AUSTRALIAN COMMISSION
ON **SAFETY** AND **QUALITY** IN **HEALTH CARE**

Draft

National Safety and Quality Medical Imaging Standards

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Disclaimer

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Acknowledgement

The Australian Commission on Safety and Quality in Health Care acknowledges the Traditional Owners, the Gadigal people of the Eora Nation on whose land the Commission's office is located, and the lands across Australia where those we partner with work. The Commission pays our deep respect to Aboriginal and Torres Strait Islander Elders past, present and emerging

Contents

Acknowledgements

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About the Commission

The Australian Commission on Safety and Quality in Health Care (the Commission) leads and coordinates national improvements in health care safety and quality. The Commission partners with the Australian Government, state and territory governments and the private sector to achieve a safe, high-quality, sustainable health system. It also works closely with patients, carers, clinicians, managers, policymakers and healthcare organisations.

Key functions of the Commission include:

- Developing national safety and quality standards

- Developing clinical care standards to improve the implementation of evidence-based health care

- Coordinating work in specific areas to improve outcomes for patients

- Providing information, publications and resources about safety and quality

The Commission works in four priority areas:

- Safe delivery of health care

- Person-centred care

- Partnering with healthcare professionals

- Quality, value, and outcomes

Introduction

The National Safety and Quality Medical Imaging (NSQMI) Standards aim to protect the public from harm and improve the quality of imaging delivered by describing a nationally consistent framework that imaging providers should apply when providing health care. Where implemented, patients can be confident that their imaging provider is committed to delivering and continuously improving the practice's safety and quality.

Developing the NSQMI Standards involved extensive consultation with consumers, practitioners and providers, professional and peak bodies, and other sector representatives, and a review of the literature, best practice, and evidence-based care.

The NSQMI Standards replace the Diagnostic Imaging Accreditation Scheme Standards.

Implementing the NSQMI Standards is the responsibility of all members of the imaging provider workforce. Imaging providers are accountable for compliance with the standards.

Application of the standards

Medical imaging refers to processes designed primarily to take images of the body's internal anatomy and functions using invisible light. The NSQMI Standards apply to providers who use medical imaging to investigate, diagnose, investigate treat, and monitor patients' conditions.

All health services that use medical imaging can implement the NSQMI Standards, including:

- Chiropractic practices
- Dental practices
- Private imaging practices
- Practices using imaging at the point of care
- Practices using imaging to complete an interventional procedure
- Private and public hospital imaging departments
- Specialist practices performing imaging in private rooms

The standards apply to:

- Medical imaging services under Medicare listed in the [Diagnostic Imaging Services Table](#)
- Medical imaging services under Medicare that do not require accreditation
- Non-Medicare medical imaging services

An imaging service can include any of the following modalities:

- Computed tomography (CT)
  - Cone beam computed tomography
- Dual-energy x-ray absorptiometry (DEXA)
- Fluoroscopy
  - Angiography
- Magnetic resonance imaging (MRI)
- Mammography
- Orthopantomography
- Radiography (x-ray)
- Positron emission tomography (PET)
- Single photon emission computed tomography (SPECT) (nuclear medicine)
- Ultrasound

Overview of the standards

The NSQMI Standards are:

1. Clinical Governance

Clinical governance refers to the structures, relationships, roles and responsibilities established by an imaging provider to ensure good clinical outcomes.

The community can be confident that systems are in place to deliver safe, high-quality, appropriate health care and continuously improve services.

2. Partnering with Consumers – delivering person-centred care

Partnering with Consumers – delivering person-centred care recognises the importance of working with patients and consumers in planning and delivering their health care and providing clear communication to minimise risks of harm.

It describes the systems and strategies to create a person-centred imaging practice.

The Clinical Governance and the Partnering with Consumers – delivering person-centred care Standard set the overarching requirements, or clinical governance framework, for effectively implementing the third and fourth standards: Clinical and Technical Safety.

3. Clinical Safety

Clinical Safety describes the systems and processes for minimising clinical risks and ensuring patients receive appropriate, safe, high-quality care.

4. Technical Safety

Technical Safety describes the systems and processes for ensuring a safe environment and appropriate use of imaging technology.

Structure of the standard

Each standard contains the following:

- A standard statement

- A consumer outcome statement

- A statement of intent

- Explanatory notes on the standard's context

- Criteria that describe the key areas covered by the standard

Each criterion contains the following:

- A consumer outcome statement

- Actions that describe what is required to meet each criterion

- Guidance for each action

Guidance to support implementation

Each action contains guidance to assist the imaging provider with implementing the NSQMI Standards. The guidance includes:

- Reflective questions focused on current practice

- Suggested strategies that imaging providers can use to ensure they meet the requirements of the standards or implement change. The strategies are **not** a checklist. Imaging providers can apply strategies relevant to the imaging practices' service context and risk or choose other strategies that better suit the context.

- Examples of evidence that imaging providers can submit at accreditation assessments. The structure and governance of image practices vary significantly, so the examples of evidence **will not be** relevant to all practices. The evidence is a **guide only**, and imaging providers can use other forms of evidence that are appropriate to their practice. Evidence, such as documents, data, and reports, should come from delivering patient care and **not be generated** separately for accreditation.

- Useful resources, including government and professional group materials, to support implementation.

Not all actions in the NSQMI Standards will apply to all imaging practices. Imaging providers must consider their service context and modalities. Indicative information on "not applicable actions" is in **Appendix 1**. Providers can apply to have actions deemed not applicable, and the accrediting agency will confirm the "not applicable status" before an assessment commences.

The structure and format of the NSQMI Standards align with other national safety and quality standards that some imaging providers have already implemented. Where an imaging practice is accredited to another set of national safety and quality standards, the Commission will map the actions to assess only those unique to the NSQMI Standards. These actions will form the Medical Imaging (MI) Module. For example, accreditation to the National Safety and Quality Health Service (NSQHS) Standards and the MI Module is equivalent to being assessed to the NSQHS and the NSQMI Standards.

For further information and access to supporting resources on the NSQMI Standards, visit the Commission's website.

Terminology

The Commission adopted the following terminology in the NSQMI Standards.

'Patient' or 'consumer'

Patient refers to a person or group of people receiving imaging services. The term 'consumer' refers to a person who has used or may use an imaging practice, a consumer representative or an advocate. In addition, the term 'patient' encompasses all other relevant terms the imaging sector may use, including 'client', 'person', and 'people'.

'Imaging practitioner'

The NSQMI Standards use the term 'imaging practitioner' to describe trained and qualified individuals who perform imaging services, interpret images or support the delivery of imaging services. The term practitioner encompasses all other relevant terms that the imaging sector may use, including health practitioners, clinicians or profession-specific descriptions, for example, radiologist, radiographer, sonographer, nuclear medicine technologist or medical physicist.

'Imaging provider'

The NSQMI Standards use the term 'imaging provider' to describe the organisation, group of organisations, facility or mobile service providers that govern and manage the provision of imaging services. Imaging providers range from owner-operated providers, where a single practitioner is also responsible for administrative and management operations, to complex organisations comprising many practitioners, a supporting workforce, management and an overarching governing body.

The term "imaging provider" can be called "imaging practice" by the sector, and these terms are interchangeable.

