

2026



ASMIRT

Guidelines

PROFESSIONAL PRACTICE STANDARDS

Your profession. Your future.



There are a number of protected titles for medical radiation practice. They include:

Medical Radiation Practitioner (MRP)

Diagnostic Radiographer (DR)

Medical Imaging Technologist (MIT)

Radiographer

Nuclear Medicine Scientist (NMS)

Nuclear Medicine Technologist (NMT)

Radiation Therapist (RT).

For the purposes of our documentation we use the broad descriptor Medical Radiation Practitioner (MRP) recognising that it covers a range of areas of practice.



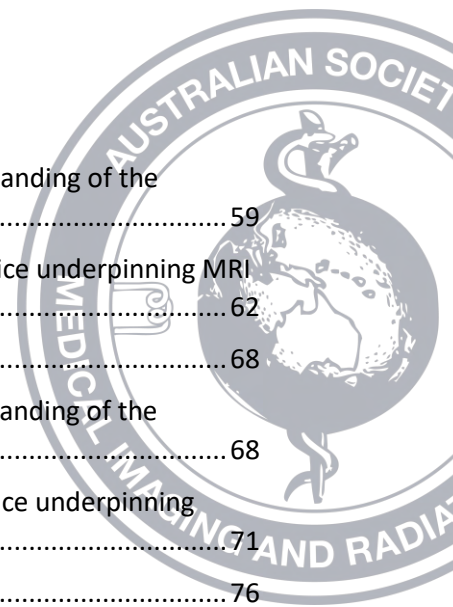
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Ownership

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Introduction

The Professional Practice Standards (to be known as the Standards throughout the rest of the document) describe the performance benchmarks for Medical Radiation Practitioners (MRP) eligible for a Statement of Compliance.

The Standards provide a framework for professional, patient and community expectations. The Standards aim to integrate the skills, knowledge and understanding that support Medical Radiation Practitioners with the unique attributes and attitudes of these disciplines. This document is the foundation of what will be a series outlining standards required for escalating levels of practice.

The Standards have several purposes:

- To provide standards of practice for the accredited practitioner
- To provide standards necessary to assess overseas applicants for practice in Australia
- To provide a statement on the status of the profession in the community
- To provide government bodies such as Australian Education International National Office for Overseas Skills Recognition (AEI-NOOSR) and the Department of Education Science and Training (DEST) with information regarding best practice in the profession
- To provide a resource for the development of industrial awards
- To provide a foundation for a framework for higher levels of practice and career structure
- To support health practitioner registration and radiation licensing processes
- To provide a resource for students and practitioners.

This document is the specification of standards, incorporating academic, clinical and professional elements for a practitioner to embody the principles of practice recognised and encouraged by the profession. This document should be read and interpreted in the context of a graduate practitioner being at the minimum level of Australian Qualifications Framework (AQF 7) (Australian Qualifications Framework, 2013).

The format of the document is modularised to assist with enabling access to specific information and cross-referencing domains throughout the standards. As a result, this document has some elements of repetition throughout.

History of the Standards

In 2005 the Australian Institute of Radiography (now known as the ASMIRT) released an updated version of the Competency Based Standards (CBS) following substantial review of the existing 1998 standards by the Professional Accreditation and Education Board (PAEB). During the development of the 2005 CBS document, the PAEB reviewed the approach taken by other Allied Health disciplines both locally and internationally. A significant shift in the philosophy



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underpinning the 2005 CBS was the development of standards based on outcomes rather than the previously utilised task orientated style.

Following the development of the 2005 standards in draft form, consultation was sought from:

- Radiation Therapists and Radiographers representing State Branches
- Specialist Panels of the AIR (Australian Institute of Radiography)
- Academic Institutions
- Regulatory bodies.

Information gathered from this consultation process was used to update the draft and finalise the Standards, which were published in November 2005.

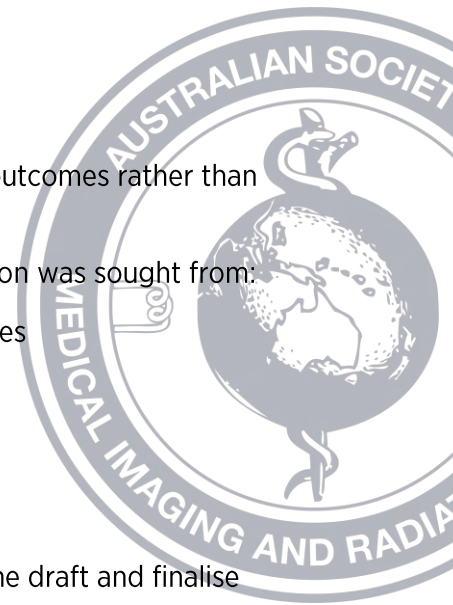
The 2005 CBS identified five standards common in many of the standards of other health professions. These were:

1. Knowledge and Understanding
2. Critical Thinking and Evaluation
3. Professional and Ethical Practice
4. Care and Clinical Management
5. Lifelong Learning

These standards were seen to provide a means of identifying general expectations about the professional practice, attributes and capabilities of Radiation Therapists and Radiographers entering employment immediately following attainment of the AIR Validated Statement of Accreditation. The standards were supported by descriptors and outcome statements.

In 2010 Darcy and Associates were commissioned to conduct a literature review of the CBS and report back to the ASMIRT. This report was also made available to the Council of Regulating Authorities (CORA). Darcy and Associates compared the current standards of practice for medical radiation professionals in Australia, New Zealand, Canada and the United Kingdom, and also examined standards in use by other health professions within Australia. The Darcy and Associates Report maintained that the five standards appeared to be working well for the profession but left open the discussion of what competence was and the part it played in professional activities. The report suggested that by discussing competence as it related to the profession the structural foundation of the revised standards could be organised into domains of competence. This led to the development of the Professional Practice Standards, released in 2012.

In 2013, the Medical Radiation Practice Board of Australia (MRPBA) published professional capabilities, and these were subsequently revised, and an updated version was published in 2019. In recent years changes to the MRP professional scope in some jurisdictions has led to this review and revision of the Standards by the Professional Standards Committee





Medical Radiation Practitioners

Medical Radiation Science (MRS) is the professional practice of providing a range of diagnostic imaging and therapeutic procedures using ionising or non-ionising radiation. MRS encompasses the fields of radiography, sonography, nuclear medicine and radiation therapy. Medical Radiation Practitioners (MRP) are registered health professionals responsible for using radiation to:

- Diagnose pathology and disease
- Enable visualisation of internal organs to assist in surgical and medical procedures
- Identify extent of disease to aid diagnosis and treatment.
- Treat cancer, benign diseases or muscular complaints

MRPs may be known as radiographers, medical imaging technologists, sonographers, nuclear medicine scientists / technologists or radiation therapists, dependent on role.

Key aspects of the MRS profession include:

- Providing patient centred care and advocating for patients
- Respecting patients' privacy and maintaining confidentiality
- Complying with legal and ethical requirements
- Explaining procedures to patients and carers and answering questions within scope of practice
- Communicating and collaborating with the health professional team to ensure the needs of the patient are met to provide the best outcome for the patient
- Documenting all patient interactions in the medical record as per local and national standards
- Produce images for diagnosis or facilitate the delivery of therapy
- Using clinical knowledge to problem solve and adapt procedures or approaches to patient care
- Performing quality assurance checks on equipment, images and procedures
- Ensuring that justification and optimisation of ionising radiation is in accordance with the ALARA principle
- Ensuring patient safety through quality management and improvement processes
- Reporting and monitoring incidents to learn from errors
- Engaging actively in clinical education, training and supervision
- Engaging in research, development and implementation of emerging technology and practice
- Continuing to develop professionally to ensure best practice is provided
- Advocating for patients and the profession





Structure of Professional Practice Standards

The professional standard format comprises of five levels:

- Domain
- Standard
- Element
- Indicator
- Cues

Domain

The standards have been grouped together into domains of professional responsibility. The six domains are:

1. Professional and Ethical Practice
2. Communication, Teamwork and Autonomy
3. Knowledge and Understanding
4. Critical Thinking and Evaluation
5. Service Delivery and Clinical Management
6. Lifelong Learning.

It is relevant to note that the order in which the domains are presented does not indicate an order of importance.

- Standards

Each standard describes the professional activity to be assessed or demonstrated. The standards are the explicit requirements of the MRP as they practice in the clinical environment.

- Elements

The standards are further broken down into elements. These describe the key components or responsibilities within the standard.

- Indicators

Indicators describe the performance criteria associated with each element. They represent actions which should be evident in the daily clinical practice to ensure the standards are being met.

- Cues

Cues are intended to aid with clarification of the indicators of performance.





Domain 1: Professional and Ethical Practice

| | |
|--------------|---|
| Standard 1.1 | Practises within the Legal Framework |
| Standard 1.2 | Practises to the standards defined by the profession |
| Standard 1.3 | Fulfils the duty of care in clinical practice |
| Standard 1.4 | Provides patient centred care |
| Standard 1.5 | Establishes and maintains effective interpersonal relationships with patients and their support persons |
| Standard 1.6 | Is culturally sensitive and responds appropriately |

This domain deals with the standards that relate to the legal, ethical and professional responsibilities of MRPs. Professional behaviour and conduct is expected at all times. MRPs have:

- a duty of care to both their patients and other health professionals with whom they interact.
- an obligation to demonstrate professional capability, and to only undertake procedures within their own scope of practice.

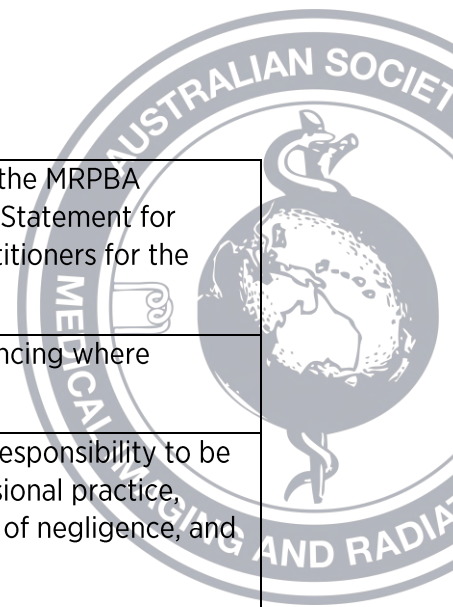
Practice is regulated by statute and common law. ASMIRT provides Guidelines for Professional Conduct for Medical Radiation Professionals and a Code of Ethics. Professional practice consistent with the standards outlined in this domain ensures that procedures performed are of consistent and reliable quality.

Standard 1.1 Practises within the Legal Framework

This standard relates to the legislative requirements that impact on the professional practice of the MRP. It delineates the requirement to practise according to the codes, guidelines and standards that have been set by regulatory bodies and ASMIRT.

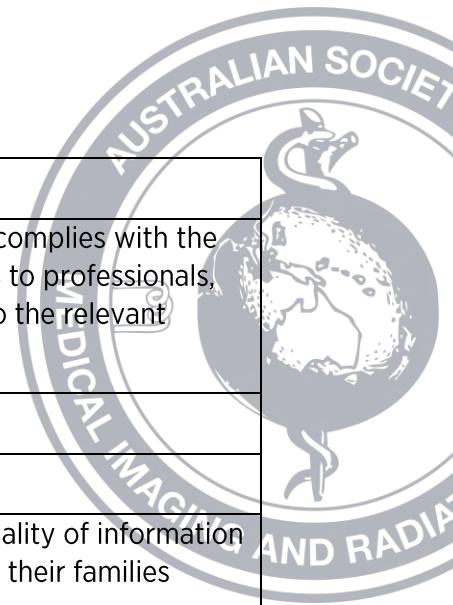
| Element 1: Practises in accordance with statute law and the ASMIRT Code of Ethics, Guidelines for Professional Conduct, and Professional Practice Standards | |
|---|---|
| Indicators | Cues |
| 1. Understands and applies the obligations of statute law as it relates to the delivery of their professional services | Has an awareness of the statutory role of the MRPBA/regulatory body |
| | Maintains professional registration meeting the standards set out by the national law governing the regulation of Medical Radiation Practitioners |
| | Complies with the Code of Conduct of the regulatory authority |





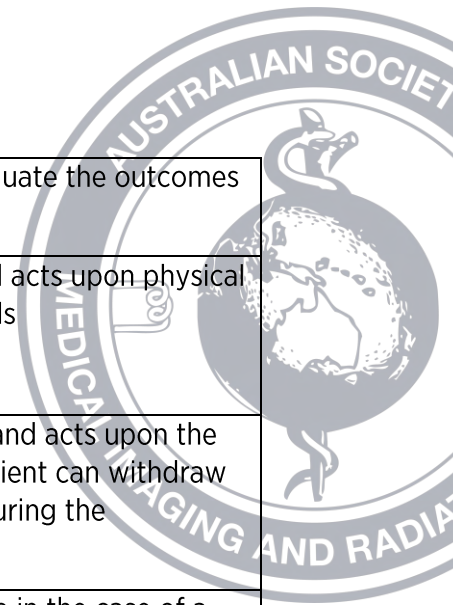
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| | Meets requirements of the MRPBA Professional Capability Statement for Medical Radiation Practitioners for the relevant division. |
| | Maintains radiation licencing where applicable |
| | Understands the legal responsibility to be accountable for professional practice, including avoiding acts of negligence, and acts appropriately |
| | Recognises and understands the legal implications of professional misconduct or negligence |
| 2. Executes the legislative obligations that are relevant to the provision of their professional practice | Demonstrates safe practice within the framework of current legislation that governs the use of radiation and pharmaceuticals for medical purposes |
| | Only undertakes procedures which have been requested by an authorised person as defined by the regulatory authority |
| | Ensures that operational policies and procedures comply with the legislative requirements governing the use of radiation and pharmaceuticals |
| | Understands and executes the legal requirements of maintaining a safe workplace under Work Health and Safety legislation |
| | Understands and executes the requirements of relevant legislation to professional practice in a healthcare setting |
| 3. Practises in accordance with the Code of Ethics and the Code of Professional Conduct of ASMIRT | Knowledge of and compliance with Code of Ethics and Professional Conduct of ASMIRT |
| 4. Practises in accordance with the Professional Practice Standards of ASMIRT | Knowledge and compliance of the Professional Practice Standards of ASMIRT |
| Element 2: Practises in a manner that upholds the patient’s right to privacy. | |





| Indicators | Cues |
|--|--|
| 1. Knowledge of the legislation relating to privacy | Has knowledge of and complies with the Privacy Act as it relates to professionals, and can direct others to the relevant documents |
| Element 3: Ensures confidentiality of information | |
| Indicators | Cues |
| 1. Understands the importance of patient confidentiality | Respects the confidentiality of information relating to patients and their families |
| | Complies with statutory reporting requirements |
| 2. Upholds the local Privacy and Confidentiality policies | Complies with privacy legislation when sharing patient information for professional and procedure purposes |
| 3. Ensure that patient confidentiality is upheld | Disposes of identified patient information in an appropriate manner |
| | Complies with legislative requirements and local policies when using patient data |
| Element 4: Ensures that procedures are undertaken with the appropriate consent | |
| Indicators | Cues |
| 1. Understands the importance of patient consent | Clearly explains procedures to the patient before commencing the examination or treatment |
| | Employs the use of an interpreter when required |
| 2. Ensures informed consent has been obtained | Ensures the patient has been given adequate information about the procedure |
| | Only initiates a procedure when the appropriate consent has been obtained |
| | Documents consent according to local processes. |
| Element 5: Complies with ethical practice standards | |
| Indicators | Cues |
| 1. Engages effectively in ethical decision making | Demonstrates an ability to make informed, sensitive, and ethically sound professional |





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| | judgements and to evaluate the outcomes of clinical practice |
| 2. Tailors procedures to the individual patient | Identifies, assesses, and acts upon physical and psychological needs |
| 3. Understands the patient's rights relating to consent | Understands, accepts, and acts upon the knowledge that the patient can withdraw consent at any stage during the examination |
| | Knows the steps to take in the case of a patient withdrawing consent |

Standard 1.2 Practises to the standards of the profession

This standard relates to the responsibility of MRPs to uphold the reputation, integrity, and dignity of the profession. MRPs should always behave in a manner which justifies the trust and confidence placed in them by their patients and their professional colleagues. MRPs should work to serve the best interests of their patients at all times.

| Element 1: Maintains Professional behaviour | |
|--|--|
| Indicators | Cues |
| 1. Maintains professional integrity | Refrains from engaging in any activity which may bring the profession into disrepute |
| | Recognises and appreciates the imbalance of power during procedures and takes steps to avoid any misinterpretation of professional behaviour |
| | Does not abuse the professional relationship formed with patients |
| | Practises with cultural competence |
| | Works without seeking personal profit or gain from interactions with patients |
| 2. Understands personal accountability for work and professional conduct | Accepts responsibility for their decisions during procedures |
| 3. Works within the guidelines of the profession | Recognises the scope of practice of their own health profession and those of others, and works appropriately within those frameworks |





Standard 1.3 Fulfils the duty of care in clinical practice

This standard covers the duty of care MRPs have to their patients, particularly with regard to patient safety and well-being.

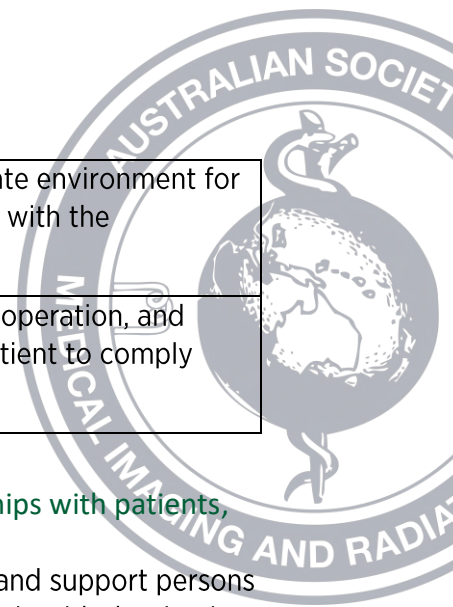
| Element 1: Acts to ensure the rights of patients are not compromised | |
|--|--|
| Indicators | Cues |
| 1. Demonstrates practice that recognises, respects, and upholds the rights and dignity of patients | Practises in a manner that protects the patient's best interest |
| | Acts as an advocate for the patient |
| Element 2: Demonstrates duty of care in patient management | |
| Indicators | Cues |
| 1. Understands their duty of care to patients. | Describes and understands the meaning of duty of care |
| 2. Ensures procedure is provided within an appropriate time frame | Uses clinical judgement to assign priority in terms of the medical urgency and acts accordingly |
| | Alerts the appropriate personnel of medically significant findings or of a change in patient condition |
| 3. Ensures that consent protocols have been followed | Follows the consent protocols of the healthcare organisation |
| | Verifies the appropriate completion of examination/procedure consent |

Standard 1.4 Provides patient centred care

This standard covers patient centred care, which considers the patient's wants, needs, and preferences. Patients should be provided with the information and support necessary to become actively involved in decisions concerning their care.

| Element 1: Provides patient focused care | |
|---|--|
| Indicators | Cues |
| 1. Recognises, monitors and responds to the needs of patients | Identifies and takes responsibility for the care of a patient |
| 2. Adapts the procedure to take into account patients' needs | Identifies situations which may affect patient outcomes and adapts the procedure accordingly |





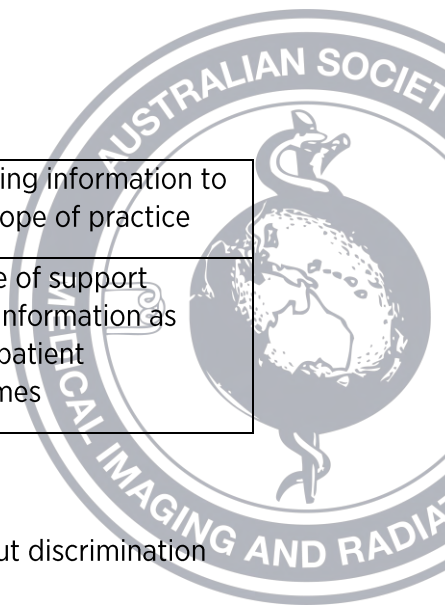
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| 3. Encourages the patient to be an active participant in the procedure | Provides an appropriate environment for the patient to engage with the practitioner |
| | Seeks the patient's cooperation, and allows time for the patient to comply with requests |

Standard 1.5 Establishes and maintains effective interpersonal relationships with patients, carers and their support persons

This standard covers the MRP's ability to establish a rapport with patients and support persons to enable a successful outcome to the examination or procedure. It also deals with the timely dissemination of information to patients and support persons.

| Element 1: Treats patients and support persons with respect and empathy | |
|---|--|
| Indicators | Cues |
| 1. Uses a respectful and empathetic approach when dealing with patients and support persons | Establishes rapport with patients and support persons |
| | Introduces and identifies themselves in a respectful manner before commencing the procedure |
| | Communication with patients and support persons is conducted with sensitivity and respect |
| | Explains procedures in terms and language that is understood by patients and support persons |
| | Actively listens to patients and support persons and responds accordingly |
| | Recognises that behaviour may be affected by anxiety and uncertainty |
| | Responds to patient and support person feedback according to policies and procedures of the workplace |
| | Anticipates and responds to the needs of patients and support persons to ensure the delivery of quality care |
| Element 2: Applies strategies to support patients and support persons | |
| Indicators | Cues |





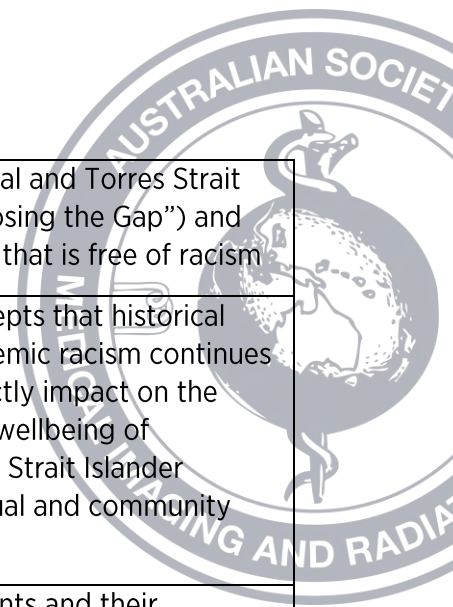
| | |
|--|---|
| 1. Informs and supports patients and support persons in a timely, appropriate and sensitive manner | Is responsive in providing information to patients within own scope of practice |
| | Is respectful of the role of support persons and provides information as appropriate, ensuring patient confidentiality at all times |

