectiveness and limitations of the current quality assurance programmes will be completed and new innovative processes will be disseminated.

F. Papers

Contributions on the topics listed in Section C above are welcome as oral or poster presentations. All submissions, apart from invited papers, must present original work and should not have been published elsewhere.

F.1. Submission of Synopses

Synopses (up to two printed A4 pages, including not more than one figure, graph or table, no references) must be uploaded to the conference's web browser-based file submission system (IAEA-INDICO) which will be available on the conference web page (see Section P) from **9 April to 30 September 2020**. No other submission route will be accepted. Specifications for the layout will be available on IAEA-INDICO.

In addition, authors must electronically submit the following two forms to their appropriate governmental authority (see Section G) for transmission to the IAEA. These forms must be received by the IAEA no later than **30 September 2020**.

- Participation Form (Form A)
- Form for Submission of a Paper (Form B)

IMPORTANT: The uploaded synopses will be considered by the Programme Committee only if these two forms have been received by the IAEA through the established official channels (see Section G).

F.2. Acceptance of Synopses

The Secretariat reserves the right to exclude synopses that do not comply with its technical or scientific quality standards and/or that do not apply to one of the topics in Section C above.

The number of contributions that can be accepted for oral presentation is limited. Authors who prefer to present their papers as posters are requested to indicate this preference on Form A and in INDICO, at the time of submitting their extended synopsis.

Authors will be notified by **15 October 2020** as to whether their submission has been accepted for presentation at the conference, either orally or as a poster.

G. Participation and Registration

All persons wishing to participate in the conference must be designated by an IAEA Member State or should be members of organizations that have been invited to attend. The list of invited organizations will be available on the conference website (see Section P).

In order to be designated by an IAEA Member State, participants are requested to send the following form(s), as applicable, to their competent national authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority):

- Participation Form (Form A): participation only; no deadline if only Form A is submitted.
- Form for Submission of a Paper (Form B): participants submitting a paper through INDICO must send the completed and signed Form B together with Form A to their competent national authority for onward transmission to the IAEA (Official.Mail@iaea.org) by **30 September 2020**.

Participants who are members of an organization invited to attend are requested to send the above form(s) through their organization to the IAEA (Official.Mail@iaea.org).

In addition, participants are requested to pre-register online through the IAEA web page for the conference.

H. Distribution of Documents

A preliminary programme of the conference will be made available on the conference web page (see Section P) before the start of the conference. The final programme and all accepted synopses will be available to all officially designated participants shortly before the conference.

I. Exhibitions

A virtual exhibition is planned. Details will be discussed with interested exhibitors.

J. Working Language

The working language of the conference will be English.

K. Venue and Accommodation

The conference will be held virtually.

L. Key Deadlines

Submission of synopses through IAEA-INDICO	30 September 2020
Submission of Form B (together with Form A) through official channels	30 September 2020
Notification of acceptance of extended synopsis for oral or poster presentation	15 October 2020
Submission of Form A only	No deadline

M. Conference Secretariat

General postal address and contact details of the IAEA:

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Subsequent correspondence on scientific matters should be sent to the Scientific Secretaries, and correspondence on administrative matters to the Conference Services Section.

N. Conference Web Page

The IAEA web page for the conference is as follows:

<https://www.iaea.org/events/icaro-3>

It will be updated regularly with new information, and participants are encouraged to check it on a regular basis.