'Governing body'

A board, chief executive officer, organisation owner, partnership or other highest level of governance (individual or group of individuals) that has ultimate responsibility for strategic and operational decisions affecting the safety and quality of the imaging practice.

'Healthcare' vs. 'health care' vs. 'care'

The Commission uses the word 'healthcare' when referring to an adjective (for example, the 'healthcare system') and the words 'health care' when referring to a noun (for example, 'the state of health care in Australia').

Where the word 'care' is not preceded by a qualifying word (for example, episode of care, comprehensive care), this encompasses broader elements of care (for example, personal or social care).

'Referrer and Referral'

A referrer is a healthcare practitioner who writes to another practitioner asking them to consult on a patient by investigating, diagnosing, or treating them. The health practitioner receiving the referral then determines the course of action, which may include medical imaging.

A referral is the written communication between the practitioners. It explains the reasons for referring the patient and includes the patient's symptoms, conditions, and medications.

The practitioner who receives the referral is responsible for selecting the imaging service, seeking consent and managing the patient.

'Requester and Request'

A requester is a healthcare practitioner who writes to an imaging provider to request that a patient receive specific imaging services. The requester selects the imaging modality.

The written communication is called a request; most requests are forms. A request identifies the imaging service and clinical details. The requester is responsible for managing the patient.

'Systems'

The NSQMI Standards rely on imaging providers to establish safety and quality systems. A system includes resources, policies, processes, and procedures that are organised, integrated, regulated, and delivered to accomplish a stated goal. Safety and quality systems will vary depending on the size of the imaging provider and the associated service risks.

1. Clinical Governance Standard

Leaders in an imaging practice are responsible for continuously measuring and improving the safety and quality of patient care services and ensuring the service improvements are evidence-based, person-centred, safe, appropriate and effective.

Consumer Outcome

Patients are confident that the imaging practice is organised, efficient, and effective and that they will receive safe, appropriate, high-quality person-centred health care.

Intention of this standard

To implement a clinical governance framework that ensures patients receive safe, high-quality and appropriate person-centred health care.

Explanatory notes

Clinical governance is the relationships and responsibilities established by an imaging provider between regulators and funders, managers, owners and governing bodies (where relevant), healthcare providers, the workforce, patients, consumers and other stakeholders to ensure optimal clinical outcomes.

Governing bodies or owners are ultimately responsible for ensuring the imaging practice is well run and delivers safe, high-quality person-centred health care. They must ensure that the governance system operates effectively, and that effective monitoring systems focus on continuous quality improvement.

Criteria

1. Governance

The imaging provider establishes and uses clinical governance systems to improve the safety, quality and appropriateness of patient health care.

Consumer outcome

The safety, quality and appropriateness of the patient care provided is a priority for the imaging practice's leadership, clinicians and workforce.

Item		Action
Clinical governance leadership and culture	1.01	Clinical Governance, leadership and culture The governing body: a. Establishes and maintains a clinical governance framework b. Provides leadership to develop a culture of safety, continuous quality improvement and clinically appropriate imaging service delivery c. Sets the priorities and strategic directions for safe, high-quality and appropriate person-centred imaging services and communicates these to the workforce d. Provides leadership to support partnerships with patients, carers, consumers, requesters and referrers e. Monitors the imaging practice's safety, quality and performance and directs action to improve performance and outcomes
Business decision-making	1.02	The imaging provider: a. Prioritises patient safety, quality and imaging appropriateness in its business decisions

Item	Action	
		b. Applies ethical principles to its business decision-making about the design, development and delivery of services
Subcontracted services	1.03	The imaging provider subcontracting imaging services ensures the subcontractor complies with: a. Commonwealth, state and territory legislation and regulations b. The requirements of these standards relevant to the services they are providing

2. Patient safety and quality systems

Safety and quality systems are integrated with governance processes to enable the imaging provider to actively manage and improve the safety, quality and appropriateness of health care for patients.

Consumer outcome

Patients attend imaging practices that have safety and quality systems that support and improve imaging services, so patients receive well-organised, safe, high-quality and appropriate person-centred imaging services. The imaging provider seeks, hears and addresses patient feedback.

Item		Action
Risk management	1.04	The imaging provider: a. Supports the workforce to identify, prioritise, mitigate and manage safety and quality risks b. Routinely monitors, documents and reports on safety and quality risks using a risk management approach c. Plans for and manages internal and external emergencies and disasters
Policies and procedures	1.05	The imaging provider: a. Establishes and maintains policies, procedures and protocols for its imaging practice b. Ensures policies, procedures and protocols are readily available to the workforce c. Monitors and improves adherence to policies, procedures and protocols d. Ensure compliance with safety and quality legislation, regulation and jurisdictional requirements

Item		Action

Quality improvement, measurement, and performance	1.06	The imaging provider has quality improvement processes that:
		
		  a. Identify and apply safety and quality measures
		
		  b. Monitor performance and outcomes
		
		  c. Implement safety and quality improvement activities
		
		  d. Provide the workforce and governing body with timely and accessible information on safety and quality performance

Incident management	1.07	The imaging provider has an incident management system that:
		
		  a. Supports the workforce to recognise and report incidents
		
		  b. Facilitates patients, carers, families, requesters and referrers to communicate concerns and report incidents
		
		  c. Involves the workforce in the review of incidents
		
		  d. Provides timely feedback on the analysis of incidents to the patients, workforce and governing body
		
		  e. Uses the information from the analysis of incidents to improve safety and quality
		
		  f. Regularly reviews and acts to improve the effectiveness of the incident management and investigation systems

Open disclosure	1.08	The imaging provider uses the Australian Open Disclosure Framework when there is an adverse patient event.

Item		Action
Feedback and complaints management	1.09	The imaging provider has processes to: a. Seek feedback from patients and their carers, requesters, referrers and the workforce about the imaging practice b. Report on feedback and complaints from patients and their carers, requesters, referrers and other service providers to the executive and the governing body c. Act on feedback and address complaints in a timely way d. Provide patients and their carers with contact details to the appropriate healthcare complaints authority e. Use the analysis from feedback and complaints to improve the safety, quality and appropriateness of its imaging services
Information security	1.10	The imaging provider has information security management systems that comply with the legislation and uses a risk-based approach to protect information confidentiality, integrity and availability from unauthorised user access, data modification and removal.

Item		Action
Healthcare records	1.11	The imaging provider has a healthcare record system that:
		a. Complies with jurisdictional legislation, including privacy, security and retention regulations
		b. Establishes and manages the creation, identification, collection, correction, storage, protection and disposal of healthcare records
		c. Captures requests, referrals, details of the imaging practitioners who performed and reported the imaging service, examination findings, all diagnostic quality images and reports
		d. Makes the healthcare record, images and reports available to imaging practitioners
		e. Supports audits of healthcare records
		f. Enables retrieval and transmission of patient information, images and reports
		g. Provides requesters, other healthcare practitioners and patients with healthcare records, images and reports when requested
My Health Record	1.12	The imaging provider contributes to My Health Record and has processes to:
		a. Comply with legislative requirements
		b. Use national healthcare identifiers for patients and practitioners
		c. Use standard national terminologies
		d. Support the workforce to use My Health Record
		e. Ensure the accuracy and completeness of the information uploaded

3. Clinical Performance and effectiveness

The workforce has the right qualifications, knowledge and skills to provide patients with safe, high-quality, person-centred health care.