Standard 1.6 Practises in a culturally sensitive manner

This standard relates to cultural awareness. The MRP should practice without discrimination and demonstrate respect and sensitivity to all patients.

| Element 1: Acts in ways that demonstrate respect for the values, customs, spiritual beliefs and practices of individuals | |
|---|--|
| Indicators | Cues |
| 1. Respects the diversity of patients and staff/colleagues | Respect every patient and colleague as an individual |
| | Ensures that own values and beliefs are not imposed on others |
| | Recognises situations where there may be potential for misinterpretation or conflict |
| | Understands the obligation to practice without discrimination |
| 2. Identifies, assesses, and accommodates cultural diversity in practice <i>1 Adapted from MRPBA capability statement: Medical Radiation Practice of Australia (2020) Professional capabilities for medical radiation practitioners, p18, available at Medical-Radiation-Practice-Board---Professional-capabilities-for-medical-radiation-practice.PDF accessed on 28/11/21.</i> | Applies knowledge of socio-cultural diversity in the Australian community, including, but not limited to, factors such as culture, language, age, gender, disability, religion, socio-economic circumstances, geographic locality, and identifying as Aboriginal and/or Torres Strait Islander |
| | Ensures practice is sensitive to and supports cultural diversity |
| | Adapts practice to the cultural needs of patients |
| | Identifies and reflects on own cultural biases, assumptions and prejudices so to provide a clinical and workplace environment that is inclusive, unbiased and free of racism. (1) |
| | Understands the intergovernmental commitment to improving the health |





| | |
|--|---|
| <p>3. Practices in accordance with principles of cultural safety</p> | <p>outcomes of Aboriginal and Torres Strait Islander peoples (“Closing the Gap”) and providing health care that is free of racism</p> |
| | <p>Understands and accepts that historical colonisation and systemic racism continues to directly and indirectly impact on the social and emotional wellbeing of Aboriginal and Torres Strait Islander peoples at an individual and community level</p> |
| | <p>Recognises that patients and their communities exercise self-determined decision making in health care, and that the patient – health care professional relationship is based on partnership and collaboration</p> |
| | <p>Leads by example in creating clinical and workplace environments that support the rights and dignity of Aboriginal and Torres Strait Islander patients and co-workers. (2)</p> |

2 Adapted from AHPRA (2020) The National Scheme’s Aboriginal and Torres Strait Islander Health and Cultural Safety Strategy 2020-2025, p9, available at National-Scheme-s-Aboriginal-and-Torres-Strait-Islander-Health-and-Cultural-Safety-Strategy-2020-2025.PDF accessed on 28/11/2021



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Domain 2: Communication, Teamwork and Autonomy

| | |
|--------------|---|
| Standard 2.1 | Demonstrates effective communication skills |
| Standard 2.2 | Establishes and maintains appropriate collaborative relationships with colleagues and members of the health professional team |
| Standard 2.3 | Demonstrates well-established conflict resolution skills |
| Standard 2.4 | Operates effectively as an autonomous and responsible practitioner |

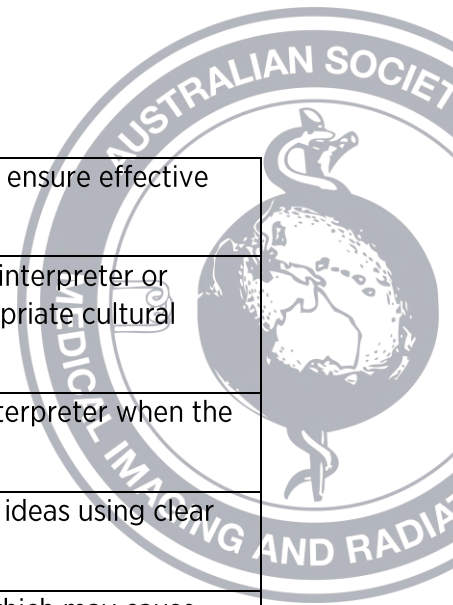
This domain relates to both effective communication and the establishment and maintenance of collaborative working relationships. Conflict resolution skills are a part of maintaining effective, collaborative relationships. This domain also includes the standards relating to the autonomy of MRPs, their professional responsibilities, and accountability for their own work practices.

Standard 2.1 Demonstrates effective communication skills

This standard relates to the ability of MRPs to use effective communication skills in all aspects of their professional duties. It encompasses verbal, non-verbal and written communication. MRPs should be aware of the barriers to the communication process and understand that diversity may require some modification of their communication.

| Element 1: Uses effective communication methods | |
|--|---|
| Indicators | Cues |
| 1. Maintains effective communication skills | Uses knowledge of effective communication skills that includes verbal, non-verbal and written communication |
| | Selects the appropriate communication method |
| | Exchanges and shares information with members of the interprofessional team |
| 2. Respects the opinions of others | Listens to, and shows respect for other opinions and views |
| Element 2: Adjusts communication technique to suit the situation | |
| Indicators | Cues |
| 1. Adjusts communication effectively in diverse contexts | Adapts and adjusts communication style appropriately |
| | Demonstrates awareness that communication needs for patients in a diverse community will vary and employs |



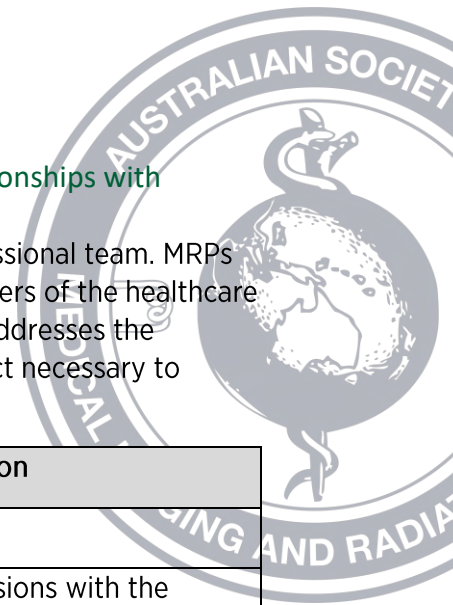


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| | appropriate strategies to ensure effective communication |
| | Seeks feedback through interpreter or relatives to ensure appropriate cultural interpretation |
| | Employs the use of an interpreter when the clinical situation requires |
| 2. Utilises a communication style which is suitable, applicable and acceptable | Articulates thoughts and ideas using clear concise language |
| | Does not use language which may cause offence |
| | Clarifies information when necessary to aid with understanding |
| | Uses various forms of communication to ensure information provided is accurate and complete |
| 3. Confirms that the intended message has been correctly interpreted | Confirms that the information is understood by asking open ended follow up questions |
| | Responds to feedback and clarifies when necessary |
| | Demonstrates and responds to non-verbal communication |
| | Alters vocabulary to aid with understanding when necessary |



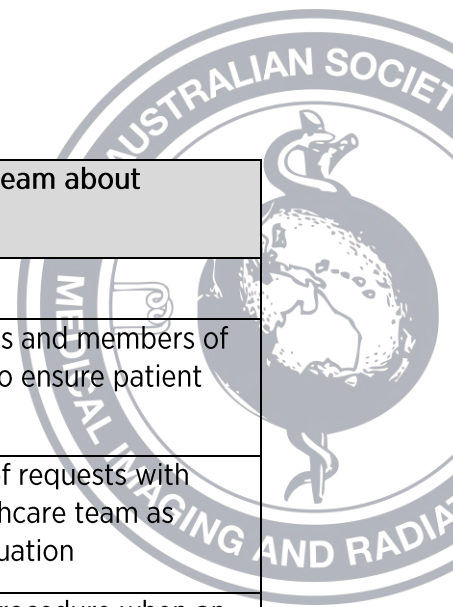
Standard 2.2 Establishes and maintains appropriate collaborative relationships with colleagues and members of the healthcare team

This standard deals with the role of an MRP as a member of the interprofessional team. MRPs should endeavour to create strong working relationships with other members of the healthcare team in order to ensure the best possible care for patients. The standard addresses the communication requirements, networking skills, understanding, and respect necessary to become an effective member of the team.



| Element 1: Ability to work collaboratively within the organisation | |
|--|--|
| Indicators | Cues |
| 1. Provides information and advice to colleagues and members of the healthcare team | Contributes to discussions with the professional team to enable achievement of optimum outcomes |
| | Educates others about MRP practice including radiation safety |
| | Engenders confidence in own role within the healthcare team |
| | Contributes to the patient care pathway as part of the healthcare team |
| 2. Establishes the communication pathways necessary to achieve desired outcomes | Establishes and actively maintains positive working relationships with colleagues |
| 3. Establishes effective collaborative working relationships with other health professionals and support staff to provide patient care | Develops collaborative working relationships with healthcare professionals and support staff |
| | Encourages mutual sharing of knowledge and experience with other members of the healthcare team |
| 4. Ability to recognise and support the role and function of other healthcare professionals and support staff | Respects and understands the roles of all members of the healthcare team in a professional environment |
| | Works in partnership with other members of the healthcare team |
| | Recognises situations where the expertise of other health professionals is required |
| 5. Understands and recognises organisational structure and their responsibility within it | Recognises own role within the healthcare team and takes responsibility to ensure effective patient care |





| Element 2: Advise colleagues and members of the healthcare team about individual patients' needs | |
|--|---|
| Indicators | Cues |
| 1. Communicates patient requirements to members of the healthcare team | Liaises with colleagues and members of the healthcare team to ensure patient care |
| | Discusses suitability of requests with members of the healthcare team as appropriate to the situation |
| | Follows notification procedure when an immediate clinical response is required, including pathology identified on imaging |
| | Provide clinical input within own scope of practice |

Standard 2.3 Demonstrate conflict resolution skills

This standard incorporates the process of conflict resolution, and the necessity to address conflict in a timely manner, following appropriate channels.

| Element 1: Demonstrates appropriate skills for managing conflict within the workplace. | |
|--|---|
| Indicators | Cues |
| 1. Responds appropriately to conflict within the workplace | Develops and maintains constructive professional relationships |
| | Employs appropriate strategies to deal with conflict |
| | Co-operates and compromises through negotiation to achieve an acceptable outcome for all parties |
| | Escalates clinical and interpersonal conflict appropriately according to organisational policies and procedures |

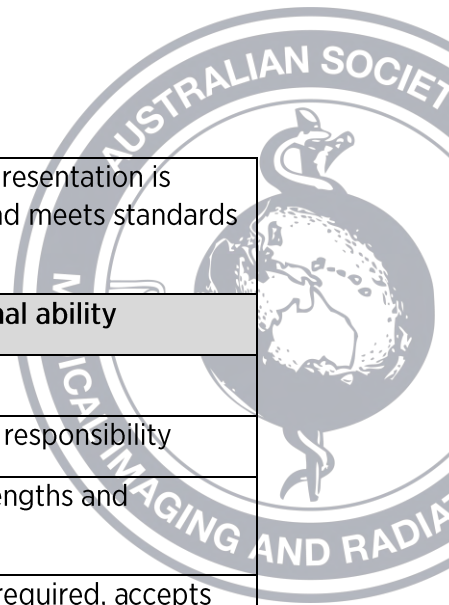


Standard 2.4 Operates effectively as an autonomous and responsible practitioner

This standard addresses the requirement for MRPs to be responsible and accountable for their own work practices. They will demonstrate initiative, acknowledge their own capabilities, and work within the limits of their own Scope of Practice.

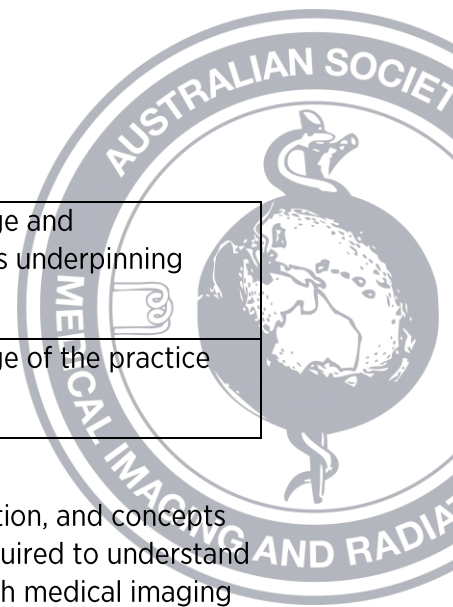
| Element 1: Assumes responsibility for own actions and makes independent professional decisions within their Scope of Practice | |
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| Indicators | Cues |
| 1. Provides professional opinions that lie within own knowledge, expertise and scope of practice | Provides opinions on professional practice when required |
| | Provides a professional opinion, within own scope of practice, of clinically significant findings to the medical personnel responsible for the patient's management in a timely manner |
| 2. Procedures are conducted within the scope of practice | Perform procedures consistent with good professional practice. |
| Element 2: Demonstrates a conscientious approach to work practices | |
| Indicators | Cues |
| 1. Evidence of efficient practice | Manages time and prioritises workload appropriately |
| | Adjusts priorities to the situation |
| | Completes all work to a high standard; safely and in a timely manner |
| 2. Projects a professional image | Knows own specific conditions of employment |
| | Respects the obligation to be punctual for working hours |
| | Observes all workplace policies and procedures |
| | Maintains composure in the work environment in stressful conditions |
| | Manages personal circumstances whilst in the work environment |
| | Maintains an appropriate standard of appearance and demeanour |





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| | Clothing and personal presentation is professional, suitable and meets standards of the workplace |
| Element 3: Recognises and responds to own level of professional ability | |
| Indicators | Cues |
| 1. Recognises and works within the limitations of clinical and professional skills | Can define their area of responsibility |
| | Acknowledges own strengths and weaknesses |
| | Seeks assistance when required, accepts constructive feedback and uses this to improve professional skills |
| Element 4 : Ensures documentation is accurate | |
| Indicators | Cues |
| 1. Appropriate identification of all medical records | Ensures workplace patient identification policy is adhered to |
| | Ensures that all imaging and documentation is annotated with the correct patient identification details |
| | Should an error occur, ensure that timely remedial actions and reporting are taken, as per workplace policy |
| 2. Accurately completes all documents | Accurately documents patient data |
| | Completes all administrative responsibilities within the recommended timeframes of the organisation |
| | Documents any deviation from the standard protocol, and the reasons behind it |





Domain 3a: Knowledge and Understanding (Medical Imaging)

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| Standard 3a.1 | Demonstrates a broad and relevant knowledge and understanding of the key theoretical concepts underpinning Medical Imaging |
| Standard 3a.2 | Demonstrates a broad and relevant knowledge of the practice underpinning Medical Imaging. |

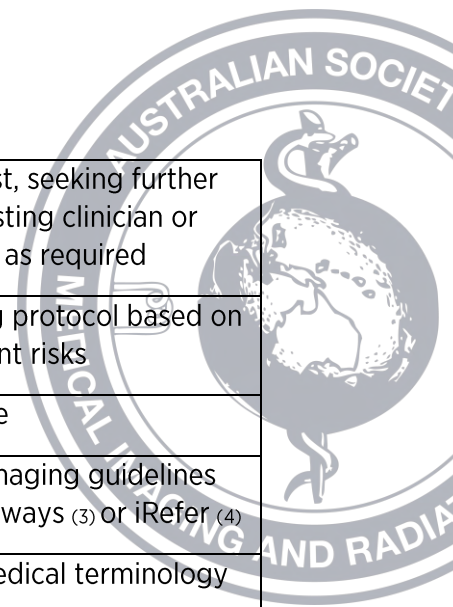
This domain includes the core knowledge base, principles of medical radiation, and concepts that are required in the practice of medical radiation science. MRPs are required to understand the principles of x-ray production and the benefits and risks associated with medical imaging procedures. An understanding of key principles of radiographic practice is demonstrated. Practice will adhere to the ALARA principle. Knowledge of anatomy, physiology and pathology is used to determine the imaging pathway best suited to answer the clinical question.

Standard 3a.1 Demonstrates a broad and relevant knowledge and understanding of the theoretical concepts underpinning medical imaging

This standard deals with the knowledge base required by MRPs to practice efficiently and safely. It covers knowledge of physics, anatomy, pathology, patient behavioural characteristics, and information technology.

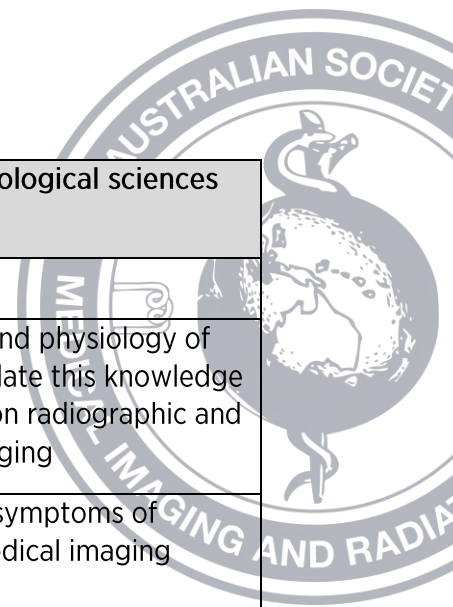
| Element 1: Demonstrate a broad and relevant knowledge of the science of medical imaging | |
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| Indicators | Cues |
| 1. Demonstrates knowledge of the production and analysis interpretation of medical images | Knowledge and application of the physics of ionising and non-ionising image production |
| | Knowledge of and use of the types of equipment used in medical imaging |
| | Knowledge and application of positioning for imaging procedures, including the use of modified techniques |
| | Adheres to principles of image analysis, critique and quality assurance |
| | Distinguishes between normal and abnormal appearances and communicates these findings according to local protocols |
| | Understands the effects of the interactions of x-rays with matter and how this contributes to image formation |
| | Understands the rationale for selection of each diagnostic modality for the diagnosis of disease |





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| <p>2. Demonstrates knowledge of risk-benefit analysis involved in the practice of medical imaging.</p> <p>3 Government of Western Australia (2022) Diagnostic Imaging Pathways. http://www.imagingpathways.health.wa.gov.au/index.php</p> <p>4 Royal College of Radiologists (2017) iRefer Guidelines: Making the best use of clinical radiology. Version 8.0.1. https://www.irefer.org.uk</p> | Justifies the imaging request, seeking further information from the requesting clinician or reporting medical specialist as required |
| | Selects appropriate imaging protocol based on a consideration of all relevant risks |
| | Applies the ALARA principle |
| | Refers to evidence-based imaging guidelines e.g diagnostic imaging pathways (3) or iRefer (4) |
| <p>3. Demonstrates knowledge of the use of medical terminology as it relates to medical imaging</p> | Understands and applies medical terminology in medical imaging |
| | Interprets an imaging request form, understanding terminology and abbreviations used |
| | Communicates appropriately with patients about radiation safety |
| <p>Element 2: Demonstrate a broad and relevant knowledge of physical sciences as it relates to Medical Imaging</p> | |
| Indicators | Cues |
| <p>1. Demonstrates knowledge of the physical principles of medical imaging</p> | Understands the physics of radiation, application and interaction with matter |
| | Understand the principles of image formation across all medical imaging modalities |
| <p>2. Demonstrates knowledge of principles of radiation dosimetry</p> | Understands and applies the principles of medical imaging to clinical practice |
| | Understands and interprets the health impact of radiation |
| | Adapts and modifies exposure factors based on the variables present in any given situation |
| | Ensures that the appropriate radiation exposure for the area being examined is used by utilising diagnostic reference levels (DRL) and exposure indicators |
| <p>3. Demonstrates knowledge, principles, application and limitations of equipment and instrumentation</p> | Understands the function of equipment used for image production |
| | Sets up and uses medical imaging equipment safely and appropriately for each requested examination |

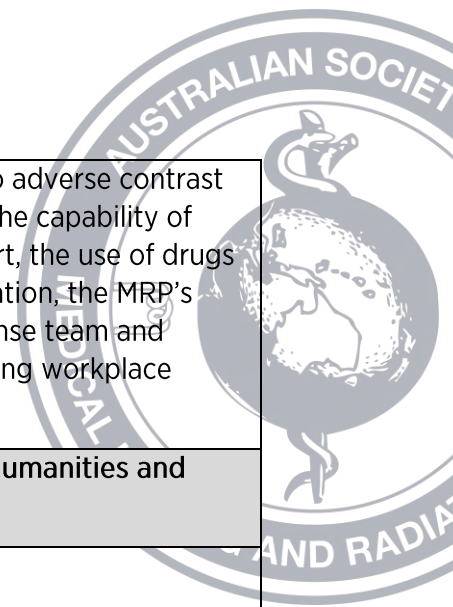




| Element 3: Demonstrate a broad and relevant knowledge of biological sciences as it relates to medical imaging | |
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| Indicators | Cues |
| 1. Demonstrates knowledge of the anatomy and physiology of the human body | Understands the anatomy and physiology of the human body and can relate this knowledge to anatomy demonstrated on radiographic and cross-sectional medical imaging |
| 2. Demonstrates knowledge of pathophysiology | Understands the signs and symptoms of disease as they relate to medical imaging practice |
| | Recognises and understands pathological appearances on medical images |
| | Understands the mechanisms of injury and their manifestation on medical images |
| 3. Demonstrates knowledge of radiobiology | Articulates the biological and cumulative effects of radiation dose including the deterministic and stochastic effects |
| | Optimises imaging parameters and imaging procedures in accordance with the ALARA Principle |
| | Understands the risks associated with foetal irradiation |
| | Effectively communicates radiation biology and safety concepts to patients |
| 4. Demonstrates knowledge of pharmacology related to medical imaging | Understands the characteristics, indications, contra indications and potential risk factors and side effects of pharmaceuticals used in medical imaging (e.g. contrast media) |
| | Understands and adheres to the Quality Use of Medicines (QUM) framework |
| | Understands the medication management cycle, including prescription, provision of patient information, administration, monitoring for response, and pharmaceutical storage. (5) |
| | Understands the need for and undertakes screening of patients for risk factors and co-morbidities which may be exacerbated by administration of contrast media |

