

Topic 5: Interdisciplinary Practice & Leadership for Medical Physicists



This document provides a framework and guidance for the Expert Working Group on Interdisciplinary Practice & Leadership, with a specific focus on the roles and responsibilities of medical physicists in multidisciplinary teams (MDTs) and their broader leadership contributions to clinical practice. The goal is to identify research needs, gaps in professional education, university foundation knowledge, and CPD (Continuing Professional Development) requirements, ensuring that medical physicists are equipped to work effectively within interdisciplinary teams and contribute to leadership in healthcare.

:: 5.1: The Role of Medical Physicists in the MDT ::

POTENTIAL KEY AREAS TO EXPLORE

- **Traditional vs Emerging Roles in Radiation Oncology, Nuclear Medicine, Diagnostic and Interventional Radiology:**
 - What are the traditional roles of medical physicists in radiation oncology, nuclear medicine, diagnostic radiology, and interventional radiology? How have these roles evolved in response to technological advancements and changes in clinical practice?
 - How can medical physicists further expand their roles in these fields, especially with the advent of theranostics, AI, and precision medicine?
- **How to Articulate Value to Clinical Teams:**
 - What is the value proposition of medical physicists to clinical teams? How can medical physicists effectively communicate their contributions to treatment planning, safety, and technology implementation within the MDT?
 - What strategies can medical physicists use to enhance their visibility and impact within the team?
- **Cross-Disciplinary Communication Techniques:**
 - How can medical physicists improve cross-disciplinary communication with clinicians, radiologists, nurses, and other healthcare professionals?
 - What are effective communication strategies for medical physicists to articulate complex technical information to non-technical team members?

POTENTIAL EVALUATION QUESTIONS AND APPROACHES

- **Research Needs:** What are the gaps in research around interdisciplinary roles for medical physicists? How can medical physicists expand their contributions to emerging clinical practices?
- **Future Education Courses:** Should medical physics programs include specific training on interdisciplinary collaboration and communication techniques? How can programs ensure that students are prepared for effective teamwork across clinical specialties?
- **University Foundation Knowledge:** What foundational knowledge in team dynamics, leadership, and effective communication should be integrated into medical physics curricula to foster collaborative skills?
- **CPD Requirements:** What CPD modules should be developed to improve communication skills, leadership capabilities, and teamwork for practicing medical physicists working in multidisciplinary teams?

:: 5.2 MDT Case Examples ::

POTENTIAL KEY AREAS TO EXPLORE

- **Radiotherapy Planning for Rare Cancers:**
 - How do medical physicists contribute to radiotherapy planning for rare or complex cancers? What are the challenges in tailoring radiation treatment plans for these cases, and how do medical physicists collaborate with the MDT to ensure optimal outcomes?
 - How can medical physicists share their expertise in dosimetry and treatment planning to enhance decision-making in these rare cases?
- **Theranostics Patient Selection and Evaluation:**
 - How do medical physicists contribute to patient selection for theranostic treatments? What role do they play in evaluating imaging results, radiopharmaceutical selection, and the overall treatment plan?
 - How can medical physicists collaborate with other team members in theranostic workflows to ensure accurate patient evaluation and personalised treatment?
- **Surgical Planning with Image-Guided Surgery/Interventional Procedures:**
 - What is the role of medical physicists in image-guided surgery and interventional radiology procedures? How do they assist in planning and ensuring precision in procedures that require complex imaging (e.g., MR-guided surgery, CT-guided interventions)?
 - How do medical physicists ensure the integration of radiation protection and image quality during these procedures?

POTENTIAL EVALUATION QUESTIONS AND APPROACHES

- **Research Needs:** What research is required to improve multidisciplinary workflows in radiation oncology, theranostics, and image-guided surgery? How can medical physicists help optimise these clinical practices?
- **Future Education Courses:** Should medical physics programs incorporate case-based learning that focuses on interdisciplinary decision-making, such as rare cancer treatment, theranostics, and image-guided surgery?
- **University Foundation Knowledge:** What core knowledge in multidisciplinary planning, treatment optimisation, and clinical collaboration should be integrated into medical physics curricula?
- **CPD Requirements:** What CPD programs should be designed to ensure medical physicists are equipped to participate effectively in complex clinical case planning and contribute to innovative treatment strategies in the MDT?

:: 5.3: Strategies for Broader Clinical Contribution ::

POTENTIAL KEY AREAS TO EXPLORE

- **Building Rapport with Clinical Leads:**
 - How can medical physicists build strong professional relationships with clinical leads (e.g., oncologists, surgeons, radiologists)? How do these relationships enhance their influence and ability to contribute to decision-making in the MDT?
 - What strategies can medical physicists employ to establish themselves as key contributors in clinical decision-making and treatment planning?
- **Participating in Tumour Boards and Planning Meetings:**
 - How do medical physicists actively contribute to tumour boards and multidisciplinary planning meetings? What is the role of the physicist in evaluating clinical data, optimising treatment plans, and ensuring radiation safety during treatment discussions?
 - How can medical physicists prepare for and engage effectively in these critical team discussions?
- **Translating Technical Knowledge into Clinical Insight:**
 - How do medical physicists translate their technical expertise into actionable clinical insights? How can they help the clinical team understand the implications of complex physics concepts and ensure that treatments are tailored to patients' needs?
 - What role do medical physicists play in bridging the gap between technical understanding and clinical application during decision-making processes?

POTENTIAL EVALUATION QUESTIONS AND APPROACHES

- **Research Needs:** What research is needed to improve the integration of medical physicists in clinical leadership and decision-making roles within the MDT? How can medical physicists contribute more effectively to clinical outcomes?
- **Future Education Courses:** Should medical physics programs include courses or modules on leadership, team collaboration, and clinical communication? How can programs better prepare students for active participation in tumour boards and clinical meetings?
- **University Foundation Knowledge:** What foundational knowledge in leadership and communication skills should be incorporated into medical physics curricula to foster greater involvement in clinical decision-making?
- **CPD Requirements:** What CPD modules should be developed to enhance the leadership skills and clinical insight of practicing medical physicists in the MDT? How can medical physicists be better trained to translate technical knowledge into clinical practice?