Consumer outcome

Patients receive imaging services from competent and caring practitioners in a timely way.

Item	Action	
Scope of clinical practice	1.13	The imaging provider has processes that ensure each imaging practitioner has the qualifications, knowledge and skills required to perform their role by: a. Setting the scope of clinical practice and reviewing an imaging practitioner's registration, licenses, and recency of practice for modalities and imaging services b. Defining their safety and quality roles, responsibilities and accountabilities and supporting them to fulfill these roles c. Monitoring to ensure imaging practitioners are operating within their designated scope of clinical practice d. Reviewing imaging practitioners' scope of clinical practice when a modality, imaging service, or technology is introduced or substantially altered
Safety and quality training	1.14	The imaging provider: a) Supports interprofessional collaboration b) Provides its workforce with orientation to and training in their safety and quality roles on commencement, when safety and quality responsibilities change and when introducing new imaging services, technology or equipment c) Provides access to training to meet its requirements arising from these standards d) Monitors the workforce participation in training

Item	Action	
Clinical supervision	1.15	The imaging provider makes supervision available that: a. Ensures supervised imaging practitioners can safely fulfil their designated roles b. Ensures access to after-hours advice, when required. c. Is delivered by qualified imaging practitioners who have time to supervise effectively
Performance management	1.16	The imaging provider has reliable processes to: a. Regularly engage the workforce in a review of their performance b. Identify the training, development and supervision needs for members of the workforce
Evidence-based care	1.17	The imaging provider: a. Provides its imaging practitioners with ready access to current evidence-based guidelines, resources, and clinical care standards a. Supports its imaging practitioners to use evidence-based guidelines and practices relevant to their clinical practice

4. Safe environment for the delivery of care

The delivery of imaging services occurs in an environment that enables safe and high-quality health care for patients.

Consumer outcome

Patients are safe and comfortable when accessing imaging services.

Item	Action	
Safe environment	1.18	The imaging provider maximises the safety and quality of imaging services by: a. Ensuring the location, design, functions and maintenance of the facilities and equipment support safe care b. Providing access to an environment, facilities, equipment and devices that are fit for purpose, well-maintained and meet the needs of patients, including those with a disability and from diverse backgrounds c. Ensuring patients' privacy, dignity and security when providing imaging services
People with diverse care needs	1.19	The imaging provider provides a culturally safe environment, manages risks and plans imaging services when they provide services to: a. Aboriginal and Torres Strait Islander people b. People at increased risk because of their diverse care needs or background c. People with disabilities d. Children

2. Partnering with Consumers Standard – Delivering person-centred care

Imaging providers develop, implement and maintain systems to deliver person-centred care by partnering with patients and consumers in their health care.

Consumer Outcome

Patients are partners in their health care, and imaging providers deliver person centred care and value patient and consumer opinions in delivering imaging services.

Intention of this standard

The Partnering with Consumers – delivering person-centred care Standard recognises the importance of working with patients and consumers in planning and delivering their health care and providing clear communication to minimise risks of harm. This standard and the Clinical Governance Standard form a comprehensive clinical governance framework.

Explanatory notes

The evidence shows that partnering with consumers in person-centred care is integral to improving patient outcomes and benefits consumers, healthcare services and the health system. Patient partnerships are central to person-centred care, which is respectful of and responsive to the individual patient's preferences, needs and values.

Effective partnerships, a positive patient experience, high-quality health care and improved safety are linked. Partnerships between imaging providers and consumers involve incorporating consumers' values and views into the imaging practice's planning, design, monitoring and evaluation.

The processes to partner with patients and consumers will vary according to the type and size of imaging services delivered.

The imaging provider needs to monitor its processes, review its findings, and refine its practices to improve the effectiveness of patient and consumer partnerships.

Standard 2 Criteria

1. Person-centred care

Person-centred care and partnering with patients underpin the delivery of care. Patients are partners in their health care to the extent that they choose.

Consumer outcome

Patients and their carers have a positive imaging service experience and are partners in their health care.

Item		Action	
Healthcare rights	2.01	The imaging provider:	
			a. Uses a Charter of Rights consistent with the Australian Charter of Healthcare Rights
			b. Supports its workforce to apply the principles of the Charter of Rights
			c. Makes the Charter of Rights easily accessible for patients, carers, families and consumers
Informed consent	2.02	The imaging provider:	
			a. Ensures its informed consent processes comply with legislation and guidelines
			b. Ensures financial consent is transparent and completed before the imaging service occurs
			c. Has processes to identify the patient's capacity to make decisions about their health care and uses a substitute decision-maker if a patient cannot make decisions for themselves
			d. Has mechanisms for patients and their carers to consent to collecting, storing and distributing personal data and records for purposes other than direct care
Shared decision making	2.03	The imaging provider supports imaging practitioners to provide patient-centred care and actively involve patients in their own care.	

2. Health literacy

Imaging providers communicate with consumers in a way that supports person-centred care and effective partnerships.

Consumer outcome

Patients are given the information they need in a way they can understand to support them in making decisions about their imaging service.

Description	Action	Requirements
Communication that supports person-centred care	2.04	The imaging provider supports the workforce to tailor their communication with patients and their carers to meet the patient's needs and preferences
Accessing imaging practice and service information	2.05	The imaging provider makes information available to patients regarding: a. The modalities and imaging services provided b. The location(s), opening hours, booking appointments and access to the imaging practice c. Restrictions to patient access d. Their estimated service costs and out-of-pocket costs e. Their imaging service, preparation for the imaging service before attending the practice, post imaging follow-up and aftercare f. Access to their images and report

3. Clinical Safety Standard

Imaging providers implement systems and processes to maximise safe, high-quality care and minimise safety risks from imaging services.

Consumer Outcome

The imaging practice's patients receive safe high-quality care.

Intention of this standard

This standard aims to identify and mitigate common clinical safety risks in imaging services.

Explanatory notes

The Clinical Safety Standard provides a framework for imaging providers to address and mitigate risks to safety and quality commonly encountered in imaging services.

This standard requires the workforce to use the safety and quality systems and processes developed from implementing the Clinical Governance and Partnering with Consumer Standards to implement policies and procedures, manage risks, identify training requirements and apply continuous quality improvement to clinical safety. Thereby ensuring a consistent approach to managing safety and quality in the imaging service.

As the National Safety and Quality Medical Imaging Standards apply to a wide range of imaging providers, some actions may not be applicable in some service contexts. Appendix 1 provides more information on "not applicable" actions.

Criteria

1. Preventing and controlling infections

The imaging provider has a clean and hygienic imaging practice, identifies and manages patients with infection or infection risk factors and uses evidence-based processes to prevent and control infections.

Consumer outcome

The risk of patients getting or spreading infection is assessed and minimised.

Explanatory notes

Each year, many infections are associated with the provision of health care and affect many patients and, in some cases, consumers and workforce members. These infections:

- Cause considerable harm and may increase the risk of morbidity and death

- Increase the use of healthcare services

- Place greater demands on the workforce

Infection prevention and control within imaging services aims to minimise the risk of transmission of infections and the development of resistant organisms.