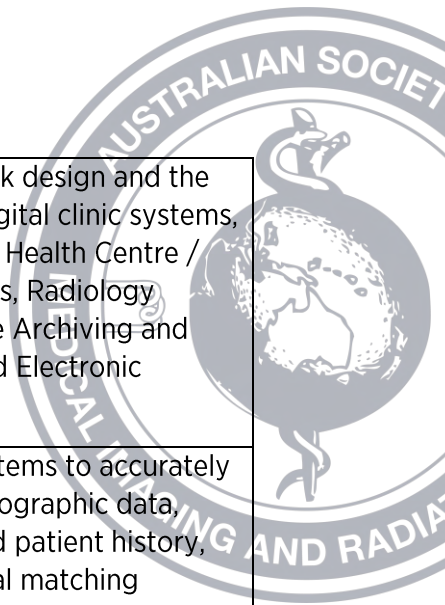
5 Reference: Commonwealth of Australia: Pharmaceutical Advisory Council (2005) Guiding Principles to Achieve Continuity in Medication Management, pp 8-10, available at QUM_5.indd (health.gov.au) accessed on 28/11/21





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| | Recognises and responds to adverse contrast media reactions, including the capability of performing basic life support, the use of drugs used in the emergency situation, the MRP's role in an emergency response team and escalation processes following workplace procedures |
| Element 3: Demonstrates a broad and relevant knowledge of humanities and behavioural sciences as it relates to medical imaging | |
| Indicators | Cues |
| 1. Demonstrates knowledge of sociological and psychological aspects of patient centred care | Understands that patients may have concerns relating to their condition, the imaging procedure and the potential diagnosis |
| | Understands that patients will have anxieties and concerns relating to the investigation and adapts communication accordingly |
| 2. Demonstrates knowledge of behavioural and communication sciences, as they apply to the care of patients undergoing medical imaging | Understands that patients will react to, and cope differently with various medical imaging procedures |
| | Understands the patient's communication and behaviour may change in response to their illness or injury |
| | Demonstrates empathy and understanding for the patient |
| 3. Recognises the roles of physical and psychological preparation for imaging procedures | Provides an explanation of the procedure, ensuring the patient understands any instructions prior to the commencement of the procedure |
| | Adapts the procedure or immobilisation devices to ensure patient comfort. |
| Element 4: Demonstrates a relevant and current knowledge of Information Technology in a Clinical Setting | |
| Indicators | Cues |
| 1. Demonstrates knowledge of and complies with legislative obligations relating to clinical data | Knowledge of legislative obligations and standards about clinical data, including privacy, ownership, storage, retention and destruction of patient data |





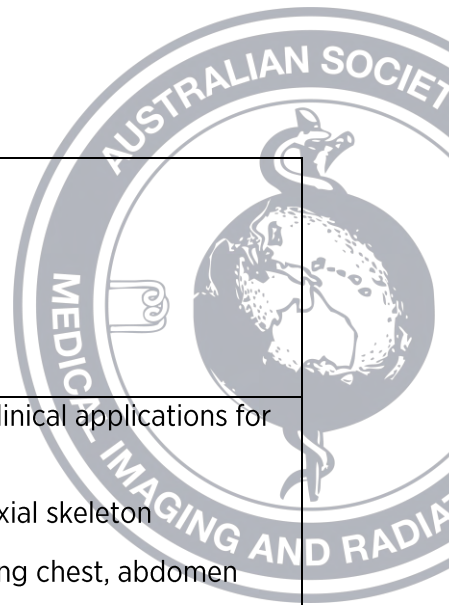
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| 2. Demonstrates knowledge of information technology in a clinical setting | Knowledge of digital network design and the inter-operability between digital clinic systems, including, but not limited to, Health Centre / Hospital Information Systems, Radiology Information Systems, Picture Archiving and Communication Systems and Electronic Medical Records |
| | Uses clinical information systems to accurately document the patient's demographic data, medical imaging request and patient history, procedure performed, clinical matching process (correct patient, procedure, side), clinical notes and alerts |
| | Ensures clinical notes and images are archived and progressed through the digital clinical workflow process for reporting and review |
| | Ensures that correct patient demographic data is associated with the correct patient records and images |
| 3. Operates Clinical Information Systems | Identifies and responds to data errors, including mis-matched patient demographic data and images |
| 4. Manages clinical information within a digital quality framework | Identifies and responds to data system outages and implements down-time and restoration procedures |

Standard 3a.2 Demonstrates a broad and relevant knowledge of the practice underpinning medical imaging

This standard refers to the clinical application of theoretical knowledge of medical imaging. It covers patient preparation, positioning, radiation dose selection, operation of medical imaging equipment across a range of settings, image post-processing and archiving, image analysis and interpretation.

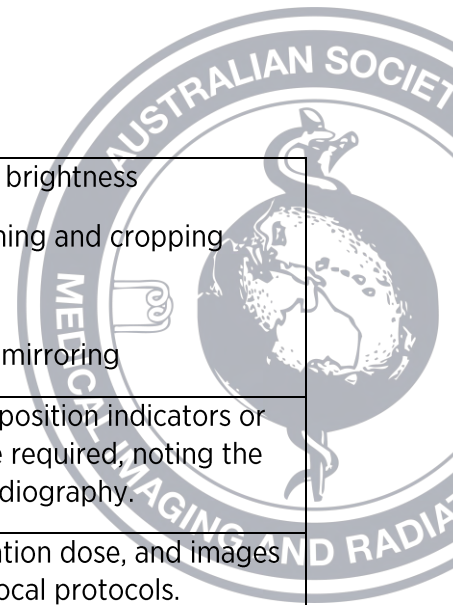
| Element 1: Demonstrates a thorough knowledge of the principles of medical imaging and their clinical application | |
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| Indicators | Cues |
| 1. Demonstrates a knowledge of patient assessment and procedure planning to ensure the procedure is | Plans the procedure according to the individual patient, accounting for any modifications which may be required |





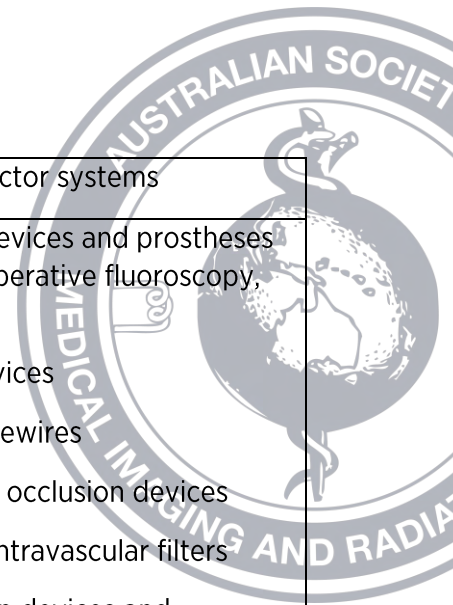
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| | <ul style="list-style-type: none">- Intensive Care Unit- Operating Theatre- Hospital Ward- Forensic setting |
| | Understands the range of clinical applications for radiography, including: <ul style="list-style-type: none">- Appendicular and axial skeleton- Soft Tissues, including chest, abdomen and breast- Dental anatomy, including orthopantomography- Dual Energy X-ray Absorptiometry (DEXA)- Forensic settings |
| | Establishes appropriate projections required for the examination requested, taking into account the clinical indications for the procedure, the clinical condition of the patient and mechanisms of injury |
| | Understands and adjusts equipment configurations, including: <ul style="list-style-type: none">- Horizontal, vertical or angled beam geometry- X-ray source – image receptor distance- X-ray scatter reducing devices, both physical and digital post-processing methods- X-ray beam filtration and collimation- Use of anatomical markers, position indicators or patient-side radio-opaque markers, both physical and digital post processing methods- Understands the use of radio-opaque markers within the imaging field |
| | Understands and applies knowledge of image post-process techniques, including: |





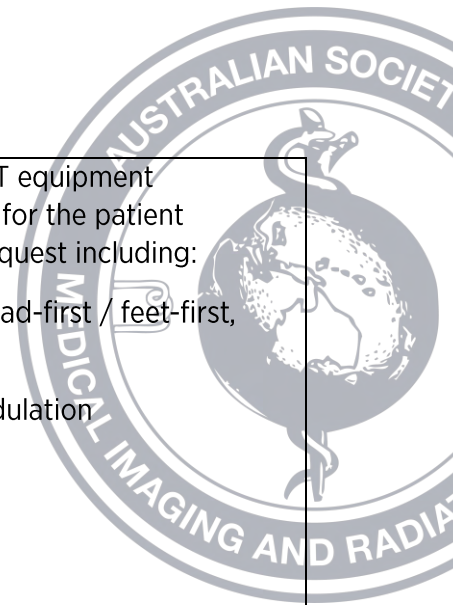
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| | <ul style="list-style-type: none"> - Image contrast and brightness - Magnification, zooming and cropping - Artefact reduction - Image rotation and mirroring <p>Applies digital anatomical, position indicators or patient-side markers where required, noting the requirements of forensic radiography.</p> <p>Ensures clinical notes, radiation dose, and images are archived according to local protocols.</p> |
| <p>4. Demonstrates knowledge of principles, clinical application, and performance of fluoroscopy and angiography in a range of clinical settings.</p> | <p>Understands the requirements of performing fluoroscopy and angiography in a range of clinical settings, including:</p> <ul style="list-style-type: none"> - Fixed fluoroscopy or angiography systems used in an Imaging Department, Operating Theatre or Cardiology setting - Mobile fluoroscopy systems used in a: <ul style="list-style-type: none"> o Medical Imaging Department o Operating Theatre or Procedure Suite o Emergency Department o Intensive Care Unit <p>Understands and adjusts equipment configurations, including:</p> <ul style="list-style-type: none"> - Equipment geometry, including uniplanar, biplanar systems - X-ray source – patient distance - X-ray source - image receptor distance - Rotational Imaging - X-ray scatter reducing devices, both physical and digital post-processing methods - X-ray beam filtration and collimation - Geometric magnification and digital magnification / zooming - Radiation protection shields |





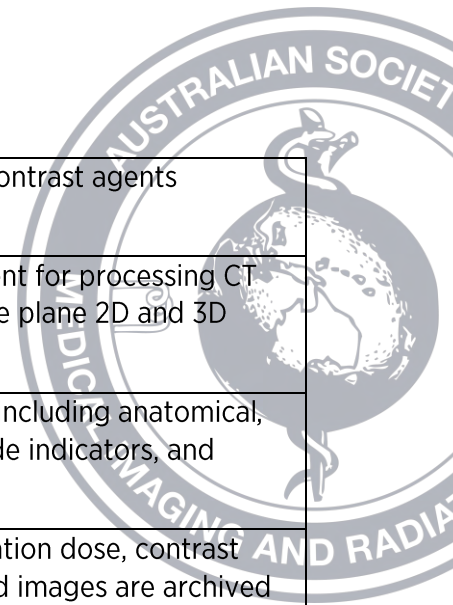
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| | <ul style="list-style-type: none"> - Contrast media injector systems |
| | <p>Understands the medical devices and prostheses used in angiography and operative fluoroscopy, including:</p> <ul style="list-style-type: none"> - Vascular access devices - Catheters, and guidewires - Stents and vascular occlusion devices - Vascular clips and intravascular filters - Orthopaedic fixation devices and prostheses |
| | Ensures effective communication within the health care team to ensure the procedure is planned and image acquisition is co-ordinated |
| | Ensures that all staff in the procedure suite / operating room where fluoroscopy is being used are adhering to safe radiation practices |
| | Applies digital anatomical, positional and procedural indicators or patient-side markers |
| | <p>Understands the requirement for processing fluoroscopy / angiography data sets, including:</p> <ul style="list-style-type: none"> - 2D and 3D image reformation - Image subtraction and image road mapping - Image contrast and brightness - Magnification, zooming and cropping - Artefact reduction - Image rotation and mirroring |
| | Ensures clinical notes, radiation dose, contrast media volume and type and images are archived according to local protocols |
| 5. Demonstrates knowledge of principles, clinical application, and performance of Computed Tomography (CT) in a range of clinical settings. | Understands the range of procedures performed in CT and recognises when an alternative medical imaging modality may be more appropriate |
| | Understands the effect of adjusting radiation exposure factors and scanning parameters on the formation of CT Images |





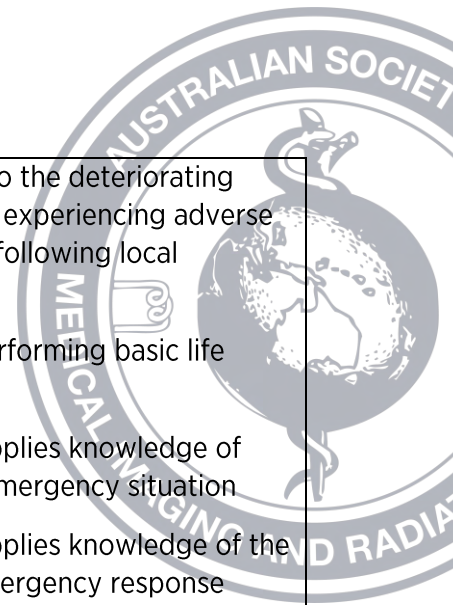
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| | <p>Understands and adjusts CT equipment configurations appropriate for the patient presentation and clinical request including:</p> <ul style="list-style-type: none">- Patient position (head-first / feet-first, other orientation)- Radiation dose modulation- X-ray beam width- Scan Field of View- Helical Pitch- Scan Range- Reconstruction algorithms- Intravenous contrast agents, including injector settings- Oral contrast agents, including volume, dilution and timing.- Respiration phase- Respiratory or cardiac gating- Dynamic CT- Interventional CT- CT Fluoroscopy |
| | <p>Understands the requirements of performing CT, including scans of:</p> <ul style="list-style-type: none">- Head- Neck- Chest- Abdomen- Pelvis- Spine- Vascular System, including perfusion imaging- Musculoskeletal System- Interventional procedures |





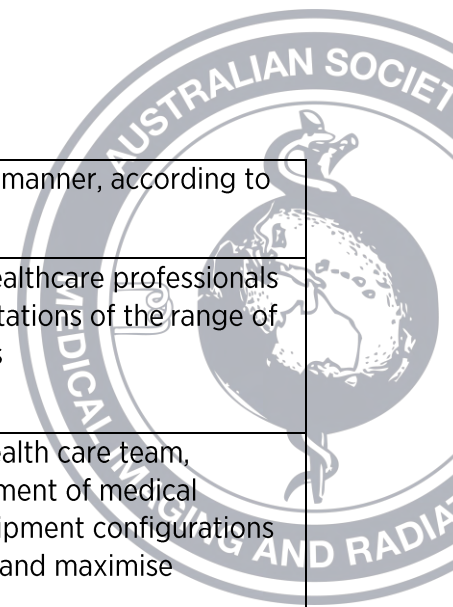
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| | - With and without contrast agents |
| | Understands the requirement for processing CT data sets, including multiple plane 2D and 3D image reformation |
| | Applies digital annotation, including anatomical, position, correct patient-side indicators, and contrast phase |
| | Ensures clinical notes, radiation dose, contrast media volume and type and images are archived according to local protocols |
| 6. Demonstrates knowledge of the principles, clinical application and performance of medical imaging across the human lifespan | Understands and applies knowledge of the implications and importance of radiation dose control in a paediatric context |
| | Understands paediatric specific anatomy and pathology |
| | Understands and applies knowledge of equipment configurations and immobilisation aids for paediatric patients |
| | Understands and applies effective communication strategies dependent on developmental level of the child |
| | Understands and applies knowledge of and equipment configurations and immobilisation aids for elderly patients |
| | Understands and applies effective communication strategies for elderly patients |
| | Understands the issues around consent and substitute decision makers for younger and elderly patient cohorts |
| 7. Demonstrates knowledge of patient monitoring and care of the deteriorating patient | Understands and applies knowledge of patients' physiological status, including a review of the patient's clinical history and participation in hand-over processes |
| | Understands and applies knowledge of physiological monitoring equipment and monitors the patient's status throughout the medical imaging procedure |





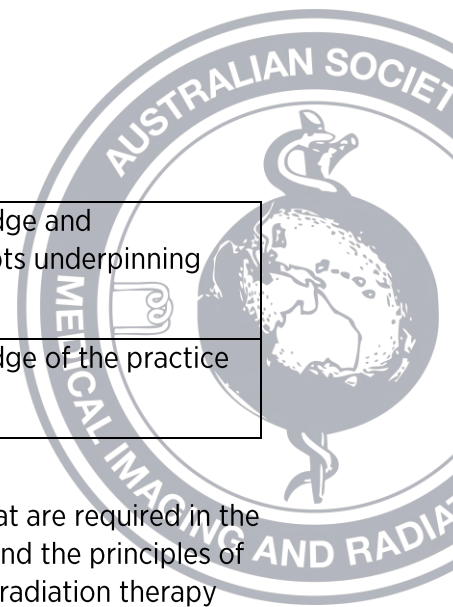
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| | <p>Recognises and responds to the deteriorating patient (including patient's experiencing adverse contrast media reactions), following local protocols, which includes:</p> <ul style="list-style-type: none">- the capability of performing basic life support- understands and applies knowledge of drugs used in the emergency situation- understands and applies knowledge of the MRP's role in an emergency response team |
| 9. Uses established criteria to assess image quality | <p>Assesses images to ensure the following image quality criteria are met:</p> <ul style="list-style-type: none">- Patient demographic data is consistent with imaging request and procedure matching process- Anatomical markers are correct and do not obscure anatomical or pathological details- Image artefacts do not unduly obscure anatomical or pathological details or mimic disease- The required anatomical area is included in the projection / scan range- The patient has been correctly positioned for the procedure- The image parameters set provide a diagnostic image- Pathology or anatomical variants are noted, according to local protocol- An assessment of the need to repeat or complete further medical imaging is made, which may include consultation with the reporting medical specialist |
| 10. Assesses images for the presence of urgent pathological conditions | <p>Recognises normal and abnormal appearances and urgent pathological conditions on diagnostic images and conveys this information appropriately to the reporting medical specialist or requesting health care professional, including</p> |





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| | documentation, in a timely manner, according to local protocols |
| 11. Demonstrates knowledge and clinical applications of the full range of medical imaging modalities | Provides advice to other healthcare professionals about the benefits and limitations of the range of medical imaging modalities |
| 12. Contributes to the development of medical imaging protocols | In collaboration with the health care team, contributes to the development of medical imaging protocols and equipment configurations to minimise radiation dose and maximise diagnostic value |





Domain 3b: Knowledge and Understanding (Radiation Therapy)

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| Standard 3b.1 | Demonstrates a broad and relevant knowledge and understanding of the key theoretical concepts underpinning Radiation Therapy |
| Standard 3b.2 | Demonstrates a broad and relevant knowledge of the practice underpinning Radiation Therapy |

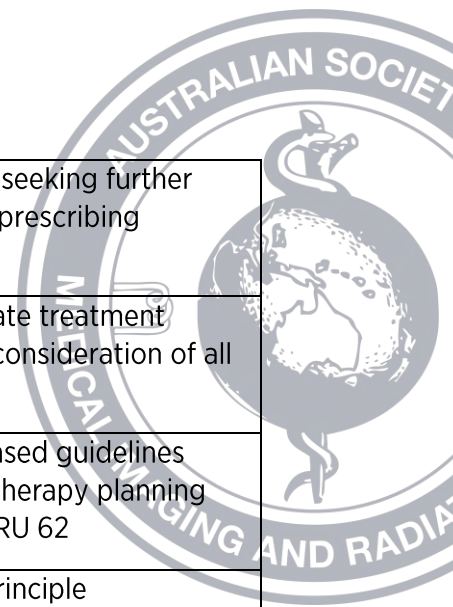
This domain includes the core knowledge base, principles and concepts that are required in the practice of radiation therapy. Radiation therapists are required to understand the principles of x-ray production, radioisotopes and the benefits and risks associated with radiation therapy procedures. An understanding of the key principles of radiation therapy practice is demonstrated. Practice will adhere to the ALARA principle. Knowledge of anatomy, physiology, radiobiology and pathology is essential for simulation, planning and treatment procedures. This domain also includes the psychosocial aspects of the radiation therapy experience, as well as the duty of care medical radiation professionals have to protect the patient and other staff members from unnecessary radiation dose.

Standard 3b.1 Demonstrates a broad and relevant knowledge and understanding of the key theoretical concepts underpinning Radiation Therapy

This standard deals with the knowledge base required by radiation therapists to practice their profession skilfully, efficiently and safely. It covers knowledge of physics, anatomy, pathology, radiobiology, patient behavioural characteristics, and information technology.

