Chapter 2
How Radiation Protection Influences Quality in Radiology

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Abstract Radiation safety is a key quality element in medical imaging and interventional radiology. Radiologists, referrers and other practitioners involved in the use of radiation medicine must be properly trained in radiation protection (RP) to ensure quality care and patient safety. Workforce shortage, workload increase, workplace changes, and budget challenges are emerging issues around the world, which could place quality at risk. Selecting the right procedure by justification, using the right dose and choosing adequate imaging data by optimization, and preventing errors along the patient journey must be considered and applied in practice. This chapter describes the positive impact of RP to quality in imaging and intervention through justification and optimization actions, including the use of Diagnostic Reference Levels (DRL) and individual patient dose recording and tracking. The relevant International Commission on Radiological Protection (ICRP) recommendations are highlighted together with a discussion on a wider cooperation between relevant professional groups, industry and other stakeholders. A set of actions to improve RP in quality programs for medical imaging and interventional radiology is suggested. It is concluded that RP and radiation management are integral elements for quality in imaging and intervention. Radiation safety topics should be covered in education and training programs and research projects in radiation medicine. While an individual action addresses a certain aspect of RP, collectively these actions will improve quality in medical imaging and

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L. Lau and K.-H. Ng (eds.), Radiological Safety and Quality: Paradigms in Leadership and Innovation, DOI 10.1007/978-94-007-7256-4_2,
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