Item	Action	
Clean and hygienic environment	3.01	The imaging provider has processes to: a. Maintain a clean, safe and hygienic environment consistent with the current edition of *Guidelines for the Prevention and Control of Infection in Healthcare* and state or territory requirements b. Evaluate and respond to infection risks c. Clean and disinfect using products listed on the *Australian Register of Therapeutic Goods* consistent

Item	Action	
		with the manufacturers' instructions for use and at recommended frequencies d. Provide access to training on cleaning processes for routine and outbreak situations, and novel infections
Standard and transmission-based infection prevention and control precautions	3.02	The imaging provider has infection prevention and control processes that: a. Apply standard and transmission-based precautions consistent with the current edition of the *Australian Guidelines for the Prevention and Control of Infection in Healthcare* b. Comply with jurisdictional laws, requirements, and policies, including work health and safety laws c. Are consistent with the National Hand Hygiene Initiative (NHHI) d. Support the workforce and patients by promoting and practising hand and respiratory hygiene and cough etiquette e. Use and manage invasive medical devices consistently with the current edition of the *Australian Guidelines for the Prevention and Control of Infection in Healthcare*
Workforce infection and immunisation	3.03	The imaging provider has infection prevention and control processes for managing transmissible infections in the workforce that: a. Are consistent with the state or territory work health and safety regulations and the *Australian Guidelines for the Prevention and Control of Infection in Healthcare* b. Include a workforce immunisation program consistent with the *Australian Immunisation Handbook* and jurisdictional requirements for vaccine-preventable diseases c. Align with state and territory public health requirements for workforce screening and exclusion periods d. Promote the non-attendance or remote attendance of the workforce and in situations where it is not

Item	Action	
		possible, minimise transmission risks
		e. Plan for and manage ongoing imaging service provision during outbreaks or events where there is an increased risk of infection transmission
Aseptic technique	3.04	The imaging provider has aseptic technique processes to:
		a. Identify imaging services where the aseptic technique applies
		b. Monitor compliance with the aseptic technique policies
		c. Provide training to address gaps in aseptic technique competencies
Reprocessing of reusable equipment and devices	3.05	The imaging provider using reusable equipment and devices has processes:
		a. For reprocessing that is consistent with national or international standards and manufacturers' guidelines
		b. To identify and trace the patient, imaging service and reusable critical and semi-critical equipment and devices used
		c. To plan and manage reprocessing requirements and additional controls for emerging infections

2. Medication, contrast media and radiopharmaceutical safety

Imaging providers have processes and equipment to support the safe, appropriate and effective use of medicines, contrast media and radiopharmaceuticals to reduce the risks of adverse events and improve the safety and quality of their use.

Consumer outcome

The risks to patients from medicines, contrast media and radiopharmaceuticals are assessed and minimised. Patients understand the risks and are supported to make decisions about their use. Processes are in place to deal with adverse outcomes.

Explanatory notes

Imaging providers commonly use medicines, contrast media and radiopharmaceuticals; they can contribute to improved diagnosis and treatment. However, medicines, contrast media, and radiopharmaceuticals are associated with adverse events, and they should be prescribed, stored, handled, and administered appropriately to prevent avoidable errors and patient harm. Adverse events, both avoidable and unavoidable can impact health outcomes for consumers and healthcare costs. Standardising and systemising processes can reduce medicine, contrast media and radiopharmaceutical incidents.

Item		Action

Safe management and administration of medicines, contrast media and radiopharmaceuticals	3.06	The imaging provider administering medicines, contrast media, or radiopharmaceuticals has processes to ensure:
		
		 a. Compliance with manufacturer's instructions, jurisdictional legislation and requirements for the prescription, safe and secure storage, handling, supply, administration and disposal of medicines, contrast media, or radiopharmaceuticals
		
		 b. Imaging practitioners administer blood and blood products with radiopharmaceuticals in accordance with evidence-based guidelines.
		
		 c. Imaging practitioners:
		
		    I. Provide patients with information on medicines, contrast media or radiopharmaceuticals and their risks
		
		    II. Document a medication history on presentation and check for contraindications to medicines, contrast media or radiopharmaceuticals

Item	Action	
		III. Use the information to minimise risks in planning an imaging service and providing patient aftercare
		IV. Are competent to administer medicine, contrast media or radiopharmaceuticals, actively prepare and monitor for medication effects, and respond to, and escalate care to severe reactions, including anaphylaxis
		d. Adverse events are reported to the Therapeutic Goods Administration (TGA) and other regulators
Peripheral intravenous catheters	3.07	The imaging provider administering medicines, contrast media or radiopharmaceuticals has processes to ensure imaging practitioners: a. Are competent to insert, maintain and remove peripheral intravenous catheters b. Provide information to patients on the risks of extravasation c. Identify, mitigate risks of, respond to and manage extravasation d. Document extravasation in the patient healthcare record and inform requesters
Sedation and anaesthesia	3.08	The imaging provider sedating or anaesthetising patients has processes to: a. Ensure only qualified healthcare practitioners sedate and anaesthetise patients b. Ensure facilities and equipment are available to treat, monitor and resuscitate patients c. Implement current evidence-base guidelines for sedation and anaesthetics relevant to their service

3. Recognising and responding to acute deterioration

Imaging providers have systems to recognise and respond to a patient's acute health deterioration and appropriately escalate health care.

Consumer outcome

If a patient's health deteriorates, they receive the health care they need promptly.

Explanatory Notes

Observable physiological and clinical abnormalities often precede serious adverse events. Early identification of deterioration may improve outcomes and lessen the intervention required to stabilise patients whose condition deteriorates.

Item	Action	
Recognising acute deterioration or distress and escalating care	3.10	The imaging provider has processes to support imaging practitioners to: a. Promptly respond to a patient whose physical, mental or cognitive state acutely deteriorates b. Maintain the skills required to manage episodes of acute deterioration c. Have ready access to equipment and medicines to support life until emergency assistance arrives d. Notify a patient's requesting or referring healthcare providers, other healthcare providers and carers or family when a patient's health care is escalated

4. Communicating for safety

Communicating for safety aims to ensure timely, purpose-driven, effective communication and documentation to support continuous, coordinated, and safe patient care.

Consumer outcome

Imaging and healthcare providers communicate to ensure their patients receive the required healthcare.

Explanatory notes

Communication is a key safety and quality issue in health care. The actions relating to communicating for safety recognise the importance of effective communication and its role in supporting continuous, coordinated and safe patient care.

Communication is inherent to patient care, and informal communications will occur throughout healthcare delivery. These actions do not apply to all communications. Instead, the intention is to ensure that systems and processes are in place at crucial times when effective communication is critical to patient safety, for example, communicating urgent results.

Item		Action
Communication to support referrers and requesters	3.11	The imaging provider supports and collaborates with requesters, referrers and a patient's other healthcare providers by: a. Using best practice, structured communication processes at transitions of care b. Communicating information that is timely, current, comprehensive and accurate c. Advising requesters about modality and imaging service options, imaging service preparation and aftercare, risks and patient management d. Providing requesters with the information requirements for imaging requests and the appropriateness of imaging services
Request assessment	3.12	The imaging provider has processes to assess imaging service requests that: a. Ensure the request complies with the *Health Insurance Act 1973* legislation

Item	Action
	b. Ensure the request is from an authorised requester
	c. Ensure there is an identifiable clinical need
	d. Determine the clinical objective and appropriateness of the request
	e. Outline how to manage a request with insufficient or incorrect information

5. Delivering quality imaging services

The imaging provider has explicit processes to identify the patient, inform the patient about the nature of the imaging service, perform the correct imaging service, acquire optimal quality images and interpret them correctly, and effectively communicate the results.