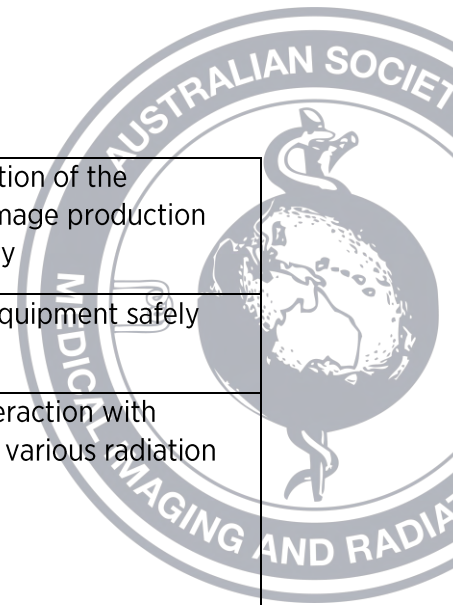
| Element 1: Demonstrates a broad and relevant knowledge of the science of Radiation Therapy | |
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| Indicators | Cues |
| 1. Demonstrates knowledge of simulation, planning and treatment of malignant and benign diseases | Knowledge of the application of ionising and non-ionising radiation |
| | Knowledge and use of the types of equipment used in radiation therapy |
| | Knowledge of positioning and immobilisation for radiation therapy procedures, including the use of modified techniques |
| | Adheres to principles of plan evaluation, image analysis and quality assurance |
| | Understands the effects of the interactions of x-rays with matter and uses this knowledge in plan construction |
| | Understands the rationale for selection of modality for treating disease |





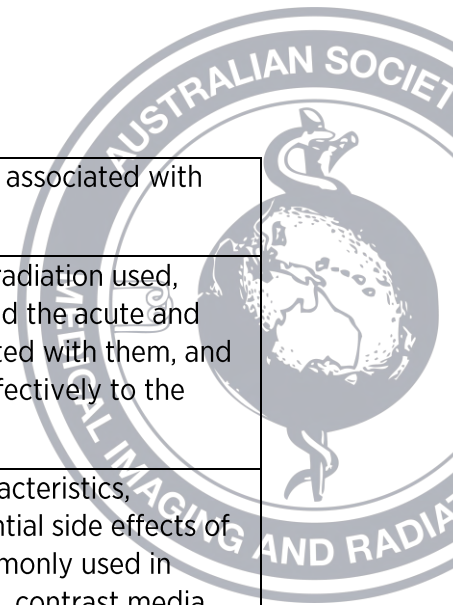
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| 2. Demonstrates knowledge of risk-benefit analysis involved in the practice of radiation therapy | Justifies prescription, seeking further information from the prescribing clinician as required |
| | Selection of appropriate treatment protocol is based on consideration of all relevant risks |
| | Refers to evidence-based guidelines relevant to radiation therapy planning and treatment e.g. ICRU 62 |
| | Applies the ALARA principle |
| 3. Demonstrates knowledge of medical terminology related to Radiation Therapy | Understands and applies medical terminology in radiation therapy |
| | Interprets a radiation therapy prescription |
| | Provides appropriate information to patients about radiation safety issues |
| Element 2: Demonstrates a broad and relevant knowledge of physical sciences as it relates to Radiation Therapy | |
| Indicators | Cues |
| 1. Demonstrates knowledge of the physical principles of radiation therapy | Understands the physics of radiation, application and interaction with matter |
| | Understands the principles of image formation in relevant imaging modalities |
| 2. Demonstrates knowledge of principles of radiation dosimetry | Understands and applies the principles of radiation therapy imaging and planning in clinical practice |
| | Understands and interprets the health impact of radiation |
| | Selects the appropriate planning approach and adapts and modifies factors to obtain appropriate dosimetry |
| | Selects the appropriate imaging modalities and image frequency to ensure accurate imaging considering workplace protocols, patient and target movement |





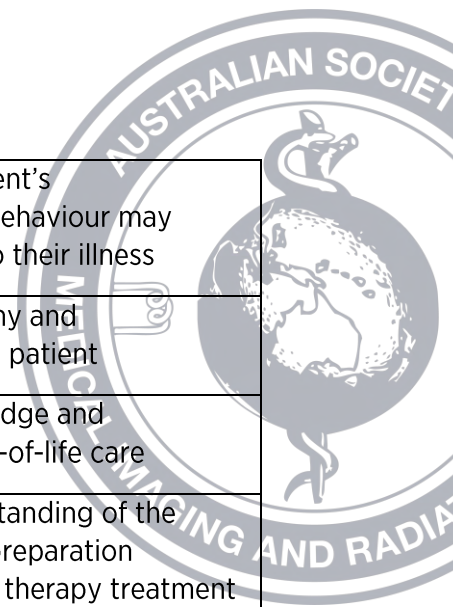
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| 3. Demonstrates knowledge principles, application and limitations of equipment and instrumentation | Understands the function of the equipment used for image production and treatment delivery |
| | Sets up and uses all equipment safely and appropriately |
| 4. Understands the physical properties of and the differences between photons, electrons, protons, external beam radiation therapy, brachytherapy and other radioisotopes | Knowledge of the interaction with human tissues for the various radiation particles |
| Element 3: Demonstrates a broad and relevant knowledge of biological sciences as it relates to Radiation Therapy | |
| Indicators | Cues |
| 1. Demonstrates knowledge of the anatomy and physiology of the human body | Understands the anatomy and physiology of the human body and can relate this knowledge to normal and abnormal anatomy demonstrated on imaging relevant to radiation therapy |
| 2. Demonstrates knowledge of pathophysiology | Understands the signs, symptoms and mechanisms of the spread of cancer |
| | Understands epidemiology and aetiology associated with the treated condition |
| | Understands and can describe tumour staging and classification systems |
| 3. Demonstrates knowledge of radiobiology | Understands the biological and cumulative effects of radiation dose including the deterministic and stochastic effects |
| | Knowledge of acute and late toxicity based on anatomy receiving radiation therapy. |
| | Knowledge of radiation treatment prescriptions and recognised appropriate dose and fractionation for various cancers dependent on treatment intent. |
| | Optimises plan in accordance with the ALARA Principle |





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| | Understands the risks associated with foetal irradiation. |
| | Understands type of radiation used, indications for use, and the acute and late toxicities associated with them, and communicates this effectively to the patient. |
| 3. Demonstrates knowledge of pharmacology related to radiation therapy | Understands the characteristics, indications, and potential side effects of pharmaceuticals commonly used in radiation therapy (e.g. contrast media, drugs used for symptom relief) |
| | Understands types of contrast used, indications and potential side effects |
| | Recognises the common types of chemotherapy drugs, and conditions for which they are used |
| | Recognises and responds to adverse contrast media reactions, including the capability of performing basic life support, the use of drugs used in the emergency situation, the MRP's role in an emergency response team and escalation processes following workplace procedures |
| Element 4: Demonstrate a broad and relevant knowledge of humanities and behavioural sciences as it relates to Radiation Therapy | |
| Indicators | Cues |
| 1. Demonstrates knowledge of sociological and psychological aspects of patient centred care | Understands that patients may have concerns relating to their condition and treatment |
| | Understands how life stresses may impact on the patient and their significant others and adapts communication accordingly |
| 2. Demonstrates knowledge of behavioural and communication | Understand that patients may have different responses to illness and treatment |





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| sciences, as applied to the care of those undergoing radiation therapy | Understands the patient's communication and behaviour may change in response to their illness |
| | Demonstrates empathy and understanding for the patient |
| | Demonstrates knowledge and understanding of end-of-life care |
| 3. Recognises the roles of physical and psychological preparation for radiation therapy | Demonstrates understanding of the rationale for patient preparation required for radiation therapy treatment |
| | Provides an explanation of the procedure ensuring understanding prior to commencing |
| Element 5: Demonstrates relevant and current knowledge of Information Technology as it relates to Radiation Therapy | |
| Indicators | Cues |
| 1. Demonstrates knowledge of and complies with legislative obligations relating to clinical data | Knowledge of legislative obligations and standards about clinical data, including privacy, ownership, storage, retention and destruction of patient data |
| 2. Demonstrates relevant and current knowledge of information technology associated with radiation therapy | Knowledge of information systems, including, but not limited to, Treatment Planning Systems, Radiation Oncology Information Systems, Verification Image Systems and Electronic Medical Records |
| | Understands the interoperability and data transfer processes between systems |
| | Uses clinical information systems to accurately document patient's planning and treatment |
| 3. Manages clinical information within a digital quality framework | Identifies and responds to data system outages and implements down-time and restoration procedures |

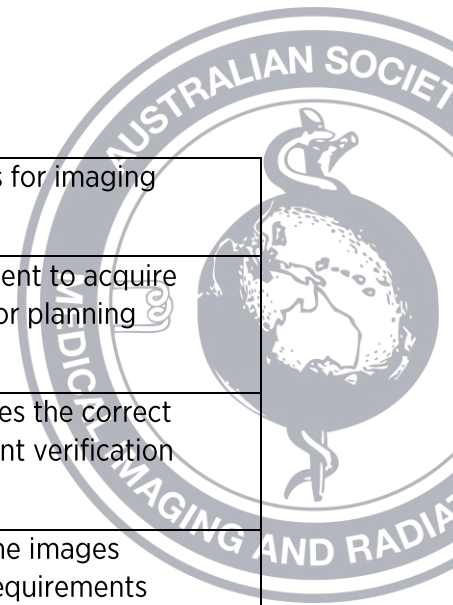


Standard 3b.2 Demonstrates the broad and relevant knowledge of the practice of Radiation Therapy

This standard covers the clinical application of theoretical knowledge of radiation therapy. It covers positioning, simulation, image interpretation, applications and uses of the different imaging modalities, and the correct use of radiation therapy equipment.

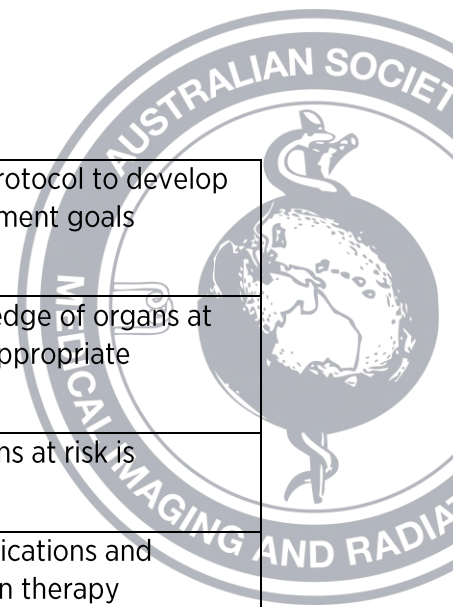
| Element 1: Demonstrates knowledge of the principles of Radiation Therapy and their clinical application | |
|---|--|
| Indicators | Cues |
| 1. Demonstrates knowledge of patient assessment (including suitability of request), positioning and immobilisation and suitability of request | Assesses the patient to determine fitness to proceed |
| | Prepares the patient for the procedure, including an explanation of the procedure |
| | Positions the patient appropriately for the treatment considering factors including the treatment intent, patient condition and treatment technique |
| | Uses appropriate ancillary equipment to provide patient immobilisation and stabilisation |
| | Undertakes all procedures according to infection control principles |
| 2. Demonstrates knowledge of the use of bolus materials in radiation therapy | Follows the Australian Commission for Quality and Safety in Health Care's procedure to ensure correct patient, correct site and correct procedure, including: <ul style="list-style-type: none"> - Verification of patient information - Matching the information against the request form or consent form - Time out immediately prior to the procedure - Post-procedure confirmation and documentation |
| | Applies appropriate bolus materials for the treatment conditions |





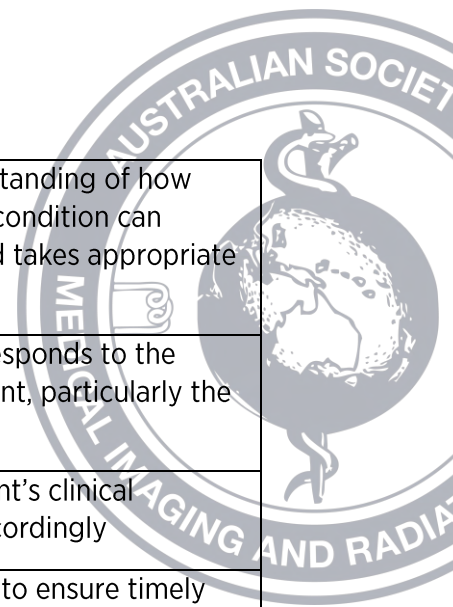
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| 3. Demonstrates knowledge of imaging processes | Advises requirements for imaging modalities |
| | Uses imaging equipment to acquire appropriate images for planning purposes |
| | Determines and applies the correct protocols for treatment verification imaging |
| 4. Evaluates images acquired during radiation therapy planning and treatment | Determine whether the images produced meet the requirements |
| | Determine whether further imaging is required |
| | Assesses patient anatomy on verification images and takes appropriate corrective actions if outside tolerance prior to treatment delivery. |
| | Recognises normal and abnormal appearances of images and conveys this information appropriately to the relevant health professional, including documentation |
| 5. Demonstrates knowledge of the principles, clinical application and performance of Computed Tomography (CT) | Understands the range of procedures performed within CT |
| | Understands the effect of adjusting radiation exposure factors on the formation of CT images |
| | Understands and adjusts CT equipment configurations appropriate to acquire appropriate images for treatment planning |
| | Confirms correct patient-side and position markers and applies contrast phase and anatomical indicators |
| | Archives images according to local protocols |
| | Applies radiation safety principles, including justification for the procedure and ALARA principles in CT |





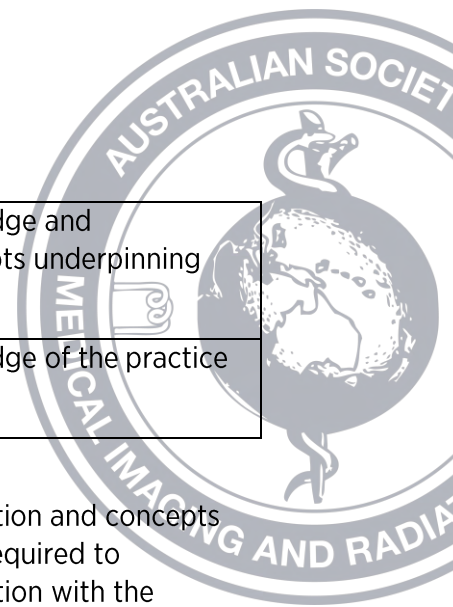
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| 6. Demonstrates knowledge, clinical application and performance of plan construction | Applies the correct protocol to develop plans that meet treatment goals |
| 7. Demonstrates knowledge of organ dose tolerances | Demonstrates knowledge of organs at risk and applies the appropriate tolerances |
| | Ensures dose to organs at risk is documented |
| 8. Demonstrates knowledge of and clinical application of the operation of equipment | Understands the applications and limitations of radiation therapy equipment |
| | Ensures appropriate and safe use of the correct radiation therapy equipment |
| | Can describe the components of a linear accelerator – MLC, jaws, gantry, on board imaging, wedging etc. |
| | Takes appropriate verification images and uses clinical knowledge to determine any corrective actions prior to treatment |
| | Uses radioisotopes/brachytherapy/HDR unit, knowledge of role in treatment and limitations |
| | Uses SXR and understands the operation, knowledge of its use in treatment and limitations |
| | Recognises faulty or unsafe equipment and responds appropriately |
| 9. Demonstrates knowledge of quality assurance (QA) procedures | Knowledge and application of procedures used in quality assurance, and follows workplace policies and procedures |
| | Understands and applies plan quality assurance processes |
| 10. Demonstrates knowledge of monitoring and care of the patient | Ensures that the patient is monitored throughout the course of treatment and referred to appropriate members of the healthcare team as required |





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| | Demonstrates understanding of how changes to patients' condition can impact dosimetry and takes appropriate corrective action |
| | Acknowledges and responds to the condition of the patient, particularly the deteriorating patient |
| 10. Demonstrates knowledge of the principles of patient management | Understand the patient's clinical pathway and acts accordingly |
| | Works with the team to ensure timely delivery of procedures |
| 11. Demonstrates knowledge of the principles, clinical application, and performance of radiation therapy across the human lifespan | Understands and applies knowledge of the implications and importance of radiation dose control in a paediatric context |
| | Understands and applies effective communication strategies dependent on developmental level of the child |
| | Understands and applies knowledge of and equipment configurations and immobilisation aids for elderly patients |
| | Understands and applies effective communication strategies for elderly patients |
| | Understands the issues around consent and substitute decision makers for younger and elderly patient cohorts |
| Element 2: Demonstrates an understanding of Radiation Therapy procedures to contribute effectively to interprofessional team decision - making | |
| 1. Demonstrates knowledge of evidence-based and emerging techniques in radiation therapy | Applies knowledge of contemporary treatments |
| 2. Contributes to the development of radiation therapy protocols | In collaboration with the health care team, contributes to the development of radiation therapy protocols and procedures |





Domain 3c: Knowledge and Understanding (Nuclear Medicine)

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| Standard 3c.1 | Demonstrates a broad and relevant knowledge and understanding of the key theoretical concepts underpinning Nuclear Medicine Imaging |
| Standard 3c.2 | Demonstrates a broad and relevant knowledge of the practice underpinning Nuclear Medicine Imaging |

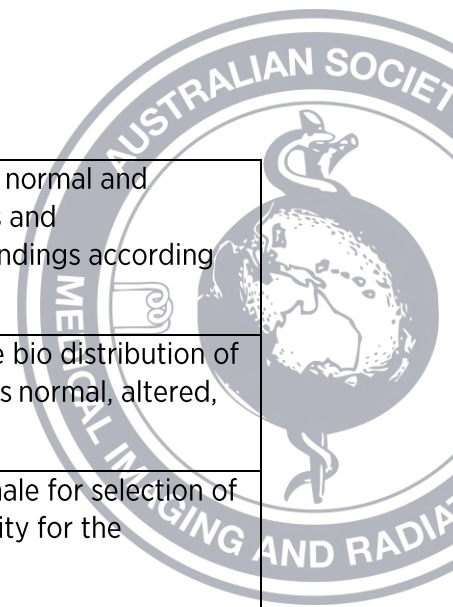
This domain includes the core knowledge base, principles of medical radiation and concepts that are required in the practice of medical radiation science. The MRP is required to understand the principles of radionuclide and radiopharmaceutical production with the understanding of working nuclear medicine imaging equipment and the benefits and risks associated with nuclear medicine and theranostic procedures. An understanding of key principles of nuclear medicine and Positron Emission Tomography (PET) practice is demonstrated. Practice will adhere to the ALARA principle. Knowledge of anatomy, physiology and pathology is used to determine the imaging pathway best suited to answer the clinical question.

Standard 3c.1 Demonstrates a broad and relevant knowledge and understanding of the theoretical concepts underpinning nuclear medicine

This standard deals with the knowledge base required by MRP's to practice efficiently and safely. It covers knowledge of physics, anatomy, pathology, patient behavioural characteristics, and information technology.

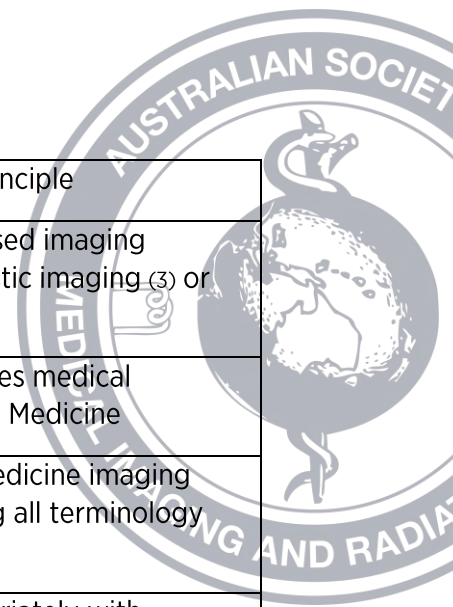
| Element 1: Demonstrate a broad and relevant knowledge of the science of nuclear medicine | |
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| Indicators | Cues |
| 1. Demonstrates knowledge of the production and analysis / interpretation of Nuclear Medicine images | Knowledge and application of the physics of ionising and non-ionising image production |
| | Understands the effects of the interactions Alpha, Beta, Gamma and positron emissions have with matter and how this contributes to image formation and theranostics |
| | Knowledge and use of the types of equipment used in nuclear medicine |
| | Knowledge of positioning for nuclear medicine procedures, including the use of modified techniques |
| | Adheres to principles of image analysis, critique and quality assurance |





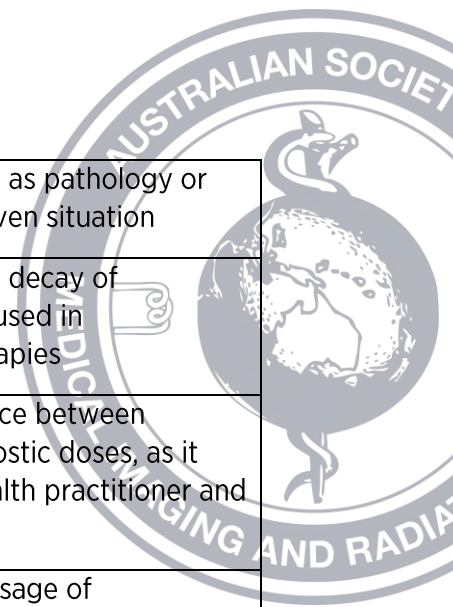
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| | Distinguishes between normal and abnormal appearances and communicates these findings according to local protocols |
| | Determine whether the bio distribution of radiopharmaceuticals is normal, altered, or unexpected |
| | Understands the rationale for selection of each diagnostic modality for the diagnosis of disease |
| 2. Prepare and assess the purity of radiopharmaceuticals | Perform the elution and quality control of the radioisotope generator. |
| | Assay the eluate and prepare radiopharmaceuticals ensuring critical procedure features are observed, such as correct volume, radioactivity and particle count |
| | Perform quality control on radiopharmaceuticals and assess for patient use |
| 3. Perform in vivo and in vitro laboratory procedures | Perform safe aseptic blood labelling procedures |
| | Perform in vivo laboratory procedures |
| | Implement appropriate methods to determine if results of laboratory procedures are normal, altered or unexpected and communicate these findings according to local protocols |
| | Understand and apply laboratory procedures which may include the use of sample counters such as well counters, operation of centrifuges, and use of fume hoods |
| 4. Demonstrates knowledge of risk-benefit analysis involved in the practice of nuclear medicine imaging | Justifies the imaging request, seeking further information from the referring clinician or reporting medical specialist as required |
| | Selects appropriate radiopharmaceutical, dose and imaging protocol based on a consideration of all relevant risks |





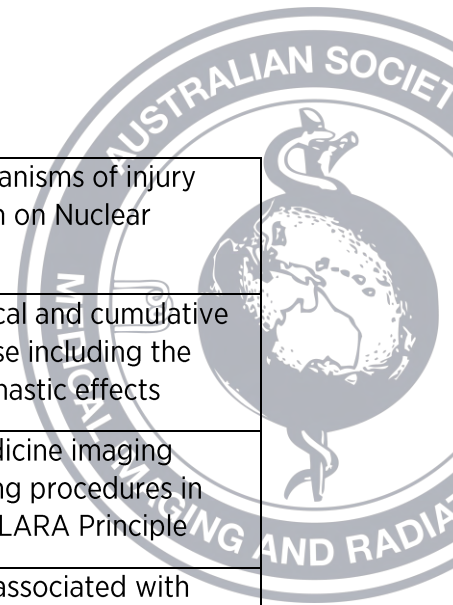
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| | Applies the ALARA principle |
| | Refers to evidence-based imaging guidelines e.g. diagnostic imaging (3) or iRefer (4) |
| 5. Demonstrates knowledge of the use of medical terminology as it relates to nuclear medicine | Understands and applies medical terminology in Nuclear Medicine |
| | Interprets a nuclear medicine imaging request, understanding all terminology used |
| | Communicates appropriately with patients about radiation safety |
| 6. Demonstrates knowledge, principles, application and limitations of equipment and instrumentation | Identifies all components of the imaging system |
| | Understands the function of each item of equipment with regards to image production |
| | Sets up and uses the nuclear medicine imaging equipment safely and appropriately for each requested examination |
| | Understands the function and limitations of dose calibrators, well counters and survey meters |
| Element 2: Demonstrate a broad and relevant knowledge of physical sciences as it relates to nuclear medicine imaging | |
| Indicators | Cues |
| 1. Demonstrates knowledge of the physical principles of nuclear medicine | Understands the physics of radiation, application and interaction with matter |
| | Understand the principles of image formation across all nuclear medicine modalities |
| 2. Demonstrates knowledge of principles of radiation dosimetry | Understands and interprets the importance of radiation dose |
| | Understands and applies the principles of nuclear medicine in clinical practice |
| | Adapts and modifies protocols on SPECT or PET scanners based on radiopharmaceutical dose administered |





