



HERCA Working group on Medical Applications

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Information paper: Summary and Final Report of HERCA MedInspector Workshop in Radiotherapy

May 2024

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HERCA-Working Group on Medical Applications: Summary and Final Report of HERCA MedInspector Workshop in Radiotherapy

1. Introduction

1.1. Context

Justification and optimisation are two of the fundamental principles in radiation protection and, according to the European Basic Safety Standards (BSS), must be carried out for every individual exposure. Regulatory bodies have an important role in promoting and supervising that optimisation is properly implemented in radiotherapy.

1.2. Scope

The workshop covered the field of radiotherapy and focused on typical external beam radiotherapy with electron linear accelerators. How to inspect the implementation of optimisation and good radiation safety practice were the main topics. The workshop provided a platform to bring together senior inspectors from Europe, to exchange practical ideas and experiences that has contributed to good practices in the inspection of radiation safety and optimisation in radiotherapy. It was not intended as a course/school for young and unexperienced inspectors. Therefore, the target group of this workshop were inspectors with several years' experience of inspecting radiotherapy facilities.

1.3. Objectives

Main objectives were the dissemination and harmonisation of good inspector practices throughout Europe and to identify challenges and areas for improvement. Furthermore, a large part of the workshop was devoted to the discussion on how onsite inspection can be used as an effective tool for implementing the principle of optimisation and radiation safety in radiotherapy.

1.4. Program

The workshop was held over 2.5 days. The first part of the workshop consisted of presentations given by invited speakers, highlighting some of the current issues relevant to radiotherapy inspections. The second part of the program was devoted to discussions within working groups to enable participants to share good practices and challenges.

1.5. Participants

The MedInspector workshop was dedicated to senior radiotherapy inspectors. Each member state had the possibility to nominate 2 inspectors. Finally, 35 inspectors from 19 countries, representing 24 organisations have participated. Additionally, 7 experts in radiotherapy were invited as speakers. Together with 4 HERCA members of the organisation and program committee, a total 46 participants were present.

2. Summary and General Findings

The interesting introductory presentations on the first day by the invited speakers proved to be a door opener for an animated and successful workshop for all participants. It is important to acknowledge the great commitment of the invited experts, who were also extremely engaged in the subsequent working groups. In general, the exchange between the invited experts, who are usually practitioners in radiotherapy, and the inspectors was very fruitful.

2.1. Key messages from the workshop

- Inspectors must be able to keep up with state-of-art radiotherapy by initial and regular training in medical radiotherapy units.
- A need to define relevant competences for regulatory inspectors were identified
- Planning of a European training courses for radiotherapy inspectors to foster inspector competences was suggested. A strong involvement of IAEA should be anticipated in such an initiative.
- Regular dosimetry audits act as a good tool to identify systematic errors in dosimetry and could be set up nationally or also internationally by competent organizations.
- Fostering the Safety Culture in medical facilities is an important future task.
- Regulatory bodies should have a Quality Management System in place.

2.2. The workshop identified the following possible future HERCA initiatives/actions

1. Patient dose from CT and CBCT in radiotherapy

- Initiate a dialogue with COCIR:
 - To provide a standardized dose indicator for CBCT
 - Need for integration of CT and CBCT doses in the patient treatment plan
- Initiate a European survey on doses from CT and CBCT in radiotherapy as an input to optimization in collaboration with the main stakeholder

2. Inspector competence in radiotherapy

- Define the relevant competences for regulatory inspectors in radiotherapy
- Planning of European training courses for junior radiotherapy inspectors together with IAEA
- Organize follow-up meeting of the MedInspector workshop for senior inspectors in 2025

These identified initiatives/actions will be presented to HERCA WGMA for further discussion.

A special thanks goes to our Finnish hosts who had organized the workshop wonderfully and spoiled us with great hospitality.

Annexe - Programme

7.-9. June 2023

Vantaa, Finland

Day 1 – Introduction and Presentations	
9:00	Opening Information (Petra Tenkanen-Rautakoski)
09:15	Setting the Scene (Eva Friberg, Philipp Trueb)
09:30 – 10:30	Role and Task of a modern Radiation Protection Authority in Health Care (Philipp Trueb)
10:30 - 10:50 – Coffee Break	
10:50 – 11: 20	Challenges in Radiation Safety, Role of EFOMP in Radiation Safety, Role of Inspections by the Authority, future needs for regulations in RT (Eeva Boman)
11:20 – 11:50	Challenges in Radiation Safety, Role of ESTRO in Radiation Safety, Role of Inspections by the Authority, future needs for regulations in RT (Mary Coffey)
11:50 – 12:10	Discussions
12:10 – 13:00 Lunch	
13:00 – 14:30	<u>Improving inspector competence 1</u> <ul style="list-style-type: none"> • Quality Assurance of External Beam Radiotherapy Mohammed Ali Ghazal (Karolinska University Hospital) • Dosimetry protocols of External Beam Radiotherapy Ilkka Jokelainen (STUK) • Technical documentation of Authorisation and Inspection Jenia Vassileva (IAEA) • Discussions
14:30 - 14:50 – Coffee Break	
14:50 – 16:20	<u>Improving inspector competence 2</u> <ul style="list-style-type: none"> • Sufficient staffing in a radiotherapy unit Patrick Horton (EPA consultant) • Safety in radiotherapy: responsibilities of health professionals Jenia Vassileva (IAEA) • Experience after Epinal, Risk assessment Carole Rouse (ASN) • Discussions
16:30 – 17:00	Summary of the day and introduction to working groups (Eva, Philipp)
17:00	Welcome Reception – get together

Day 2 - Workshops	
08:30 – 10:00	<p>Session 1: How to inspect radiation safety measures?</p> <ul style="list-style-type: none"> • Introduction to the working groups (Philipp Trueb) • Working Groups <p><u>WG1</u>: Use of technical support organisations (TSO) and other external bodies (Moderator1, Rapporteur1)</p> <p><u>WG2</u>: Imaging for treatment planning (Moderator2, Rapporteur2)</p> <p><u>WG3</u>: Safety culture (Moderator3, Rapporteur3)</p>
10:00 - 10:30 – Coffee Break	
10:30 – 12:00	<p>Session 2: How to inspect the patient dosimetry?</p> <ul style="list-style-type: none"> • Working Groups <p><u>WG4</u>: Therapy planning and dosimetry (M4, R4)</p> <p><u>WG5</u>: Verification of patient dosimetry calculations (M5, R5)</p> <p><u>WG6</u>: Phantom measurements and in-vivo dosimetry (M6, R6)</p>
12:00 – 13:15 Lunch	
13:15 – 14:45	<p>Session 3: How to inspect the quality assurance?</p> <ul style="list-style-type: none"> • Working Groups <p><u>WG7</u>: QA Handbook and Patient tracks description (M7, R7)</p> <p><u>WG8</u>: Technical quality assurance by staff and vendor (M8, R8)</p> <p><u>WG9</u>: Incident management (M9, R9)</p>
14:45 - 15:15 – Coffee Break	
15:15 – 17:00	Summary and discussions on results from working group radiation protection measures (R1-3)
17:00	End
20:00	Official Workshop Dinner

Day 3 - Conclusions	
08:30 – 10:00	Summary and discussions on results from working group patient dosimetry (R4-6)
10:00 - 10:30 – Coffee Break	
10:30 – 12:00	Summary and discussions on results from working group quality management (R7-9)
12:00 – 13:00 Lunch	
13:00 – 14:00	Feedback, Conclusions and Outlook (Eva Friberg, Philipp Trueb)
14:00	End of Workshop