Consumer outcome

Patients understand the preparations and what is involved in their imaging service and have the correct imaging service performed. Patients imaging services result in high-quality images that are interpreted correctly and promptly reported in clear, actionable reports.

Explanatory notes

Safety and quality gaps are failures to provide adequate health care or to achieve expected outcomes. The actions relating to delivering quality imaging services aim to address these gaps.

Item		Action
Patient identification and imaging service matching	3.13	The imaging provider: a. Defines and approves at least three unique patient identifiers b. Uses the approved identifiers for registration, during imaging services and when providing images and reports c. Correctly matches the patient to their imaging service d. Correctly matches the anatomical site and side of the imaging service e. Labels all images and reports so they can be traced to the patient f. Documents and takes prompt corrective action when a patient identification, imaging service, site or side discrepancy is identified
Planning an imaging service	3.14	The imaging provider has processes for planning an imaging service which includes: a. Observing a patient on presentation, during and after the imaging service b. Taking a history, and where required, a clinical examination

Item	Action	
		c. Assessing the patient's health status, medical information and risk of harm
		d. Reviewing previous images and reports, where available
		e. Considering the clinical benefits and potential for harm of the imaging service and the use of alternative imaging services
		f. Documenting the assessment outcomes in the healthcare record
Minimising patient harm	3.15	Imaging providers delivering imaging services to patients at risk of harm have processes consistent with best-practice guidelines for: a. Fall prevention b. Patient transfers c. Patient positioning
Changing the imaging service	3.16	The imaging provider complies with legislation regarding substitution of and additional imaging services and has processes to: a. Remove, substitute, or add an imaging service b. Contact the requester before removing, substituting or adding an imaging service c. Seek informed consent from patients before substituting or adding an imaging service d. Record the imaging service changes, the reasons and patient consent in the healthcare record
Image interpretation and reporting	3.17	The imaging provider has processes to ensure imaging practitioners reporting on images: a. Interpret and report images in an environment with optimal viewing conditions using monitors and display software that meet evidence-based guidelines b. Have access to the patient's clinical history, diagnostic quality images, image practitioner findings, and

Item	Action	
		where available prior images and reports
		c. Are integrated into the image quality, interpretation and report quality assurance processes
Communicating results	3.18	The imaging provider has processes to:
		a. Promptly provide structured, accurate, clear, concise, and verified written reports to requesters, referrers, patients and other healthcare providers
		b. Document the reporting imaging practitioner's professional status on the report
		c. Provide lossless compressed images and image data to the requester and other healthcare providers in a digital format that enables subsequent analysis and secondary diagnosis
		d. Ensure an imaging practitioner is available to explain the results and provide follow-up advice to requesters and other healthcare providers
		e. Inform patients how and when to access their images and results
		f. Ensure the availability and readability of images and reports for the required retention period
Reporting critical results	3.19	The imaging provider has processes that:
		a. Establish and maintain definitions of 'critical', 'urgent' and 'significant unexpected' imaging findings
		b. Require imaging practitioners completing imaging services to promptly communicate 'critical', 'urgent' and 'significant unexpected' findings to imaging practitioners who interpret and report images
		c. Promptly alert requesters of 'critical', 'urgent' and 'significant unexpected' imaging findings and seek an acknowledgment of the report. Inform patients or their carers of 'critical', 'urgent' or 'significant unexpected' findings and escalate care when there is no acknowledgement of the report from the requestor or when the situation warrants urgent action

Item	Action	

Interventional radiology	3.20	The imaging provider providing interventional radiology services ensures:
		
		a. Patients receive documented coordinated care which includes:
		
		   i. Pre-treatment assessments that adhere to best practice guidelines and evidence
		
		   ii. Treatment plans that are discussed with patients and address patients' needs
		
		   iii. Post-procedure care
		
		   iv. Providing patient outcomes to their referrers or requesters and copied recipients
		
		b. Imaging practitioners promptly identify and manage complications of treatment and inform patients
		
		c. Imaging practitioners participate in peer review processes

4. Technical Safety Standard

Imaging providers implement systems and processes to maximise the imaging service's appropriateness, effectiveness, safety and quality.

Consumer Outcome

Patient imaging services use safe and well-maintained imaging equipment that provides diagnostic quality images.

Intention of this standard

This standard aims to ensure the equipment used for an imaging service is safe for imaging a patient and delivers diagnostic quality images.

Explanatory notes

The Technical Safety Standard provides a framework for imaging providers to address and mitigate safety and quality risks associated with imaging equipment.

This standard requires the workforce to use the safety and quality systems and processes outlined in the Clinical Governance Standard. The workforce will implement policies and procedures, manage risks, identify training requirements and apply continuous quality improvement to technical safety to ensure a consistent approach to managing safety and quality in the imaging practice.

As the National Safety and Quality Medical Imaging Standards apply to a wide range of imaging providers, there may be actions that are not applicable in some service contexts. More information on "not applicable" action is available in Appendix 1.

Criteria

1. Imaging equipment effectiveness

Imaging providers ensure that all imaging equipment, devices, and information technology systems are appropriate for use and technical efficiency is maintained.

Consumer outcome

The imaging equipment and devices used for patient imaging services are effective and maintained.

Explanatory notes

The imaging provider has all the equipment required to perform the imaging services and the expertise to effectively use it to manage patients before, during and after their imaging service.

Equipment includes imaging and peripheral equipment, such as mobile equipment, equipment used for injections, sedation, monitoring and anaesthesia, reference phantoms, consumables, computers, clinical review displays, diagnostic workstations and software.

Upon installation and during routine use, the equipment achieves the required performance and complies with the specifications relevant to imaging services.

The imaging practice has an integrated system that manages the images and patient information. The system stores, retrieves, and transmits patient information and images.

Item	Action	
Equipment replacement	4.01	The imaging provider has a replacement program for equipment and devices that: a. Maintains dedicated equipment for the imaging services being performed b. Complies with regulations and best practice guidelines c. Ensures relevant equipment, medical devices and medical imaging decision support software are on the Australian Register of Therapeutic Goods d. Includes acceptance testing, installation and commissioning of imaging equipment e. Involves a multidisciplinary imaging practitioner team in selecting, testing and commissioning of imaging equipment and devices f. Actively manages the risk of aging equipment
Equipment maintenance	4.02	The imaging provider has processes to ensure its equipment and devices are safe, fit for purpose and performing optimally by: a. Maintaining a current and complete equipment inventory b. Conducting manufacturers' recommended services in accordance with the manufacturers' guidelines,

Item		Action
		planned maintenance and repair
		c. Engaging qualified equipment service personnel trained to service imaging equipment and devices
		d. Performance testing equipment after maintenance and repair
		e. Reporting adverse events and side effects to the manufacturer and Therapeutic Goods Administration
Equipment quality assurance	4.03	The imaging provider completes regular internal and external quality assurance of its imaging equipment and devices to ensure:
		a. Compliance with professional and regulatory quality assurance codes and guidance
		b. Routine calibration and evaluation of the operation and performance of imaging equipment and devices are conducted
		c. Diagnostic quality images are produced
		a. Timely corrective action when the equipment and monitors are operating outside the specified tolerance parameters
Magnetic resonance imaging (MRI) safety	4.04	The imaging provider delivering magnetic resonance imaging services has processes to ensure compliance with best practice guidance on MRI safety.