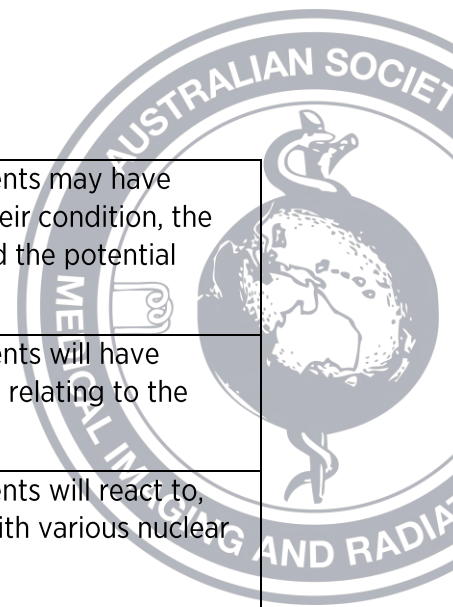
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| | or other variables such as pathology or body habitus in any given situation |
| | Calculate the dose and decay of radiopharmaceuticals used in examinations and therapies |
| | Recognise the difference between therapeutic and diagnostic doses, as it affects the patient, health practitioner and the public |
| | Deliver appropriate dosage of radiopharmaceutical using safe aseptic techniques for each patient |
| | Use appropriate radiopharmaceutical delivery systems |
| | Understanding PET and SPECT dosimetry and its use in calculating doses for theranostics |
| 3. Demonstrates knowledge, principles, application and limitations of equipment and instrumentation | Understands the function of equipment used for image production. |
| | Sets up and uses nuclear medicine equipment safely and appropriately for each requested examination |
| Element 3: Demonstrate a broad and relevant knowledge of biological sciences as it relates to nuclear medicine imaging | |
| Indicators | Cues |
| 1. Demonstrates knowledge of the anatomy and physiology of the human body | Understands the anatomy and physiology of the human body and can relate this knowledge to anatomy demonstrated on nuclear medicine and cross-sectional imaging |
| 2. Demonstrates knowledge of pathophysiology | Understands the signs and symptoms of disease as they relate to nuclear medicine practice |
| | Recognises and understands pathological appearances on Nuclear Medicine images |





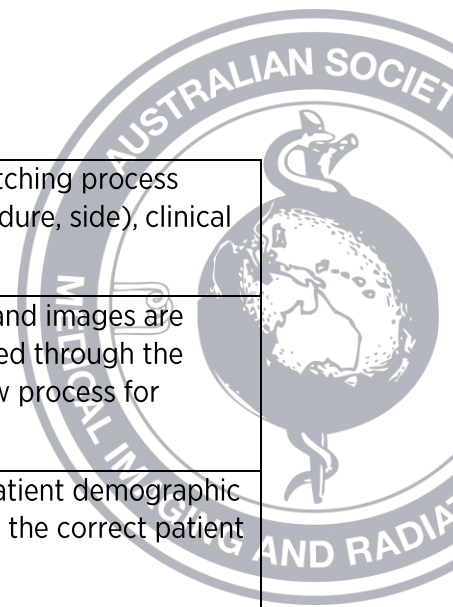
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| | Understands the mechanisms of injury and their manifestation on Nuclear Medicine images |
| 3. Demonstrates a knowledge of radiobiology | Articulates the biological and cumulative effects of radiation dose including the deterministic and stochastic effects |
| | Optimises Nuclear Medicine imaging parameters and imaging procedures in accordance with the ALARA Principle |
| | Understands the risks associated with foetal irradiation |
| | Effectively communicates radiobiology and safety concepts to patients |
| 4. Demonstrates knowledge of pharmacology related to Nuclear Medicine | Understands the characteristics, indications, contra indications and potential risk factors and side effects of pharmaceuticals used in Nuclear Medicine (e.g contrast media, Frusemide etc). |
| | Understands and adheres to the Quality Use of Medicines (QUM) framework |
| | Understands the medication management cycle, including prescription, provision of patient information, administration, monitoring for response, and pharmaceutical storage (5) |
| | Understands the need for and undertakes screening of patients for risk factors and co-morbidities which may be exacerbated by administration of contrast media and other relevant pharmaceuticals |
| | Recognises and responds to adverse reactions, including the capability of performing basic life support, the use of drugs used in the emergency situation, the MRP's role in an emergency response team and escalation processes following workplace procedures. |
| Element 4: Demonstrates a broad and relevant knowledge of humanities and behavioural sciences as it relates to nuclear medicine | |
| Indicators | Cues |





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| 1. Demonstrates knowledge of sociological and psychological aspects of patient centred care | Understands that patients may have concerns relating to their condition, the imaging procedure and the potential diagnosis. |
| | Understands that patients will have anxieties and concerns relating to the investigation |
| 2. Demonstrates knowledge of behavioural and communication sciences, as they apply to the care of patients undergoing Nuclear Medicine | Understands that patients will react to, and cope differently with various nuclear medicine procedures |
| | Understands the patient's communication and behaviour may change in response to their illness or injury |
| | Demonstrates empathy and understanding for the patient |
| 3. Recognises the roles of physical and psychological preparation for imaging procedures | Provides an explanation of the procedure, ensuring the patient understands any instructions prior to the commencement of the procedure. |
| | Adapts the procedure or immobilisation devices to ensure patient comfort. |
| Element 5: Demonstrates a relevant and current knowledge of Information Technology in a Clinical Setting | |
| Indicators | Cues |
| 1. Demonstrates knowledge of and complies with legislative obligations relating to clinical data | Knowledge of legislative obligations and standards about clinical data, including privacy, ownership, storage, retention and destruction of patient data, |
| 2. Demonstrates knowledge of information technology in a clinical setting | Knowledge of digital network design and the inter-operability between digital clinic systems, including, but not limited to, Health Centre / Hospital Information Systems, Radiology Information Systems, Picture Archiving and Communication Systems and Electronic Medical Records |
| | Uses clinical information systems to accurately document the patient's demographic data, medical imaging request and patient history, procedure |





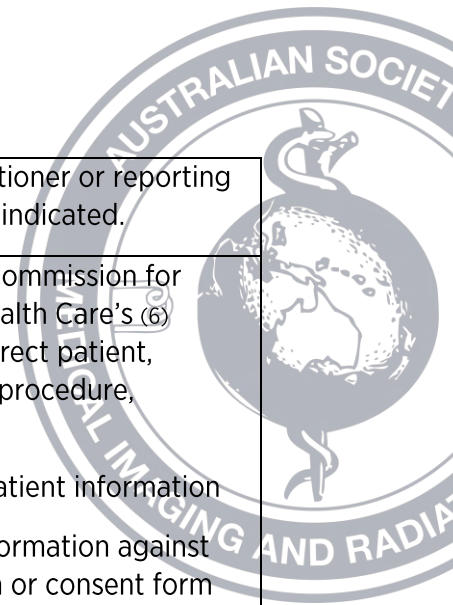
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| | performed, clinical matching process (correct patient, procedure, side), clinical notes and alerts. |
| | Ensures clinical notes and images are archived and progressed through the digital clinical workflow process for reporting and review. |
| | Ensures that correct patient demographic data is associated with the correct patient records and images. |
| 3. Operates Clinical Information Systems | Identifies and responds to data errors, including mis-matched patient demographic data and images. |
| 4. Manages clinical information within a digital quality framework | Identifies and responds to data system outages and implements down-time and restoration procedures. |

Standard 3c.2 Demonstrates a broad and relevant knowledge of the practice underpinning nuclear medicine

This standard refers to the clinical application of theoretical knowledge of nuclear medicine. It covers patient preparation, positioning, radiation dose selection, operation of nuclear medicine equipment, image post-processing and archiving, image analysis and interpretation.

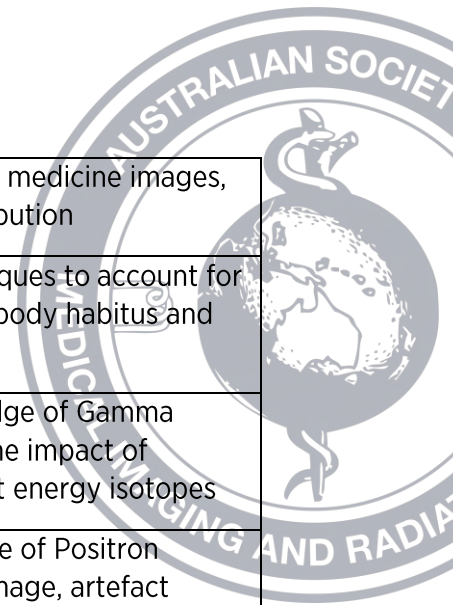
| Element 1: Demonstrates a thorough knowledge of the principles of nuclear medicine imaging and their clinical application | |
|---|---|
| Indicators | Cues |
| 1. Demonstrates knowledge of patient assessment and procedure planning to ensure the procedure is appropriate to the presenting diagnostic query. | Plans the procedure according to the individual patient, accounting for any modifications which may be required |
| | Ensures that the request is complete, with all required information, and is issued by an authorised health care provider. |
| | Understands the responsibility to recognise and act when an incorrect or inappropriate examination is requested to fulfil the ALARA obligation to justify the use of radiation in the interest of the patient's care. |
| | Discusses imaging techniques and alternative imaging strategies with the |





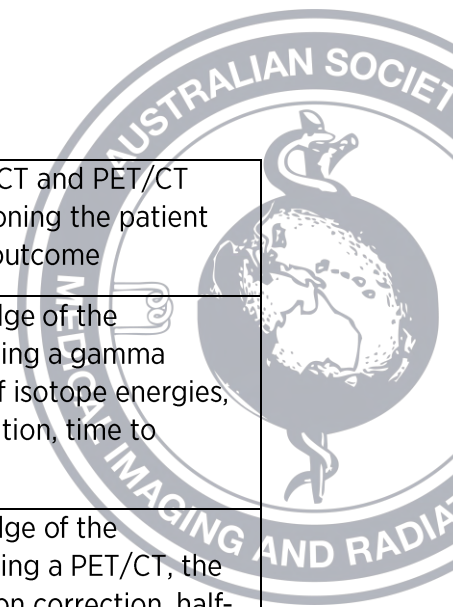
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| <p>6 Reference: Australian Commission for Quality and Safety in Health Care: Ensuring correct patient, correct site and correct procedure in Radiology, Nuclear Medicine, Radiation Therapy and Oral Surgery, accessed on 09.01.2022 from ECPCSCP_FactSheet.pdf (safetyandquality.gov.au)</p> | <p>requesting health practitioner or reporting medical specialist when indicated.</p> |
| | <p>Follows the Australian Commission for Quality and Safety in Health Care's (6) procedure to ensure correct patient, correct site and correct procedure, including:</p> <ul style="list-style-type: none"> - Verification of patient information - Matching the information against the request form or consent form - Time out immediately prior to the procedure - Post-procedure confirmation and documentation |
| | <p>Prepares the patient for the procedure, including an explanation of the procedure and arranging for the removal of clothing / accessories that may cause artefacts.</p> |
| <p>2. Demonstrates knowledge of patient positioning and immobilisation</p> | <p>Positions the area being examined considering anatomical landmarks, to ensure demonstration of the required anatomical structures</p> |
| | <p>Uses accessory positioning and immobilisation devices to ensure patient comfort.</p> |
| <p>3. Demonstrates knowledge of the principles, clinical application and performance of nuclear medicine procedures and therapies</p> | <p>Understands and applies knowledge across all nuclear medicine modalities:</p> <ul style="list-style-type: none"> • Planar • SPECT • SPECT/CT • PET/CT • PET/MRI • Post processing |
| | <p>Ensures effective communication within the health care team to ensure the procedure is planned and image acquisition is co-ordinated</p> |





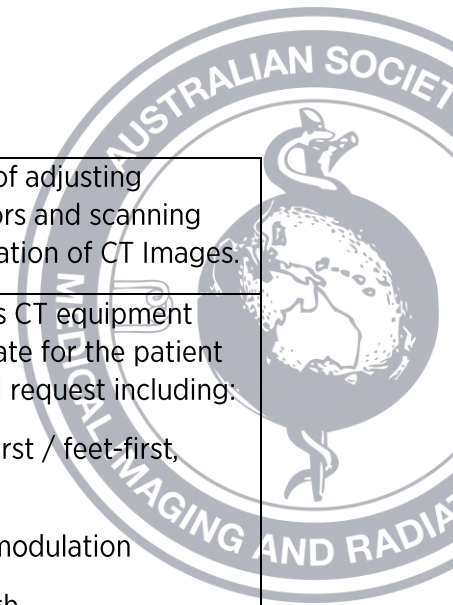
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| | Acquires quality nuclear medicine images, reviewing prior to distribution |
| | Modifies imaging techniques to account for the patient's condition, body habitus and needs |
| | Has a thorough knowledge of Gamma camera detection and the impact of collimators and different energy isotopes |
| | Has thorough knowledge of Positron Emission tomography image, artefact formation and the impact of post processing |
| | Ensures clinical notes, radiation dose, and images are archived according to local protocols |
| 4. Demonstrates a thorough knowledge of the principles of radio pharmacy | Uses safe, aseptic technique for the delivery of all radiopharmaceuticals |
| 5. Demonstrates the ability to undertake in vivo and in vitro laboratory techniques | <p>Knowledge and application of</p> <ul style="list-style-type: none"> • Elution, assay and quality control of generator systems • Preparation and quality control of radiopharmaceuticals prior to patient use • Appropriate radiopharmaceutical delivery systems for both diagnostic and therapeutic doses • Biodistribution, and able to determine whether it is normal, altered or unexpected • Aseptic blood labelling techniques • In vivo laboratory procedures • Methods to determine if results are normal, altered or expected |
| | Recognise the differences between diagnostic and therapeutic doses |





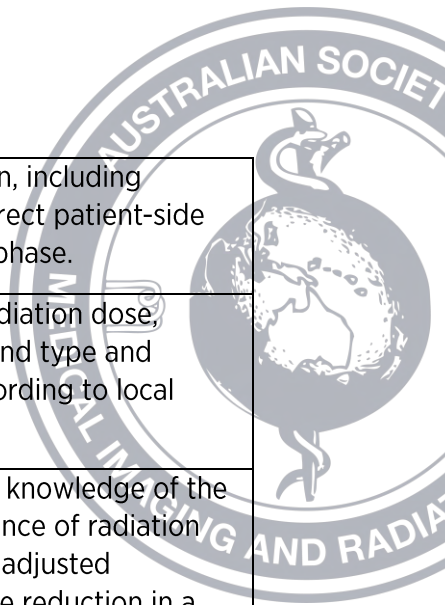
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| <p>6. Demonstrates a thorough knowledge of the principles, clinical application and performance of general nuclear medicine imaging, SPECT, SPECT/CT and PET/CT</p> | <p>Perform planar, SPECT/CT and PET/CT studies, including positioning the patient for the best diagnostic outcome</p> |
| | <p>Has a thorough knowledge of the production of images using a gamma camera and the effect of isotope energies, collimator choice, resolution, time to acquire and artefacts</p> |
| | <p>Has a thorough knowledge of the production of images using a PET/CT, the importance of attenuation correction, half-lives of isotopes, staff and patient dosimetry</p> |
| | <p>Perform and evaluate anatomical/attenuation correction of CT scan</p> |
| | <p>Process data image sets, including multi-planar reformats and volume imaging</p> |
| | <p>Apply the principles underpinning nuclear medicine therapies to practice and maintain currency with vendor specific software advances</p> |
| | <p>Prepare the patient and delivery systems for nuclear medicine radiopharmaceutical therapies</p> |
| | <p>Delivery systems may include but are not limited to intra-arterial, intravenous, oral, subcutaneous and inhalation</p> |
| | <p>Planar, SPECT/CT and PET/CT studies may include but are not limited to bone, myocardial perfusion, gated heart pool, lung perfusion/ventilation, thyroid, and renal studies as well as oncologic, cardiac and neurologic PET studies</p> |
| | <p>6. Demonstrates knowledge of the principles, clinical application, and performance of routine diagnostic Computed Tomography (CT) where appropriate Radiation Use Licence is held</p> |
| | <p>Ensures that authorisation of examination meets local Radiation Management Plan requirements</p> |





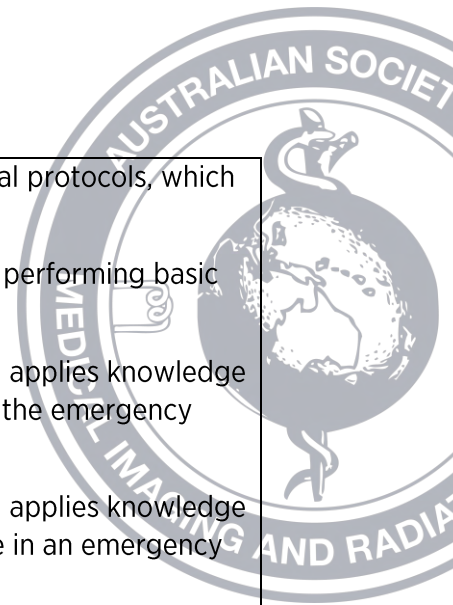
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| | <p>Understands the effect of adjusting radiation exposure factors and scanning parameters on the formation of CT Images.</p> |
| | <p>Understands and adjusts CT equipment configurations appropriate for the patient presentation and clinical request including:</p> <p>Patient position (head-first / feet-first, other orientation)</p> <ul style="list-style-type: none">- Radiation dose modulation- X-ray beam width- Scan Field of View- Helical Pitch- Scan Range- Reconstruction algorithms- Intravenous contrast agents, including injector settings- Oral contrast agents, including volume, dilution and timing.- Respiration phase |
| | <p>Understands the requirements of performing CT, including scans of:</p> <ul style="list-style-type: none">- Head- Neck- Chest- Abdomen- Pelvis- Spine- Vascular System- Musculoskeletal System- With and without contrast agents |
| | <p>Understands the requirement for processing CT data sets, including multiple plane 2D and 3D image reformation.</p> |





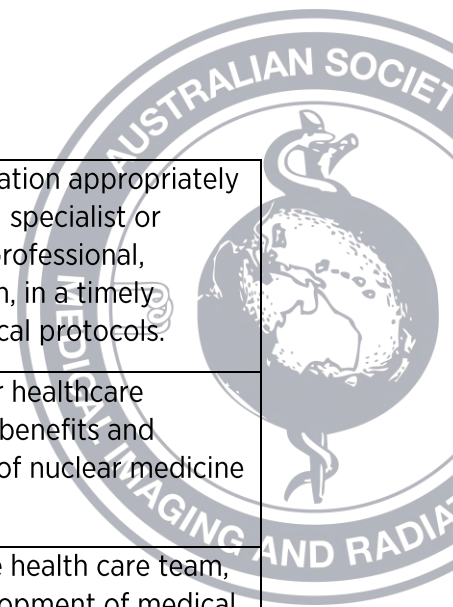
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| | <p>Applies digital annotation, including anatomical, position, correct patient-side indicators, and contrast phase.</p> |
| | <p>Ensures clinical notes, radiation dose, contrast media volume and type and images are archived according to local protocols.</p> |
| <p>7. Demonstrates knowledge of the principles, clinical application and performance of medical imaging across the lifespan</p> | <p>Understands and applies knowledge of the implications and importance of radiation dose control and weight adjusted radiopharmaceutical dose reduction in a paediatric context</p> |
| | <p>Understands paediatric specific anatomy and pathology.</p> |
| | <p>Understands and applies knowledge of equipment configurations and immobilisation aids for paediatric patients</p> |
| | <p>Understands and applies effective communication strategies dependent on developmental level of the child.</p> |
| | <p>Understands and applies knowledge of and equipment configurations and immobilisation aids for older patients</p> |
| | <p>Understands and applies effective communication strategies for older patients.</p> |
| | <p>Understands the issues around consent and substitute decision makers for younger and older patient cohorts.</p> |
| <p>8. Demonstrates knowledge of patient monitoring and care of the deteriorating patient</p> | <p>Understands and applies knowledge of patients' physiological status, including a review of the patient's clinical history and participation in hand-over processes.</p> |
| | <p>Understands and applies knowledge of physiological monitoring equipment and monitors the patient's status throughout the medical imaging procedure.</p> |
| | <p>Recognises and responds to the deteriorating patient (including patient's experiencing adverse contrast media</p> |





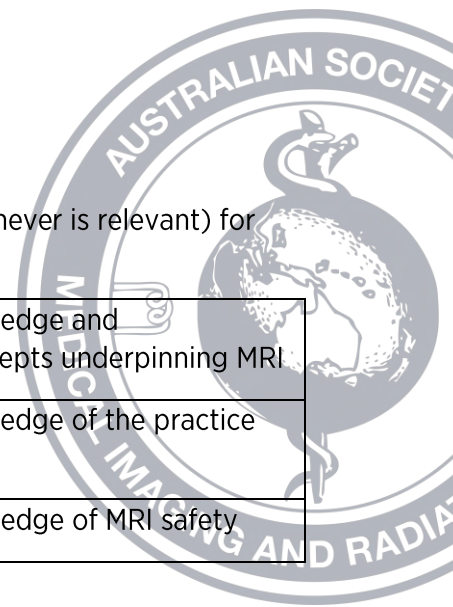
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| | <p>reactions), following local protocols, which includes:</p> <ul style="list-style-type: none"> - the capability of performing basic life support - understands and applies knowledge of drugs used in the emergency situation - understands and applies knowledge of the MRP's role in an emergency response team |
| <p>9. Uses established criteria to assess that image quality is of an acceptable standard</p> | <p>Assesses images to ensure the following image quality criteria are met:</p> <ul style="list-style-type: none"> • Patient demographic data is consistent with imaging request and procedure matching process • Anatomical markers and annotations are correct and do not obscure anatomical or pathological details. • Image artefacts do not unduly obscure anatomical or pathological details or mimic disease. • The required anatomical area is included in the projection / scan range. • The patient has been correctly positioned for the procedure. • The image parameters set provide a diagnostic image. • Pathology or anatomical variants are noted, according to local protocol. <p>An assessment of the need to repeat or complete further imaging is made, which may include consultation with the reporting medical specialist.</p> |
| <p>8. Assesses images for the presence of urgent pathological conditions</p> | <p>Recognises normal and abnormal biodistribution or image appearances and urgent pathological conditions on images</p> |





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| | and conveys this information appropriately to the reporting medical specialist or requesting health care professional, including documentation, in a timely manner, according to local protocols. |
| 9. Demonstrates knowledge and clinical applications of nuclear medicine | Provides advice to other healthcare professionals about the benefits and limitations of the range of nuclear medicine procedures |
| 10. Contributes to the development of nuclear medicine protocols | In collaboration with the health care team, contributes to the development of medical imaging protocols and equipment configurations to minimise radiation dose and maximise diagnostic value. |





Domain 3d: Knowledge and Understanding (MRI)

This domain should be read in conjunction with Domain 3a, 3b or 3c (whichever is relevant) for MRPs using MRI.

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| <ul style="list-style-type: none"> Standard 3d.1 | <ul style="list-style-type: none"> Demonstrates a broad and relevant knowledge and understanding of the key theoretical concepts underpinning MRI |
| <ul style="list-style-type: none"> Standard 3d.2 | <ul style="list-style-type: none"> Demonstrates a broad and relevant knowledge of the practice underpinning MRI. |
| <ul style="list-style-type: none"> Standard 3d.3 | <ul style="list-style-type: none"> Demonstrates a broad and relevant knowledge of MRI safety |

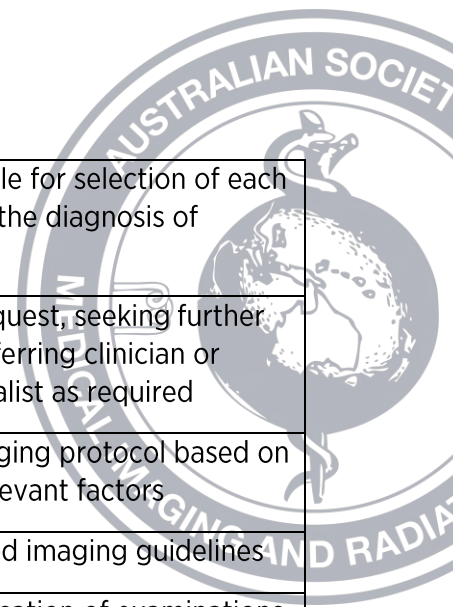
This domain includes the additional knowledge, principles and concepts that are required in the practice of Magnetic Resonance Imaging (MRI). Radiographers, radiation therapists and nuclear medicine technologists are required to understand the principles of MRI physics, image production and acquisition, and the benefits and risks to patients associated with MRI Imaging if MRI is included within their practice.

Standard 3d.1 Demonstrates a broad and relevant knowledge and understanding of the theoretical concepts underpinning MRI

This standard deals with the knowledge base required to practice efficiently and safely in MRI. It covers knowledge of physics, anatomy, pathology, patient behavioural characteristics, and information technology.

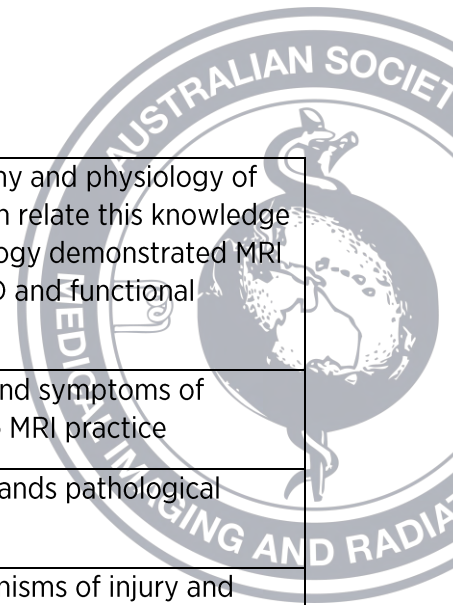
| Element 1: Demonstrate a broad and relevant knowledge of the science of MRI | |
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| Indicators | Cues |
| 1. Demonstrates knowledge of the production, acquisition, optimisation, and analysis of MRI images | Knowledge and application of MRI physics |
| | Knowledge of and the use of the types of equipment used in MRI, including MRI coils. |
| | Knowledge and understanding of MRI image production, image artefacts and pathology mimics |
| | Knowledge and understanding of MRI sequences and applications |
| | Adheres to principles of image acquisition, optimisation, analysis, critique, and quality assurance |
| | Distinguishes between normal and abnormal appearances and communicates these findings according to local protocols |





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| | Understands the rationale for selection of each diagnostic modality for the diagnosis of disease |
| 2. Demonstrates knowledge of risk-benefit analysis involved in the practice of MRI | Justifies the imaging request, seeking further information from the referring clinician or reporting medical specialist as required |
| | Selects appropriate imaging protocol based on a consideration of all relevant factors |
| | Refers to evidence-based imaging guidelines |
| | Ensures that the authorisation of examinations meets local MRI Safety management plans |
| Element 2: Demonstrate a broad and relevant knowledge of physical sciences as it relates to MRI | |
| Indicators | Cues |
| 1. Demonstrates knowledge of the physical principles of MRI | Understands the physics of magnetic fields, magnetic resonance, its application, and interaction with matter. |
| | Understand the principles of image formation, imaging artefacts and the potential for biological effects across all MRI applications. |
| 2. Demonstrates knowledge of principles of MRI in clinical practice | Understands and applies the principles of MRI to clinical practice |
| | Applies knowledge of the principles of MRI physics and its potential for biological effects |
| | Adapts and modifies MRI parameters based on the variables present in any given situation |
| 3. Demonstrates knowledge, principles, application and limitations of equipment and instrumentation | Understands magnet and coil design and application of use for optimal image acquisition. |
| | Understands the function of MRI equipment used for image production and optimisation. |
| | Sets up and uses MRI equipment safely and appropriately for each requested examination, including the use of cleaning equipment to ensure infection prevention. |
| Element 3: Demonstrate a broad and relevant knowledge of biological sciences as it relates to MRI | |





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| 1. Demonstrates knowledge of the anatomy and physiology of the human body | Understands the anatomy and physiology of the human body and can relate this knowledge to anatomy and physiology demonstrated MRI images, including 2D, 3D and functional imaging. |
| 2. Demonstrates knowledge of pathophysiology | Understands the signs and symptoms of disease as they relate to MRI practice |
| | Recognises and understands pathological appearances on MRI |
| | Understands the mechanisms of injury and their manifestation on MRI |
| 3. Demonstrates knowledge of pharmacology related to MRI. | Understands the characteristics, indications, contraindications and potential risk factors and side effects of pharmaceuticals used in MRI (e.g., MRI contrast media) |
| | Understands the diagnostic roles of different contrast media, and their appearance on images. |
| | Understands the implications for contrast media administration during pregnancy and breastfeeding. |
| | Understands the potential limitations of renal dialysis in removing Gadolinium-based contrast from circulation. |
| | Understands the difference in contrast chelates, cyclic vs linear, and the relative stability of each. |
| Element 4: Demonstrates a broad and relevant knowledge of humanities and behavioural sciences as it relates to MRI | |
| Indicators | Cues |
| 1. Demonstrates knowledge of sociological and psychological aspects of patient centred care | Understands that patients may have concerns relating to their condition or the imaging procedure. |
| | Understands that patients will have anxieties and concerns relating to the investigation and adapts communication accordingly |
| 2. Demonstrates knowledge of consent processes Recognises the roles of physical and | Provides an explanation of the procedure, ensuring the patient understands any |



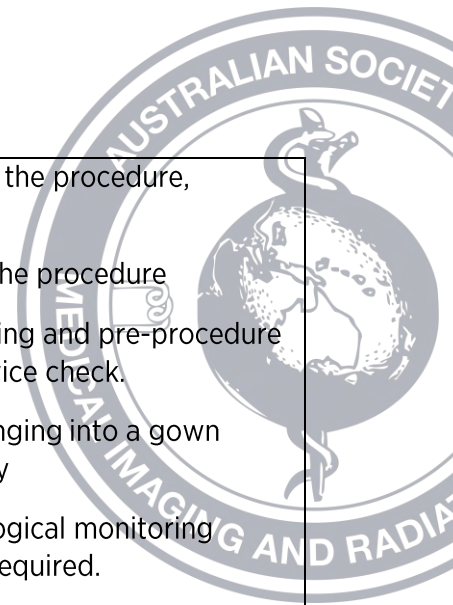
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| psychological preparation for imaging procedures | instructions prior to the commencement of the procedure |
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Standard 3d.2 Demonstrates a broad and relevant knowledge of the practice underpinning MRI

This standard refers to the clinical application of theoretical knowledge of MRI. It covers patient preparation, positioning, radiation dose selection, operation of MRI equipment across a range of settings, image post-processing and archiving, image analysis and interpretation.

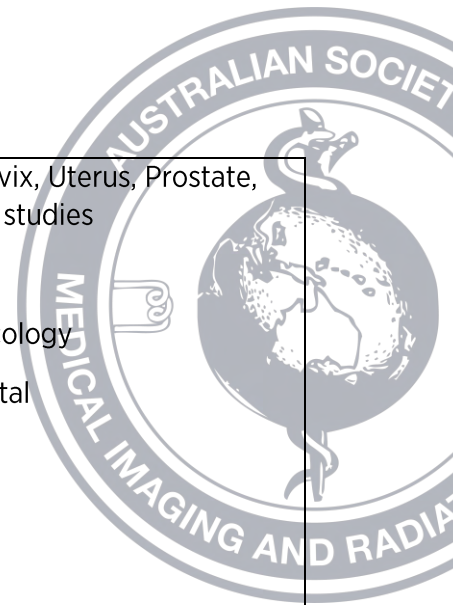
| Element 1: Demonstrates a thorough knowledge of the principles of MRI and their clinical application | |
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| Indicators | Cues |
| 1. Demonstrates knowledge of patient assessment and procedure planning to ensure the procedure is appropriate to the clinical indication. | Plans the procedure according to the individual patient, accounting for any modifications which may be required |
| | Ensures that the request is complete, with all required information, and is issued by an authorised health care provider. |
| | Understands the responsibility to recognise and act when an incorrect or inappropriate examination is requested to fulfil the obligation to justify an MRI examination in the interest of the patient's care. |
| | Discusses imaging techniques and alternative imaging strategies with the requesting health practitioner or reporting medical specialist when indicated. |
| | Follows the Australian Commission for Quality and Safety in Health Care's (6) procedure to ensure correct patient, correct site and correct procedure, including: <ul style="list-style-type: none"> - Verification of patient information - Matching the information against the request form or consent form - Time out immediately prior to the procedure - Post-procedure confirmation and documentation |





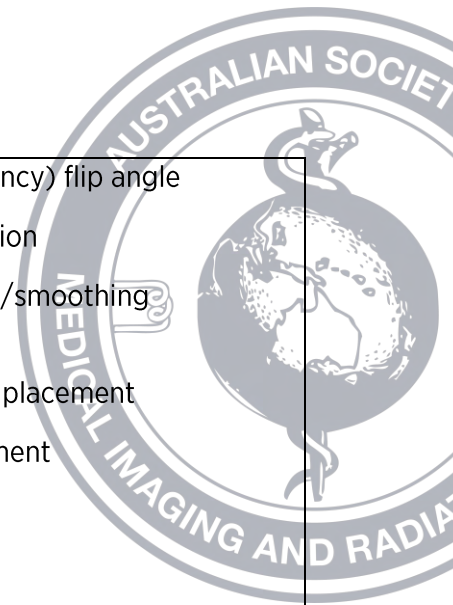
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| | <p>Prepares the patient for the procedure, including:</p> <ul style="list-style-type: none"> - Explanation of the procedure - MRI safety briefing and pre-procedure implantable device check. - Facilitating changing into a gown where necessary - Applies physiological monitoring devices where required. |
| <p>2. Demonstrates knowledge of patient positioning and immobilisation</p> | <p>Uses accessory positioning and immobilisation devices to ensure patient comfort.</p> |
| <p>3. Demonstrates knowledge of principles, clinical application, and performance of MRI in a range of clinical settings. **</p> | <p>Understands the requirement of performing MRI, in a range of clinical settings which may include:</p> <ul style="list-style-type: none"> - An MRI, Radiation Therapy or Nuclear Medicine department in a community or hospital setting - Operating Theatre Setting - Forensic setting <p>Understands the range of clinical applications for MRI including:</p> <ul style="list-style-type: none"> - Brain - Base of skull - IAMs - Orbits - Spine - Brachial Plexus - Cardiac imaging - Mediastinum - Chest wall - Breasts - Abdomen, including Liver, Pancreas, Biliary tree, Small Bowel studies |





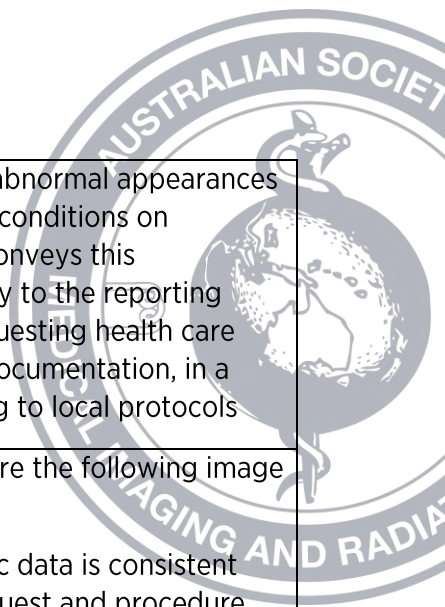
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| | <ul style="list-style-type: none">- Pelvis, including Cervix, Uterus, Prostate, Rectum, Anal fistula studies- Musculo-Skeletal- Obstetrics & Gynaecology- Paediatrics & Neonatal- Small Parts- Vascular- Flow Quantification <p><i>***Not applicable to Radiation Therapy</i></p> |
| | <p>Establishes appropriate MRI imaging protocols required for the examination requested, considering the clinical indications for the procedure, the clinical question the study aims to answer, the clinical condition of the patient and any mechanisms of injury according to local departmental protocols.</p> |
| | <p>Understands and adjusts equipment configurations, including:</p> <ul style="list-style-type: none">- Coil selection- Patient position / orientation- Pulse sequence types, including 2D, 3D, fast spin echo, gradient echo, motion-insensitive options,- Scan plane- Field of view- Phase/Frequency direction- Phase oversampling- Slice thickness- Slice spacing- Chemical shift direction- Pulse sequence timing: TR, TE, TI and effects on imaging weighting- Echo train length- Echo spacing |





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| | <ul style="list-style-type: none"> - RF (radio frequency) flip angle - Intensity correction - Noise/sharpness/smoothing algorithms - Saturation band placement - Shim box placement - Matrix size - RF bandwidth - Gating options, including respiratory bellows, respiratory navigation, peripheral pulse oximetry - Diffusion imaging B value - NEX (number of excitations) - Parallel imaging techniques, including GRAPPA and SENSE - Fat saturation - SAR (Specific Absorption Rate) mode - Time-varying gradient modes (dB/dt) |
| | <p>Understands and applies knowledge of equipment settings, functions, optimisations, and adjustments to ensure optimum imaging</p> |
| | <p>Applies digital anatomical, anatomical measurements, position indicators or patient-side markers where required.</p> |
| | <p>Ensures clinical notes, and images are archived according to local protocols.</p> |
| <p>4. Demonstrates knowledge of the principles, clinical application and performance of MRI for elderly patients.</p> | <p>Understands and applies knowledge of and equipment configurations and immobilisation aids for elderly patients</p> |
| | <p>Understands and applies effective communication strategies for elderly patients.</p> |
| | <p>Understands the issues around consent and substitute decision makers for elderly patient cohorts.</p> |



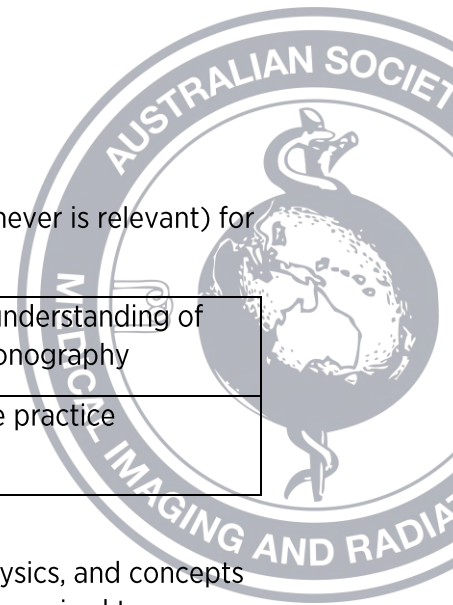


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| | Recognises normal and abnormal appearances and urgent pathological conditions on diagnostic images and conveys this information appropriately to the reporting medical specialist or requesting health care professional, including documentation, in a timely manner, according to local protocols |
| 4. Assesses images for the presence of urgent pathological conditions | <p>Assesses images to ensure the following image quality criteria are met:</p> <ul style="list-style-type: none">-Patient demographic data is consistent with imaging request and procedure matching process-Anatomical markers are correct and do not obscure anatomical or pathological details.-Image artefacts do not unduly obscure anatomical or pathological details or mimic disease.-The required anatomical area is included in the MRI scan range.-The image parameters set provide a diagnostic image.-Pathology or anatomical variants are noted, according to local protocol. <p>An assessment of the need to repeat or complete further MRI is made, which may include consultation with the reporting medical specialist.</p> |
| 5. Demonstrates knowledge and clinical applications of the full range of MRI modalities | Provides advice to other healthcare professionals about the benefits and limitations of the range of MRI modalities |
| 6. Contributes to the development of MRI protocols | In collaboration with the health care team, contributes to the development of MRI protocols and equipment configurations to maximise diagnostic value. |



| Standard 3d.3: Demonstrates a broad and relevant knowledge of MRI safety | |
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| Indicators | Cues |
| 1. Demonstrates knowledge of the biological dangers involved with MRI | Understands the potential impact of the static magnetic field on ferromagnetic objects |
| | Understands SAR (Specific Absorption Rate) and heating phenomena including application of national/international standards |
| | Understands gradient use and peripheral nerve stimulation. including standards |
| | Understands acoustic noise dangers and hearing protection including application of national/international standards |
| | Understands and manages patient risks associated with implanted devices |
| 2. Demonstrates knowledge of MRI safety systems | Knowledge of magnetic fields and how they relate to MRI safety and patient safety |
| | Understanding and managing the MRI Safety Zoning system |
| | Understanding rationale and procedure for screening all staff / patients who enter Zones 3 and 4 |
| | Understanding of Level 1 and Level 2 MRI Personnel and supervision requirements for non-MRI personnel |
| | Knowledge and ability of how to investigate, escalate and document the MRI safety status of implants, devices, objects and equipment |
| | Knowledge and ability to initiate emergency protocols in the event of a magnet quench. |
| 3. Demonstrates a knowledge of local, state and national MRI standards that contribute to a safe work environment | Operates in compliance with relevant local, state or national legislation and guidelines relating to MRI practice. |





Domain 3e: Knowledge and Understanding (Medical Sonography)

This domain should be read in conjunction with Domain 3a, 3b or 3c (whichever is relevant) for MRPs using ultrasound.

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| Standard 3e.1 | Demonstrates a broad and relevant knowledge and understanding of the key theoretical concepts underpinning Medical Sonography |
| Standard 3e.2 | Demonstrates a broad and relevant knowledge of the practice underpinning Medical Sonography. |

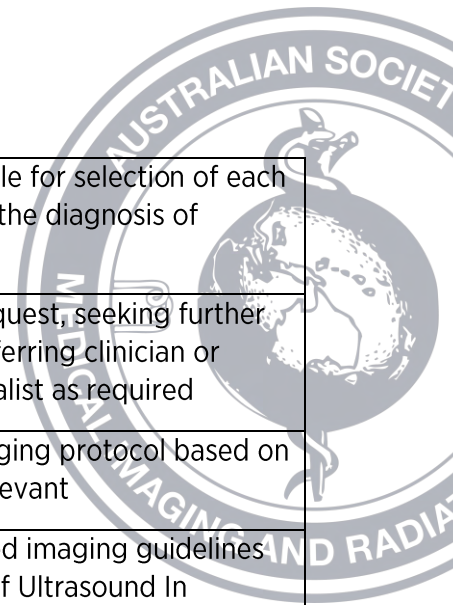
This domain includes the core knowledge base, principles of ultrasound physics, and concepts that are required in the practice of medical sonography. Sonographers are required to understand the principles of sound production, interaction with the human body and image production and the benefits and risks associated with medical sonographic imaging procedures. An understanding of key principles of medical sonographic practice is demonstrated. Knowledge of anatomy, physiology and pathology is used to determine the imaging pathway best suited to answer the clinical question.

Standard 3e.1 Demonstrates a broad and relevant knowledge and understanding of the theoretical concepts underpinning sonography

This standard deals with the knowledge base required by Sonographers to practice efficiently and safely. It covers knowledge of physics, anatomy, pathology, patient behavioural characteristics, and information technology.