Item	Action	
Medical imaging decision support software	4.05	Imaging practices using medical imaging decision support software and systems to interpret imaging data or determine results have processes to: a. Ensure the software is on the Australian Register of Therapeutic Goods b. Comply with regulations and best practice guidelines c. Procure software that considers the ethical issues, biases and suitability for the patient population where it will be used d. Undertake acceptance testing and commissioning of the software e. Ensure the software's use for image interpretation and results determination is documented and monitored to assess the impact on patient safety f. Train imaging practitioners to use and evaluate the software g. Evaluate the software's performance over time, determine if it is operating within performance expectations and report this to the governing body

2. Imaging optimisation

The imaging provider optimises imaging protocols to balance benefits and risks, provide "as low as reasonably achievable" exposure and produce diagnostic quality images.

Consumer outcome

Patient images are obtained with the minimum exposure to ionising radiation needed to achieve optimum image quality.

Explanatory notes

Standardised imaging protocols support the appropriate use and delivery of high-quality imaging. Standardisation can lead to predictable and consistent delivery of best practices, reducing error and improving patient outcomes.

Item	Action	
Clinical protocols	4.06	The imaging provider has imaging protocols for its imaging services, which:
		a. Describe the imaging service type and process
		b. Align with evidence-based guidelines
		c. Use the minimum exposure required to achieve diagnostic image quality
		d. Specifically address the requirements and risks for children and young people
		e. Outline the authority required to alter an imaging protocol to meet patients' needs

3. Radiation safety

An imaging provider implements and monitors systems that manage the risks associated with ionising radiation.

Consumer statement

Patient exposure to ionising radiation is as low as reasonably achievable (ALARA) while meeting their clinical needs.

Explanatory notes

In an imaging practice, the protection of patients and the workforce is key to the optimal use of ionising radiation, including the protection of pregnant or potentially pregnant persons and children. A patient's exposure to ionising radiation requires the imaging service to be justified and optimised. Hence the radiation dose delivered is equal but does not exceed the radiation dose needed to achieve diagnostic images (ALARA principle). Controlling exposure to ionising radiation reduces the risk of adverse health outcomes.

The Commonwealth, States or Territories manage radiation protection and exposure using legislation and regulations and reference the Australian Radiation Protection and Nuclear Safety Agency's (ARPANSA) radiation codes and safety guidelines for planned medical exposures.

Item	Action	
Radiation legislation and regulation	4.07	The imaging provider has processes to monitor the imaging practice's compliance with: a. State or territory ionising radiation legislation and regulations, and acts when there is non-compliance b. The Australian Radiation Protection and Nuclear Safety Agency's Radiation Protection Series codes of practice
Radiation protection	4.08	The imaging provider: a. Protects patients, carers, the workforce and the community from ionising radiation b. Has processes to inform patients, carers and requesters of the radiation risk of imaging services c. Has processes to identify and protect children, pregnant patients and other patients with increased sensitivities from the effects of ionising radiation
Radiation optimisation	4.09	The imaging provider has processes to: a. Optimise radiation doses administered to patients in line with evidence-based practice b. Routinely audit ionising radiation use, including the radiation doses administered to patients c. Compare annually their administered radiation doses with diagnostic reference levels published by the Australian Radiation Protection and Nuclear Safety Agency

Appendix 1: Not applicable actions

Not all actions within the National Safety and Quality Medical Imaging Standards will apply to every imaging provider. Table 1 outlines the circumstances where it may not be necessary to implement individual actions of the National Safety and Quality Medical Imaging Standards.

Imaging providers implementing the National Safety and Quality Medical Imaging Standards consider their circumstances in determining whether the actions in the table below are not applicable. It is not intended that actions be implemented where they are not essential in the delivery of safe and high-quality care for patients or are beyond the scope of clinical practice of imaging practitioners.

Large imaging providers, with multiple imaging practitioners operating from different locations and delivering different levels of health care, may find that an action is not applicable in an area of service while remaining relevant in other parts of its service. In these cases, the action is implemented in areas of the service where it is relevant but not in an area of the service where the action does not apply.

Table 1: Circumstances where actions are not applicable.

Criterion	Action Number	Circumstances where actions not applicable
Clinical Governance		
Governance	1.01	Not applicable to imaging providers accredited to the NSQHS or NSQPCH Standards
Governance	1.02	Not applicable to imaging providers accredited to the NSQHS Standards
Governance	1.03	Not applicable to imaging providers not subcontracting services
Patient safety and quality systems	1.04 to 1.09 and 1.11	Not applicable to imaging providers accredited to the NSQHS or NSQPCH Standards
Patient safety and quality systems	1.12	Not applicable to imaging providers who are not providing R-type imaging services
Clinical performance and effectiveness	1.13 to 1.14 and 1.16 to 1.17	Not applicable to imaging providers accredited to the NSQHS or NSQPCH Standards
Safe delivery of care	1.18 to 1.19	Not applicable to imaging providers accredited to the

Criterion	Action Number	Circumstances where actions not applicable
environment		NSQHS or NSQPCH Standards

Partnering with Consumers – Delivering person-centred care

Criterion	Action Number	Circumstances where actions not applicable
Person-centred care	2.01 to 2.03	Not applicable to imaging providers accredited to the NSQHS or NSQPCH Standards
Health Literacy	2.04	Not applicable to imaging providers accredited to the NSQHS or NSQPCH Standards

Clinical Safety

Criterion	Action Number	Circumstances where actions not applicable
Infection control	3.01 to 3.03	Not applicable to imaging providers accredited to the NSQHS or NSQPCH Standards
Infection control	3.02e	Not applicable to imaging providers not using invasive medical devices.
Infection control	3.04	Not applicable to imaging providers that do not undertake imaging services requiring aseptic technique
Infection control	3.05	Not applicable to imaging providers not using reusable equipment, instruments and devices.
Medication, contrast media and radiopharmaceutical safety	3.06	Not applicable to imaging providers not using medicine, contrast media or radiopharmaceuticals. Not applicable to imaging providers providing scanning ultrasound only. (Interventional ultrasound excluded)
Medication, contrast media and radiopharmaceutical safety	3.07	Not applicable to imaging providers not using peripheral intravenous catheters. Not applicable to imaging providers providing scanning

Criterion	Action Number	Circumstances where actions not applicable
		ultrasound only. (Interventional ultrasound excluded)
Medication, contrast media and radiopharmaceutical safety	3.08	Not applicable to an imaging provider with accreditation to the NSQHS Standards
		Not applicable to imaging providers that do not sedate or anaesthetise patients.
		Not applicable to imaging providers providing scanning ultrasound only. (Interventional ultrasound excluded)
Recognising and responding to acute deterioration	3.10	Not applicable to an imaging provider with accreditation to the NSQHS or NSQPCH Standards
Communicating for safety	3.11c and d	Not applicable to imaging providers that do not accept requests.
Communicating for safety	3.12	Not applicable to imaging providers that do not accept requests.
Communicating for safety	3.12a	Not applicable to non MBS services
Delivering quality imaging services	3.15a	Not applicable to imaging providers accredited to the NSQHS Standards
Delivering quality imaging services	3.16 and 3.18 to 3.19	Not applicable to imaging providers that do not accept requests.
Delivering quality imaging services	3.20	Not applicable to imaging providers who do not undertake interventional radiology.
Technical Safety		
Imaging equipment	4.04	Not applicable to imaging providers who do not provide