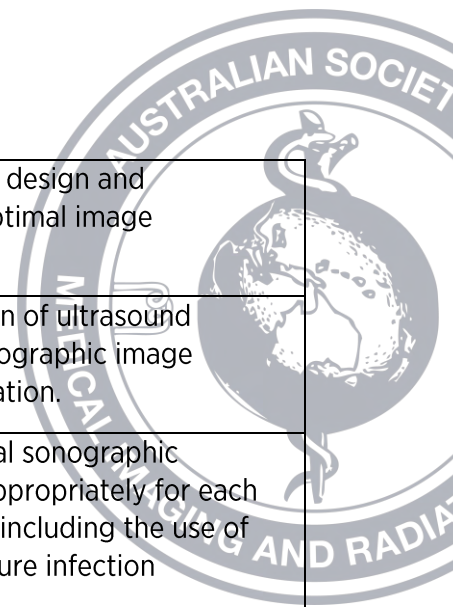
| Element 1: Demonstrate a broad and relevant knowledge of the science of Medical Sonography | |
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| Indicators | Cues |
| 1. Demonstrates knowledge of the production, acquisition, optimisation and analysis of medical images | Knowledge and application of the physics of sound, the interaction of sound waves with matter and sonographic image production |
| | Knowledge of and use of the types of equipment used in medical sonography |
| | Knowledge and application of positioning for imaging procedures, including the use of modified techniques |
| | Adheres to principles of image acquisition, optimisation, analysis, critique and quality assurance |
| | Distinguishes between normal and abnormal appearances and communicates these findings according to local protocols |





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| | Understands the rationale for selection of each diagnostic modality for the diagnosis of disease |
| <p>2. Demonstrates knowledge of risk-benefit analysis involved in the practice of medical sonography.</p> <p>7 Australasian Society for Ultrasound in Medicine (ASUM), Standards of Practice https://www.asum.com.au/standards-of-practice/ accessed on 14/02/2022</p> | Justifies the imaging request, seeking further information from the referring clinician or reporting medical specialist as required |
| | Selects appropriate imaging protocol based on a consideration of all relevant |
| | Refers to evidence-based imaging guidelines e.g. Australian Society of Ultrasound In Medicine <i>Standards of Practice</i> available at ASUM Standards of Practice |
| <p>3. Demonstrates knowledge of the use of medical terminology as it relates to medical sonography</p> | Interprets an imaging request form, understanding terminology and abbreviations used. Understands and applies medical terminology in Medical Sonography |
| | Understands and applies medical terminology in Medical Sonography |
| | Communicates appropriately with patients about the safety of medical sonography. |
| Element 2: Demonstrate a broad and relevant knowledge of physical sciences as it relates to Medical Sonography | |
| Indicators | Cues |
| <p>1. Demonstrates knowledge of the physical principles of medical sonography</p> | Understands the physics of sound, application, and interaction with matter. |
| | Understand the principles of image formation, imaging artefacts and the potential for biological effects across all Medical Sonography applications. |
| <p>2. Demonstrates knowledge of principles of sonography in clinical practice</p> | Understands and applies the principles of medical sonography to clinical practice |
| | Applies knowledge of the principles of ultrasound physics and its potential for biological effects |
| | Adapts and modifies sonographic parameters based on the variables present in any given situation |





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| 3. Demonstrates knowledge, principles, application and limitations of equipment and instrumentation | Understands transducer design and application of use for optimal image acquisition. |
| | Understands the function of ultrasound equipment used for sonographic image production and optimisation. |
| | Sets up and uses medical sonographic equipment safely and appropriately for each requested examination, including the use of cleaning equipment ensure infection prevention. |
| Element 3: Demonstrate a broad and relevant knowledge of biological sciences as it relates to Medical Sonography | |
| Indicators | Cues |
| 1. Demonstrates knowledge of the anatomy and physiology of the human body | Understands the anatomy and physiology of the human body and can relate this knowledge to anatomy demonstrated on sonographic images, including 2D, 3D and Doppler imaging. |
| 2. Demonstrates knowledge of pathophysiology | Understands the signs and symptoms of disease as they relate to sonographic practice |
| | Recognises and understands pathological appearances on medical sonographic images |
| | Understands the mechanisms of injury and their manifestation on medical sonographic images |
| 4. Demonstrates knowledge of pharmacology related to medical sonography. | Understands the characteristics, indications, contra indications and potential risk factors and side effects of pharmaceuticals used in Medical Sonography (e.g. sonographic contrast media) |
| Element 4: Demonstrates a broad and relevant knowledge of humanities and behavioural sciences as it relates to Medical Sonography | |
| Indicators | Cues |
| 1. Demonstrates knowledge of sociological and psychological aspects of patient centred care | Understands that patients may have concerns relating to their condition, the imaging procedure and the potential diagnosis. |
| | Understands that patients will have anxieties and concerns relating to the investigation and adapts communication accordingly |



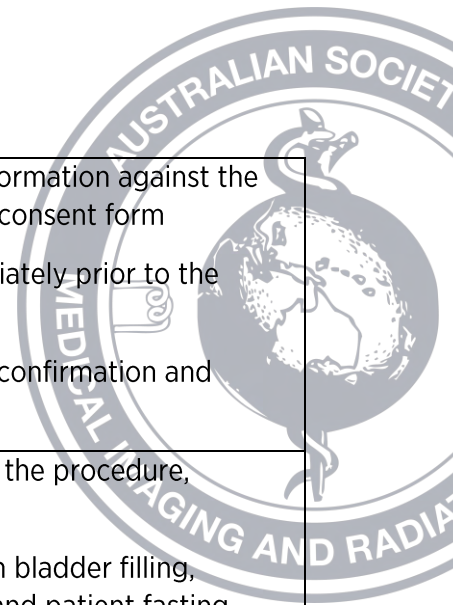
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| 2. Demonstrates knowledge of consent processes Recognises the roles of physical and psychological preparation for imaging procedures | Provides an explanation of the procedure, ensuring the patient understands any instructions prior to the commencement of the procedure |
| | Obtains and documents consent for transvaginal or breast procedures, or procedures involving the examination of the external genitals, according to the Australian Commission for Quality and Safety in Health Care's (6) protocols. |

Standard 3e.2 Demonstrates a broad and relevant knowledge of the practice underpinning Medical Sonography

This standard refers to the clinical application of theoretical knowledge of Medical Sonography. It covers patient preparation, positioning, operation of Medical Sonography equipment across a range of settings, image post-processing and archiving, image analysis and interpretation.

| Element 1: Demonstrates a thorough knowledge of the principles of Medical Sonography and their clinical application | |
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| Indicators | Cues |
| 1. Demonstrates knowledge of patient assessment and procedure planning to ensure the procedure is appropriate to the presenting diagnostic query. | Plans the procedure according to the individual patient, accounting for any modifications which may be required |
| | Ensures that the request is complete, with all required information, and is issued by an authorised health care provider. |
| | Understands the responsibility to recognise and act when an incorrect or inappropriate examination is requested to fulfil the obligation to justify a sonographic examination in the interest of the patient's care. |
| | Discusses imaging techniques and alternative imaging strategies with the requesting health practitioner or reporting medical specialist when indicated. |
| | Follows the Australian Commission for Quality and Safety in Health Care's (6) procedure to ensure correct patient, correct site and correct procedure, including: <ul style="list-style-type: none"> - Verification of patient information |





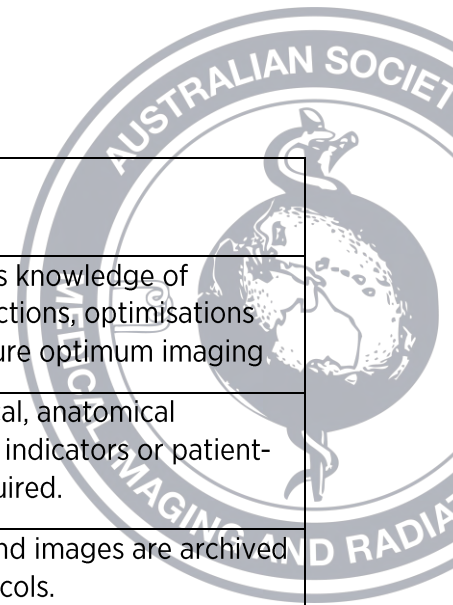
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| | <ul style="list-style-type: none"> - Matching the information against the request form or consent form - Time out immediately prior to the procedure - Post-procedure confirmation and documentation |
| | <p>Prepares the patient for the procedure, including:</p> <ul style="list-style-type: none"> - Pre-examination bladder filling, stomach filling and patient fasting, where required - Explanation of the procedure - Facilitating changing into a gown where necessary - Warming acoustic couplant gel to body temperature. |
| <p>1. Demonstrates knowledge of patient positioning and immobilisation</p> | <p>Uses accessory positioning and immobilisation devices to ensure patient comfort.</p> |
| <p>3. Demonstrates knowledge of principles, clinical application, and performance of medical sonography in a range of clinical settings.</p> | <p>Understands the requirement of performing medical sonography, including mobile medical sonography, in a range of clinical settings which may include:</p> <ul style="list-style-type: none"> - A Medical Sonography department in a community or hospital setting - Emergency Department - Obstetric / Gynaecology Department - Cardiology Department - Intensive Care Unit - Operating Theatre - Hospital Ward - Forensic setting <p>Understands the range of clinical applications for sonography, and practices within scope of sonographic sub-speciality:</p> <ul style="list-style-type: none"> - Abdominal |





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| | <ul style="list-style-type: none">- Breast- Cardiac & Lung- Musculo-Skeletal- Obstetrics & Gynaecology- Paediatrics & Neonatal- Small Parts- Vascular |
| | Establishes appropriate sonographic imaging protocol required for the examination requested, taking into account the clinical indications for the procedure, the clinical condition of the patient and any mechanisms of injury according to local departmental protocols. |
| | Understands and adjusts equipment configurations, including: <ul style="list-style-type: none">- Transducer selection- Frequency selection- Image Gain (2D)- Time-Gain Compensation- Read and Write zoom functions- Depth adjustment- Focus adjustment- B- Mode- M Mode- Doppler Mode, including Colour, Continuous wave Doppler, Pulsed Wave and Duplex.- Pulse inversion mode (I believe this is used for contrast enhancement and not really part of the basic skillset)- Harmonic mode- 3D mode- Elastography functions |

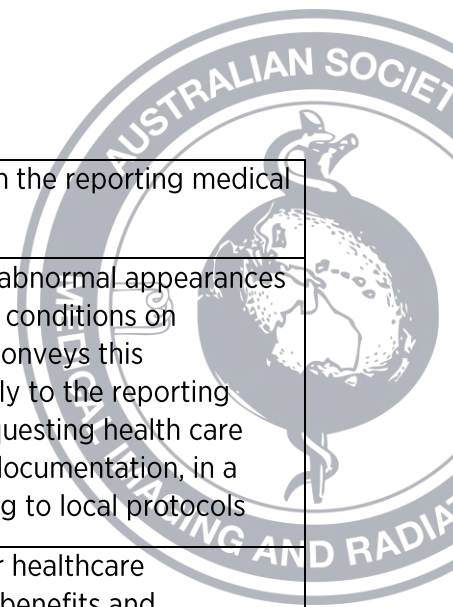




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| | <p>- Cine-loops</p> <p>Understands and applies knowledge of equipment settings, functions, optimisations and adjustments to ensure optimum imaging</p> <p>Applies digital anatomical, anatomical measurements, position indicators or patient-side markers where required.</p> <p>Ensures clinical notes, and images are archived according to local protocols.</p> |
| <p>2. Demonstrates knowledge of the principles, clinical application and performance of medical sonography for elderly patients.</p> | <p>Understands and applies knowledge of and equipment configurations and immobilisation aids for elderly patients</p> <p>Understands and applies effective communication strategies for elderly patients.</p> <p>Understands the issues around consent and substitute decision makers for elderly patient cohorts.</p> <p>Assesses images to ensure the following image quality criteria are met:</p> <ul style="list-style-type: none"> -Patient demographic data is consistent with imaging request and procedure matching process -Anatomical markers are correct and do not obscure anatomical or pathological details. -Image artefacts do not unduly obscure anatomical or pathological details or mimic disease. -The required anatomical area is included in the sonographic scan range. -The image parameters set provide a diagnostic image. -Pathology or anatomical variants are noted, according to local protocol. -An assessment of the need to repeat or complete further medical sonography is made, which may include |



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| | consultation with the reporting medical specialist. |
| 3. Assesses images for the presence of urgent pathological conditions | Recognises normal and abnormal appearances and urgent pathological conditions on diagnostic images and conveys this information appropriately to the reporting medical specialist or requesting health care professional, including documentation, in a timely manner, according to local protocols |
| 4. Demonstrates knowledge and clinical applications of the full range of Medical Sonography modalities | Provides advice to other healthcare professionals about the benefits and limitations of the range of Medical Sonography modalities |
| 5. Contributes to the development of Medical Sonography protocols | In collaboration with the health care team, contributes to the development of Medical Sonography protocols and equipment configurations to maximise diagnostic value. |





Domain 4: Critical Thinking and Evaluation

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| Standard 4.1 | Evaluates own clinical practice and responds to any performance issues identified |
| Standard 4.2 | Analyses and responds to problems related to patient's procedure and care |
| Standard 4.3 | Initiates and evaluates research outcomes and incorporates these into evidence-based practice where relevant |

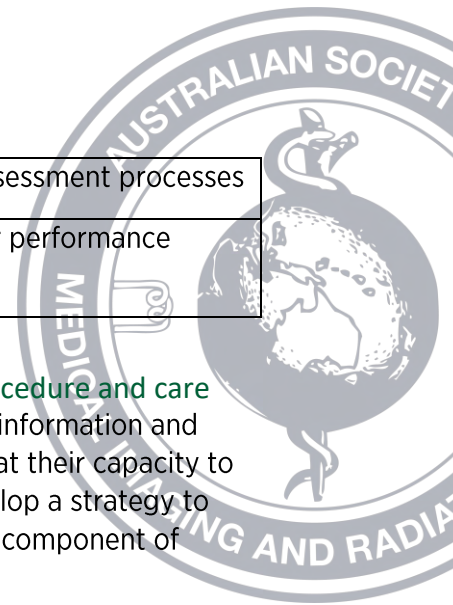
This domain encompasses the ability of the MRP to think critically, creatively and reflectively. It covers the use of effective evaluation methods for assessing each clinical situation and formulating an appropriate course of action. The ability to reflect critically on personal performance and review and modify when indicated, is an essential component of effective clinical practice. Research and evidence-based practice is a component of this domain.

Standard 4.1 Evaluates own clinical practice and responds to any performance issues identified

This standard relates to clinical reasoning and judgment and the MRP role in providing quality clinical services to patients. The MRP's ability to provide safe, high-quality care is dependent upon their ability to reason, think, and apply problem-solving skills to their clinical practice. Critical thinking is an essential skill in the ongoing provision of excellent clinical care.

| Element 1: Ability to audit, reflect upon and review individual professional practice | |
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| 1. Audits practice by reflecting on, and reviewing performance | Undertakes regular self-evaluation and reflects on clinical practice methods |
| | Benchmarks personal practice |
| | Identifies and implements corrective actions |
| | Participates in patient safety review processes which may include audit of practice and participation in Mortality and Morbidity reviews |
| 2. Recognises different sources of feedback on professional performance | Describes the reflective learning and peer review processes |
| | Seeks feedback from supervisors and peers with a goal of continual improvement |





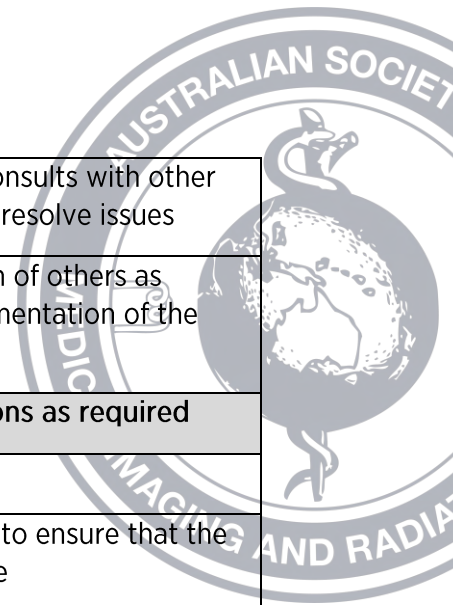
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| | Participates in self-assessment processes |
| | Participates in regular performance review processes |

Standard 4.2 Analyses and responds to problems related to patient’s procedure and care

This standard relates to the ability of MRPs to access and interpret clinical information and apply professional judgement to formulate an objective response. It looks at their capacity to recognise and define problems within the patient care setting, and to develop a strategy to solve these. It also incorporates evaluation of the proposed solution, a key component of continuous quality improvement.

| Element 1: Identify problems/issues as they arise in clinical practice | |
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| Indicators | Cues |
| 1. Reflects on clinical practice to recognise potential problems/issues as they arise | Predicts potential problems/issues, reports/documents hazards/near misses and reacts appropriately to prevent the problem or minimise its effect |
| | Addresses problems/issues which directly impact on immediate workflow as they occur |
| 2. Analyses the reason for the problem/issue | Ascertains and describes the cause of the problem/issue |
| | Analyses and describes factors which may lead to an escalation of the problem/issue |
| | Identifies all involved factors to ensure a comprehensive understanding of the problem/issue |
| Element 2: Apply clinical knowledge and experience to solve problems and ensure care is delivered to achieve best practice | |
| Indicators | Cues |
| 1. Develops a plan for resolving the problem | Explores options to resolve the issue |
| | Applies critical thinking and problem-solving strategies when indicated |
| | Selects the most appropriate solution for the best possible outcome for the patient |





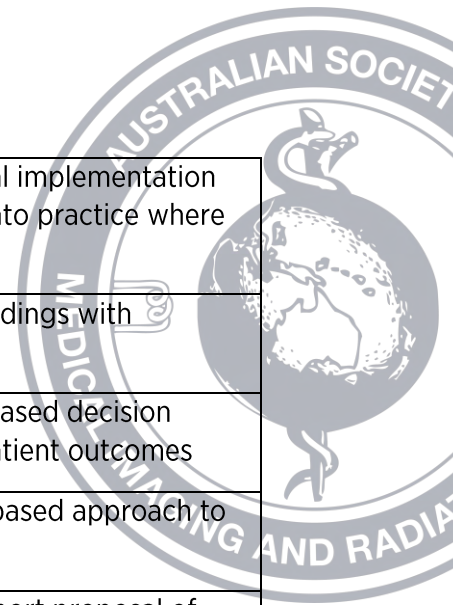
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| 2. Uses a collaborative approach to reach a resolution | Communicates and consults with other parties as required to resolve issues |
| | Seeks the cooperation of others as required in the implementation of the agreed solution |
| Element 3: Monitors and reviews the issue and modifies solutions as required | |
| Indicators | Cues |
| 1. Reviews the situation once a solution has been established and implemented | Reviews the situation to ensure that the solution is appropriate |
| | Identifies the need for further action if required |
| | Incorporates lessons learned from clinical incident reviews into own clinical practice |

Standard 4.3 Evaluates and implements research outcomes and incorporates into practice where relevant

This standard deals with the ability of the MRP to critically evaluate published research and identify its strengths and weaknesses. It also includes judging the overall quality of research regarding its application to clinical practice and supporting the incorporation of research into clinical practice when appropriate.

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| Element 1: Evaluates the appropriateness of implementing research findings into practice | |
| Indicators | Cues |
| 1. Analytical approach to research published | Critically evaluates research with respect to clinical questions |
| 2. Newly gained knowledge is considered in the context of its application to current clinical practice | Demonstrates analytical skills when evaluating current research |
| | Shares, discusses and reviews knowledge obtained from conferences, workshops and seminars |
| Element 2: Applies research and evaluation findings to practice | |
| Indicators | Cues |
| 1. Seeks to apply newly gained knowledge in the clinical environment | Considers how research findings could be implemented into clinical practice |





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|---------------------------------------|--|
| | Seeks to propose local implementation of research findings into practice where appropriate |
| | Discusses research findings with colleagues |
| 2. Engages in evidence-based practice | Facilitates evidence-based decision making to improve patient outcomes |
| | Applies an evidence-based approach to daily practice |
| | Uses evidence to support proposal of new protocols |



Domain 5: Service Delivery and Clinical Management

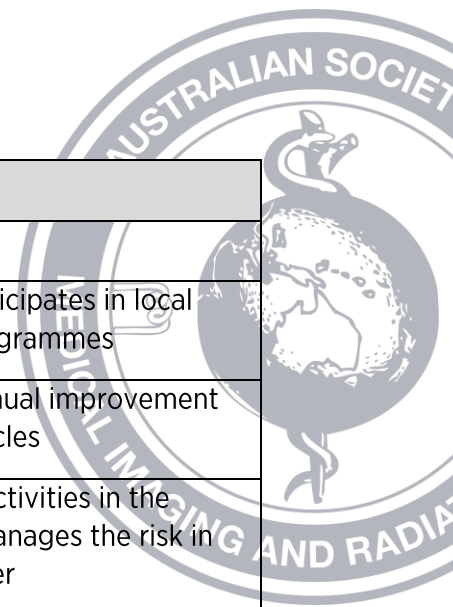
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| Standard 5.1 | Management of quality issues relating to effective practice |
| Standard 5.2 | Contributes to maintaining a safe working environment |
| Standard 5.3 | Acts to preserve the safety of individuals and groups at all times |
| Standard 5.3 | Plans resources needed for service delivery |

Standard 5.1 Management of quality issues relating to effective practice

This standard encompasses the responsibility MRPs have for ensuring the quality of professional services is maintained and improved for the benefit of patients. It deals with quality control, quality assurance activities and audits, including those which are regulated through official accreditation pathways, those undertaken to ensure the equipment is functioning appropriately, those that ensure the imaging produced and/or therapeutic procedure delivered, is evidence informed best practice standard.

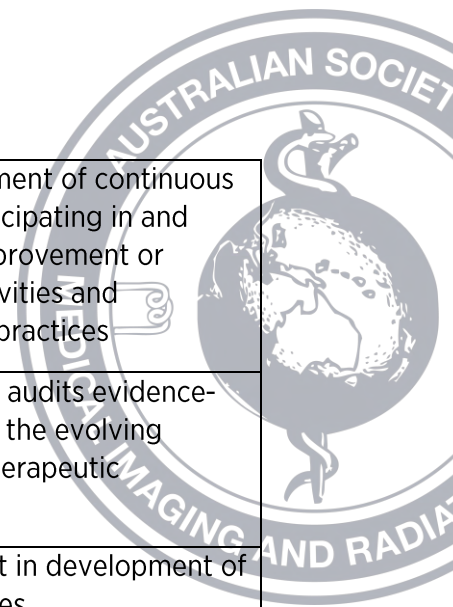
| Element 1: Evaluates the quality of practice in the clinical setting | |
|--|---|
| Indicators | Cues |
| 1. Understands the principles of quality assurance, clinical audit and risk assessment | Understands and applies quality assurance processes |
| | Recognises the need to monitor and evaluate practice to maintain high quality service and their role in risk management |
| | Contributes to the collection and maintenance of documented evidence of quality assurance activities |
| | Understands the role of audit and review as they relate to quality assurance |
| | Follows the risk management process and protocols as defined by the workplace |
| 2. Routine clinical practice is evidence based | Complies with evidence-based policies and procedures for procedure methods that are consistent with professional standards |
| | Recognises that quality improvement is a continuous process incorporating new evidence-based developments and standards of practice |





| Element 2: Contributes to quality assurance procedures | |
|--|---|
| Indicators | Cues |
| 1. Contributes to risk assessment, audit and quality assurance | Understands and participates in local quality assurance programmes |
| | Works towards continual improvement i.e. conducts audit cycles |
| | Assesses the risk of activities in the clinical setting and manages the risk in an appropriate manner |
| 2. Evaluates results and takes appropriate action when indicated | Performs equipment quality assurance activities as required to ensure equipment is operating effectively and safely |
| | Ensures all values achieved in quality assurance tests fall within the tolerance levels |
| | Repeats tests when necessary and takes corrective action or escalates to appropriate person |
| | Reports problems relating to equipment in the appropriate manner |
| | Reports the potential risks to the relevant parties |
| Element 3: Contributes to enhanced service quality | |
| Indicators | Cues |
| 1. Understands the patient's right to receive safe and high-quality diagnostic or therapeutic services | Ensures a high-quality service is delivered to all patients by maintaining professional standards |
| 2. Understands the means by which the quality of diagnostic or therapeutic services can be maintained and improved | Applies quality assurance and quality improvement methods, including audit |
| 3. Accepts responsibility for assuring the quality of professional services provided | Identifies mechanisms through which the quality of professional services can be maintained and improved |
| | Complies with policies and procedures which are conducive to quality practice |



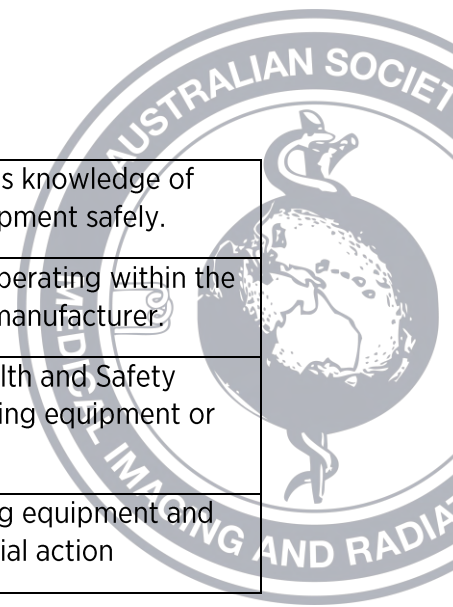


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| 4. Seeks continuous improvement in service quality | Promotes an environment of continuous improvement by participating in and promoting quality improvement or quality assurance activities and reviewing workplace practices |
| 5. Shows initiative in implementing and evaluating changes to practice | Proposes, applies and audits evidence-based changes within the evolving medical imaging or therapeutic environment |
| | Proactive involvement in development of policies and procedures. |

Standard 5.2 Contribute to maintaining a safe working environment

| Element 1: Accepts responsibility for maintaining a safe working environment. | |
|---|---|
| Indicators | Cues |
| 1. Understands the need to maintain a safe working environment | Maintains the work environment in compliance with workplace safety legislation |
| | Maintains competencies according to workplace safety legislation |
| 2. Knowledge of risk management protocols | Complies with risk management protocols Maintains knowledge of safety procedures |
| 3. Maintains workplace safety | Complies with workplace safety policies and procedures |
| | Promotes a 'no blame' safety culture within the work environment |
| | Identifies potential workplace hazards and risks and implements effective mitigation strategies |
| | Acts to ensure that the physical and radiation safety of all personnel in the workplace is maintained |
| | Understands and applies radiation protection principles |
| | Escalates safety issues and reports appropriately as per local, state or national standards |





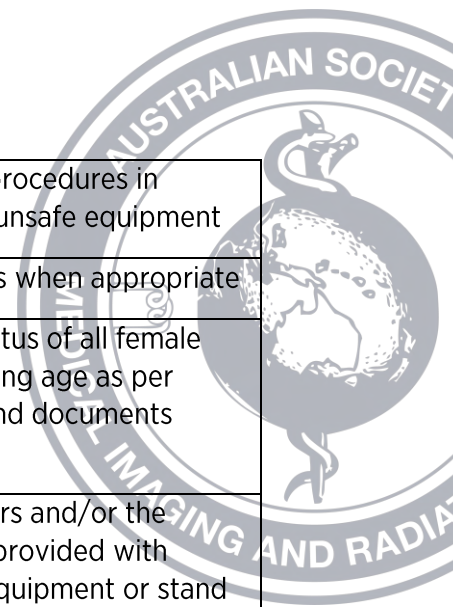
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| 3. Operates equipment in a safe manner | Understands and applies knowledge of operating imaging equipment safely. |
| | Ensures equipment is operating within the parameters set by the manufacturer. |
| | Follows Workplace Health and Safety guidelines when operating equipment or assisting patients |
| | Identifies malfunctioning equipment and takes immediate remedial action |

Standard 5.3 Acts to preserve the safety of individuals and groups at all times

This standard relates to the practical applications of the policies and procedures including but not limited to radiation protection, infection control, and incident reporting and risk management. MRPs have a responsibility for the safety of patients, staff, visitors, and themselves.

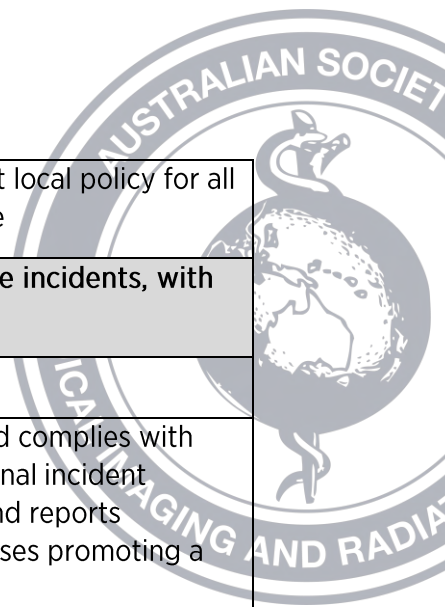
| Element 1: Demonstrates knowledge of radiation safety to a level that supports safe practice in medical radiation. | |
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| Indicators | Cues |
| 1. Demonstrates a thorough knowledge of and adherence to radiation safety and protection policies and legislation that support safe practice | Adheres to the local radiation management plan (RMP) |
| | Ensures that all procedures are performed in compliance with the ALARA principle |
| | Follows the correct patient, correct site, correct procedure guidelines |
| | Complies with the relevant sections of the ARPANSA Code of Practice (RPS 14) and Safety Guides (RPS 14.1 & 14.3) |
| | Understand and applies knowledge of occupational radiation dose standards |
| | Uses and maintains personal protective equipment, including personal radiation monitoring |
| | Operates equipment in a manner consistent with national guidelines and state and territory radiation safety legislation |





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| 2. Identifies and reports unsafe equipment | Follows appropriate procedures in response to faulty or unsafe equipment |
| 3.Ensures practice is aligned to radiation safety principles. | Uses shielding devices when appropriate |
| | Checks pregnancy status of all female patients of child-bearing age as per workplace protocol and documents patient response. |
| | Ensures patient's carers and/or the health care team are provided with Personal Protective Equipment or stand at a safe distance when present in the procedure room when radiation is used |
| Element 2: Demonstrates knowledge of working safely in a clinical environment. | |
| Indicators | Cues |
| 1.Demonstrates knowledge and applies infection prevention principles | Applies infection prevention principles for the procedure including: <ul style="list-style-type: none"> - 5 moments of hand hygiene - Use of personal protective equipment - Cleaning equipment after each patient encounter with appropriate cleaning products |
| | Identification of and implementation of safety protocols for patients with suspected / confirmed communicable infectious diseases |
| Demonstrates knowledge of how to manage occupational violence and bullying in the workplace | Understands how to identify and report occupational violence and bullying for self and colleagues |
| Element 3: Identifies risk to safe practice and takes appropriate action | |
| Indicators | Cues |
| 1. Understands potential risk factors in the clinical environments | Manages workload to ensure safe practice |
| | Maintains personal mental and physical health as appropriate to allow safe and competent practice |





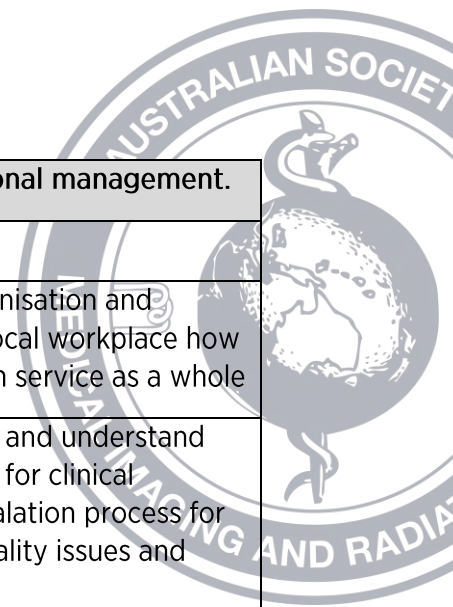
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| 2. Ensures a safe working environment for patients and others | Complies with relevant local policy for all aspects of patient care |
| Element 3: Analyses and documents issues related to reportable incidents, with recommendations for future corrective actions | |
| Indicators | Cues |
| 1. Manages clinical and staff incidents and near misses | Promptly identifies and complies with local and/or jurisdictional incident management policy and reports incidents and near misses promoting a 'no blame' culture |
| | Engages in reviewing incidents and near misses to improve safety and practice |
| | Incidents are documented clearly and completely in a timely fashion using the appropriate channels |
| | Understands the need to be accountable for incident reporting |

Standard 5.4 Plan resources for service delivery

This standard relates to the ability of MRPs to prioritise workload and workflow to make the best use of available resources. It encompasses the requirement to plan for predicted workload and ensure resources will be sufficient to meet workload demands.

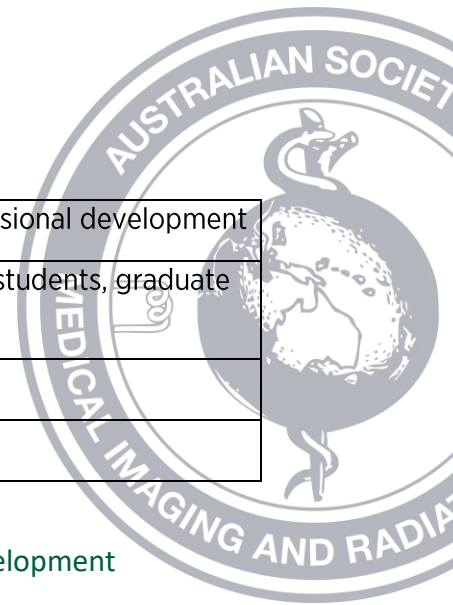
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| Element 1: Confirms resources are sufficient for the workload | |
| Indicators | Cues |
| 1. Understands the staffing levels required for safe service delivery | Considers workload and staffing levels in order to maintain standards of patient care |
| | Reports workload issues and escalates unsafe workloads |
| 2. Ensures accessory equipment and stock is adequate for the workload | Ensures adequate accessory equipment and stock are available for workload |
| Element 2: Manages resources appropriately | |
| Indicators | Cues |
| 1. Makes best use of available resources | Effectively manages resources according to the workload |
| 2. Ensure waste products are disposed of safely | Follows protocols for the disposal of sharps and biohazardous waste |





| Element 3: Demonstrates knowledge of health care organisational management. | |
|---|---|
| Indicators | Cues |
| 1. Demonstrates a knowledge of the organisational and management structure | Understands the organisation and management of the local workplace how it fits within the health service as a whole |
| | Identifies clinical risks and understand the reporting process for clinical incidents and the escalation process for patient safety and quality issues and risks to be managed. |





Domain 6: Lifelong Learning

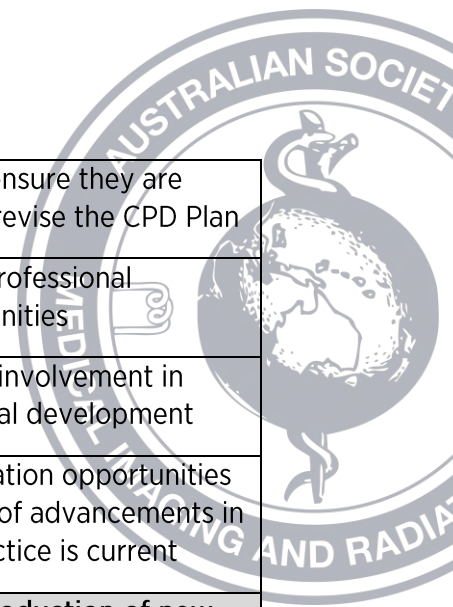
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| Standard 6.1 | Demonstrates commitment to continuing professional development |
| Standard 6.2 | Participates in the training and development of students, graduate practitioners and colleagues |
| Standard 6.3 | Participates in guiding the learning of others |
| Standard 6.4 | Participates in research relating to practice |

Standard 6.1 Demonstrates commitment to continuing professional development

This standard covers acceptance, understanding of, and commitment to the concept of continuing professional development which is essential to maintain, develop and enhance professional skills and knowledge. It is essential that MRPs keep up to date with current developments, trends and technologies, in all areas relevant to their professional activity.

| Element 1: Commits to lifelong learning | |
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| Indicators | Cues |
| 1. Understands the importance of lifelong learning and commits to active participation | Understands the role that lifelong learning plays in professional development in the delivery of contemporary quality procedures |
| | Demonstrates evidence of lifelong learning relevant to their profession |
| Element 2: Uses ASMIRT Professional Practice Standards to assess own performance | |
| Indicators | Cues |
| 1. Critically reflects on own professional knowledge | Identifies and acknowledges limitations of knowledge and does not practice outside scope of practice |
| | Determines own educational needs and undertakes additional education and/or training to address the gaps in knowledge identified. This could be demonstrated in the form of a learning plan |
| Element 3: Participates regularly in continuing professional development | |
| Indicators | Cues |
| | Compares learning and development accomplishments with previously |





| | |
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| 1. Engages in and reflects upon professional development | determined goals to ensure they are being achieved or to revise the CPD Plan |
| | Takes advantage of professional development opportunities |
| | Maintains a record of involvement in continuing professional development |
| 2. Demonstrates an understanding of developments and trends in medical radiation practice | Attends regular education opportunities to ensure knowledge of advancements in medical radiation practice is current |
| Element 4: Participates in training programs related to the introduction of new technologies and procedures | |
| Indicators | Cues |
| 1. Undertakes applications training following the installation of new equipment and/or software | Reads the appropriate manuals regarding operation and safe use of equipment before use |
| | Participates in training delivered by Applications Specialist or other suitably trained personnel on new equipment prior to using |
| | Ensures knowledge and understanding of limitations and capabilities of new equipment |
| | Participates in the implementation of any required change to practice |
| Element 5: Commits to the development of the profession | |
| Indicators | Cues |
| 1. Participates in activities of the Australian Society of Medical Imaging and Radiation Therapy | Engages in activities of the professional organisation |
| | Encourages colleagues to participate in activities organised by the professional body |
| 2. Undertakes activities to advance the profession | Supports activities associated with research, investigation and publication for the advancement of medical radiation science as a profession |
| | Is an ambassador for the medical radiation science profession |



Standard 6.2 Participates in the education of students

This standard relates to the responsibility MRPs have in assisting students and graduates to acquire the knowledge, skills and attributes for professional practice. It also deals with the role that feedback provides during the learning process.

| Element 1: Participates in education of students | |
|---|---|
| Indicators | Cues |
| 1. Engages in provision of appropriate clinical practice for students relevant to their stage of education and experience | Supports students to gain the maximum experience from procedures they undertake |
| | Role models appropriate professional behaviour |
| | Facilitates experiential learning under supervision by providing learning opportunities which are relevant and diverse |
| | Communicates information, ideas and techniques, and encourages the use of problem-solving skills and development of reflective practice |
| | Helps set specific achievable goals and outcomes for clinical practice and provides constructive feedback |
| Element 2: Evaluates the progress of students towards expected outcomes | |
| Indicators | Cues |
| 1. Provide formal and informal feedback arising from clinical experience provided | Evaluates performance against established criteria for the learning objectives of the clinical placement |
| | Provides specific, objective and accurate feedback in a timely and supportive manner |
| | Participates in professional development to improve clinical supervision and constructive feedback skills |





Standard 6.3 Participates in supporting the learning of others

This standard relates to the role MRPs have as health professionals to disseminate their knowledge, experience and expertise to their colleagues, health professionals from other disciplines and promotion of the profession to the wider community.

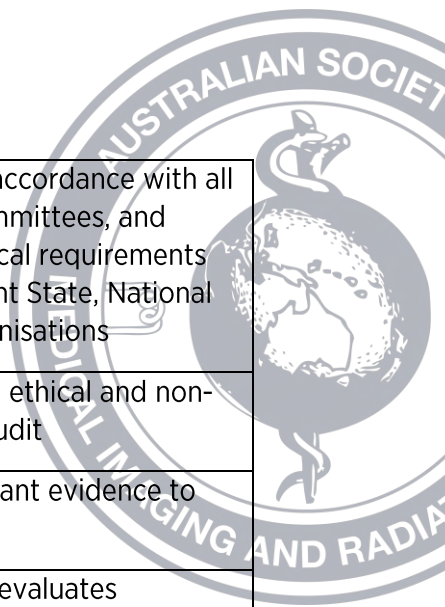
| Element 1: Contributes to learning experiences and professional development of others | |
|---|---|
| Indicators | Cues |
| 1. Participates in communication that will educate staff, patients, and wider community | Engages in educating staff and the public about medical imaging or radiation therapy practice |
| | Ensures that the information presented is evidence based, accurate and current |
| 2. Participates in formal and informal education opportunities involving colleagues and peers | Undertakes formal or informal education sessions with the multi-disciplinary team |
| | Presents or contributes to multi-disciplinary team education sessions |

Standard 6.4 Supports research relating to practice

This standard looks at the development of a sound scientific research base to inform service planning and decision-making. MRPs should support ways to increase research capacity within their practice and incorporate initiatives for continual improvement to clinical outcomes.

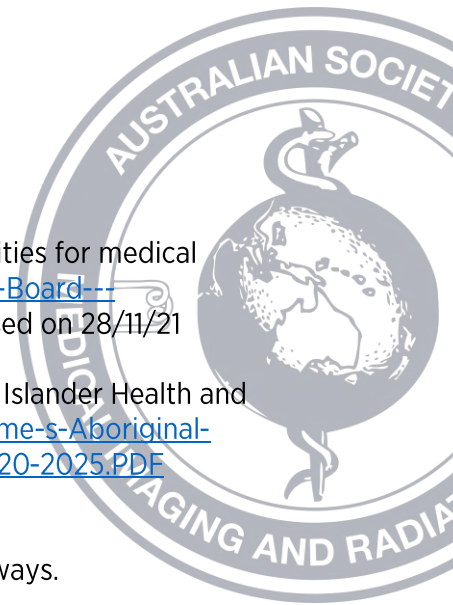
| Element 1: Demonstrates an understanding of the significance of research in contemporary practice | |
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| Indicators | Cues |
| 1. Recognises the value of research in the development of the practice of medical radiation science | Understands the relevance of research for improving health outcomes |
| 2. Demonstrates an understanding of the relevant research methods to the practice of medical radiation science | Is aware of a range of different research methods and how they can be applied |
| 3. Recognises the impact of research on contemporary practice | Disseminates findings of research activities within the profession |
| | Evaluates new evidence and participates in change management processes where new practice is indicated |
| Element 2: Demonstrates knowledge of research as it relates to the professions | |
| Indicators | Cues |





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| 1. Demonstrates knowledge of ethical requirements for research | Conducts research in accordance with all institutional ethics committees, and complies with the ethical requirements outlined by the relevant State, National and International organisations |
| | Distinguishes between ethical and non-ethical research and audit |
| 2. Demonstrates knowledge of principles of evidence-based practice | Uses current and relevant evidence to aid in decision making |
| | Reviews and critically evaluates literature with respect to research methodology, data collection and analysis |
| Element 3: Support developments in the science and practice of the professions | |
| Indicators | Cues |
| 1. Support developments in the practice of medical radiation science | Contribute to the development of the medical radiation science knowledge base by participating in research projects |
| | Identifies areas within practice which may benefit from scientific investigation |





References

- 1 Medical Radiation Practice of Australia (2020) Professional capabilities for medical radiation practitioners, p18, available at [Medical-Radiation-Practice-Board---Professional-capabilities-for-medical-radiation-practice.PDF](#) accessed on 28/11/21
- 2 AHPRA (2020) The National Scheme's Aboriginal and Torres Strait Islander Health and Cultural Safety Strategy 2020-2025, p9, available at [National-Scheme-s-Aboriginal-and-Torres-Strait-Islander-Health-and-Cultural-Safety-Strategy-2020-2025.PDF](#) accessed on 28/11/2021
- 3 Government of Western Australia (2022) Diagnostic Imaging Pathways. <http://www.imagingpathways.health.wa.gov.au/index.php>
- 4 Royal College of Radiologists (2017) iRefer Guidelines: Making the best use of clinical radiology. Version 8.0.1. <https://www.irefer.org.uk>
- 5 Commonwealth of Australia: Pharmaceutical Advisory Council (2005) Guiding Principles to Achieve Continuity in Medication Management), pp 8-10, available at [QUM_5.indd \(health.gov.au\)](#) accessed on 28/11/21
- 6 Australian Commission for Quality and Safety in Health Care: Ensuring correct patient, correct site and correct procedure in Radiology, Nuclear Medicine, Radiation Therapy and Oral Surgery, accessed on 09.01.2022 from [ECPCSCP_FactSheet.pdf \(safetyandquality.gov.au\)](#)
- 7 Australasian Society for Ultrasound in Medicine (ASUM), Standards of Practice <https://www.asum.com.au/standards-of-practice/> accessed on 14/02/2022

Supporting documents

Royal Australian and New Zealand College of Radiologists, (2018). Radiation Oncology Practice Standards.

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