Criterion	Action Number	Circumstances where actions not applicable
effectiveness		MRI services
Imaging equipment effectiveness	4.05	Not applicable to imaging providers not using medical imaging decision support software
Radiation safety	4.07 – 4.09	Not applicable to imaging providers not using ionising radiation

Glossary

Acceptance testing	Acceptance testing is a process to ensure the equipment and its performance meet manufacturer specifications and other defined criteria in the procurement specification.
Action	An action describes what outcome needs to be delivered to meet a criterion. Actions are mandatory unless deemed non-applicable to the imaging provider.
Acute deterioration	Physiological, psychological or cognitive changes that may indicate a worsening of the patient's health status.
Additional imaging service	An imaging service provided after a previous imaging, where the imaging practitioner determines an additional service is necessary based on the results.
Adverse event	An incident that results, or could have resulted, in harm to a patient or consumer. A near miss is a type of adverse event.
Algorithm	A set of rules followed by a computer for calculations and problem-solving.
Anaphylaxis	A severe form of allergic reaction that is potentially life-threatening, especially if not treated immediately. A sudden onset characterises anaphylaxis; however, the clinical presentation is variable.
Angiography	The X-ray imaging of blood vessels using contrast agents injected into the bloodstream through a catheter. The images taken are called angiograms and provide information about blood vessel abnormalities.

Angiography guides procedures to treat abnormal blood vessels. |
Anaesthesia	Anaesthesia is a form of sedation where the patient is unconscious and does not respond to external stimuli. The patient will require breathing assistance.
Artificial intelligence (AI)	AI is an area of computer science focused on creating machines that can perceive, synthesise, and infer information and engage in behaviour that is considered intelligent.
Aseptic technique	Aseptic technique is a set of practices aimed at minimising contamination by preventing microorganisms on hands, surfaces and equipment from being introduced to susceptible sites, thereby protecting the patient from infection during imaging services.
Audit	An audit is a systematic review of care and processes against a predetermined set of criteria.
Australian Charter of Healthcare Rights	Specifies the key rights of patients when seeking or receiving healthcare services.

Australian Open Disclosure Framework	A framework for imaging providers and practitioners to communicate openly with patients when imaging services do not go to plan.
Best practice	When the approach to care is in line with the best available evidence and is used to achieve the best possible patient outcomes, based on the consumer's needs, goals and preferences.
Best-practice guidelines	Are recommended actions developed using the best available evidence. They support imaging providers, imaging practitioners and patient decisions about appropriate imaging in specific clinical practice settings and circumstances.
Capital sensitivity	Refers to the Medicare Benefits Schedule provisions where diagnostic imaging services rendered on equipment that has exceeded its effective life age or maximum extended life age attract no Medicare benefit. Its intended purpose is to ensure patients have access to imaging services by encouraging imaging providers to upgrade and replace equipment as appropriate.
Carer	A person who provides personal care, support and assistance to another individual. The individual needs care because they have a disability, medical condition (including a terminal or chronic illness), mental illness, are frail or aged, or paediatric.

A person is not a carer merely because they are a spouse, de facto partner, parent, child, other relative or guardian, or live with an individual who requires care.

A person is not a carer when paid for, volunteers for an organisation, or provides care as part of a training or education program. |

Clinical governance	The set of relationships and responsibilities established by an imaging provider between regulators and funders, owners and managers and governing bodies (where relevant), healthcare providers, the workforce, patients, consumers and other stakeholders to ensure optimal clinical outcomes. It ensures that: • The community can be confident that there are systems in place to deliver safe and high-quality health care • There is a commitment to improving services continuously • Everyone is accountable to patients and the community for ensuring safe, effective, high-quality health care. This includes imaging providers, other workforce members and managers, owners and governing bodies (where they exist) • Depending on the size of the imaging service, the same individual may carry out multiple roles.
Clinical governance framework	Describes the processes and structures needed to deliver safe, high-quality health care. These include: • Governance, leadership and culture • Patient safety and quality improvement systems • Clinical performance and effectiveness • Safe environment for the delivery of health care • Patient-centred care
Clinical practice	The assessment, diagnosis, treatment and health care delivered to a patient.
Complaint	Is an expression of dissatisfaction made to an organisation by a patient, consumer, or clinician related to its services where a response or resolution is expected. It is a form of feedback.
Computed tomography (CT)	A computerised X-ray imaging machine in which a beam of X-rays quickly rotates around the body, producing signals. The CT machine's computer generates cross-sectional images of the body based on the signals, which contain more detailed information about internal organs than conventional X-rays.
Consumer	A person who has used or may potentially use imaging services or is a carer for a patient using imaging services.
Consumer representative	A consumer who has a specific role in providing advice on behalf of consumers with the overall aim of improving health care.

Contraindication	A condition that indicates a specific medicine or medical treatment could cause patient harm if used.
Contrast media	Are chemical compounds that aid diagnosis in computer tomography, magnetic resonance imaging, ultrasound and fluoroscopy by making organs and bodily fluids opaque.
Criterion	Describe the key areas covered by the standard. Each criterion contains the following: • A consumer outcome statement • Actions that describe what is required to meet each criterion • Guidance for each action
Critical equipment, instruments and devices	Items that confer a high risk for infection if they are contaminated with any microorganism and must be sterile at the time of use. They include any objects that enter sterile tissue or the vascular system because microbial contamination could transmit disease.
Cultural safety	Recognition, protection and continued advancement of the inherent rights, cultures and traditions of Aboriginal and Torres Strait Islander peoples, people with a disability and diverse backgrounds and care needs.
Culture of safety	A product of individual and group values, attitudes, perceptions, competencies and patterns of behaviour that determine the commitment to and the style and proficiency of an organisation's health and safety management. Positive patient safety cultures have strong leadership that drives and prioritises safety as well as: • Shared perceptions of the importance of safety • Constructive communication • Mutual trust • A workforce that is engaged and always aware that things can go wrong • Acknowledgement at all levels that mistakes occur

Diagnostic reference level	An indicative measure used to assess whether, in routine conditions, the amount of radiation used is high or low for a specified procedure. A DRL is usually set at the 75th percentile of an audited set of radiation exposures.
	A diagnostic reference level (DRL) is not a regulatory limit but rather a benchmark that, when exceeded, triggers a review.
	Conducting an imaging practice dose audit and comparing the results to a DRL provides an imaging provider with a simple method of benchmarking facility reference levels against population-based data to identify situations where the imaging practice delivers low or high patient doses.
	Australian DRLs are located on the ARPANSA Website.
Disability	The *Disability Discrimination Act 1992* (Cth) defines disability concerning a person to mean:
	• Total or partial loss of the person's bodily or mental functions
	• Total or partial loss of a part of the body
	• The presence in the body of organisms causing disease or illness
	• The malfunction, malformation or disfigurement of a part of the person's body
	• A disorder or malfunction that results in the person learning differently from a person without the disorder or malfunction
	• A disorder, illness or disease that affects a person's thought processes, perception of reality, emotions or judgement that results in disturbed behaviour
	The World Health Organization International classification of functioning disability and health recognises that disability is multidimensional and is the product of an interaction between attributes of an individual and features of the person's physical, social and attitudinal environment. It broadens the perspective of disability and allows for the examination of medical, individual, social and environmental influences on functioning and disability.
Diverse background	The varying social, economic and geographic circumstances of consumers who use, or may use, the imaging services of an imaging provider, and their cultural backgrounds, disability status, religions, beliefs and practices, spoken languages, sexual orientation, gender identity and gender expression, and sex characteristics.

Dose	A generic term that may mean absorbed dose, equivalent dose, effective dose or organ dose, as indicated by the context.
Dual-energy X-ray absorptiometry (DEXA)	DEXA is a medical imaging modality used to measure bone density. Two X-ray beams with different energy levels are aimed at the bones and the soft tissue absorbency is subtracted to determine the bone mineral density.
Environment	The context or surroundings in which health care is delivered. The environment can also include other patients, consumers, visitors and the workforce.
Equipment	Equipment includes imaging and peripheral equipment, including mobile equipment, equipment used for injections, sedation, monitoring and anaesthesia, reference phantoms, consumables, monitors, computers, clinical review displays, and mobile and diagnostic workstations.
Evidence-based care	Is an approach to care that integrates the best available research evidence with clinical expertise and patient values. It involves translating evidence into practice and ensuring that health practitioners and patients know and use research evidence to inform their health and healthcare decision-making.
Exposure	The state or condition of being subject to irradiation.
External quality assurance	It is the objective assessment of imaging equipment and imaging results by an external agency. It can include comparisons with other imaging services.
Extravasation	When a medicine, contrast medium, or radiopharmaceutical administered by a peripheral intravenous catheter leaks out of the veins and into the surrounding tissue. There is a potential to cause tissue damage if a vesicant drug leaks.
Facility reference level	Indicates the typical patient dose and is the quantity compared to the DRL. It is the median dose delivered to a sample of patients undergoing a routine diagnostic imaging protocol at a given imaging practice. In most cases, the dose is dependent on the type and specific piece of equipment used.
Feedback	Feedback is information about a patient, consumer or clinician's reaction to an imaging service. It enables an imaging practice to discover areas of satisfaction and dissatisfaction, relative priorities of quality, identify patient, consumer, and clinician needs, and determine opportunities for improvement.

An imaging practice continually seeks and monitors feedback. |

Fluoroscopy	Fluoroscopy is a medical imaging modality that uses a pulsed beam of X-rays to create real-time dynamic images of a body part, and its motion. It is most often used to guide vascular and other interventional procedures.
Governance	The set of relationships and responsibilities a medical imaging practice establishes between its management, workforce and stakeholders (including patients and consumers). Effective governance provides a clear statement of individual accountabilities within the organisation to help align the different participant's roles, interests and actions to achieve the organisation's objectives. Governance structures are tailored to the size and complexity of an organisation.
Governing body	A board, chief executive officer, organisation owner, partnership or other highest level of governance (individual or group of individuals) that has ultimate responsibility for strategic and operational decisions affecting safety and quality.
Hand hygiene	A general term applied to processes aiming to reduce the number of microorganisms on the hands. It includes the application of a waterless antimicrobial agent (e.g., alcohol-based hand rub) to the surface of the hands and the use of soap/solution (plain or antimicrobial) and water (if hands are visibly soiled) followed by patting dry with single-use towels.
Harm	Something that impairs or adversely affects a patient physically or mentally.
Health care	The prevention, diagnosis, treatment, and management of illness and injury, and the preservation of mental and physical well-being through the services offered by healthcare providers.

Healthcare identifiers	Are unique numbers assigned and used in health-related information to identify the patient, the treating professional and the organisation where healthcare is provided to reduce potential errors with healthcare related information and communication. In Australia, the Healthcare Identifiers (HI) Service is a national system that uniquely identifies healthcare providers, healthcare organisations and individuals receiving healthcare.

These include:

- Individual Healthcare Identifier (IHI) – identifies a patient (individual) receiving healthcare. An IHI uniquely identifies individuals who receive healthcare, including Australian citizens, permanent residents and visitors to Australia

- Healthcare Provider Identifier – Individual (HPI-I) – identifies an individual healthcare provider who provides healthcare, such as general practitioners, allied health professionals, specialists, nurses, dentists and pharmacists, among others

- Healthcare Provider Identifier – Organisation (HPI-O) – identifies the healthcare provider organisation where healthcare is provided, such as hospitals, medical practices, pathology or radiology laboratories and pharmacies

Healthcare providers (see definition) must be registered with the HI Service and assigned healthcare identifiers to access a patient's My Health Record.

Healthcare provider	Trained individuals involved in the provision of health care.

Healthcare providers may also be referred to as health practitioners, clinicians or by a profession-specific description. |
| Healthcare record | A record of a patient's medical history, investigations, images, test results, medications, treatment notes, observations, and correspondence for an episode of care. |
| Healthcare record system | A healthcare record and management system used by imaging providers in healthcare settings. Healthcare record information must be managed appropriately and safeguarded from the start (record generation) to the finish (record destruction). It can be a picture archiving and communication system and a radiology information system. |

Health literacy	health literacy has two components: individual health literacy and the health literacy environment. Individual health literacy is a consumer's skills, knowledge, motivation, and capacity to access, understand, appraise, and apply information to make effective decisions about health and health care and take appropriate action.
	The health literacy environment is the infrastructure, policies, processes, materials, people and relationships that make up the healthcare system, which affects how consumers access, understand, appraise and apply health-related information and services.
High-risk medicine	Medicines that have an increased risk of causing significant patient harm or death if they are misused or used in error.
	High-risk medicines may vary between healthcare settings, depending on the types of medicines used and patients treated.
	Errors with these medicines are not necessarily more common than with other medicines. Because they have a low margin of safety, the consequences of errors with high-risk medicines can be more devastating.
	At a minimum, the following classes of high-risk medicines should be considered: • Medicines with a narrow therapeutic index • Medicines that present a high risk when other system errors occur, such as administration via the wrong route.
Hygienic environment	An environment in which practical prevention and control measures are used to reduce the risk of infection from contamination by microbes.
Imaging provider	A separately constituted organisation responsible for implementing clinical governance, administration and financial management of a service unit or service units providing health care to patients. It can be in any location or setting, including community settings, hospitals, outpatient facilities, practices and clinicians' rooms.
Imaging practitioner	An individual who practises a profession related to the provision of imaging services. Imaging practitioners may be required to maintain profession-specific registration with a national board under the National Registration and Accreditation Scheme or be self-regulated. An imaging practitioner may also be referred to as a health care provider, health practitioner, clinician or profession-specific description.
Incident	An event or circumstance that resulted, or could have resulted, in unintended or unnecessary harm to a patient or consumer or a complaint, loss or damage.

Infection	An infection occurs when a microorganism enters the body, increases in number and causes a reaction in the body. It may cause tissue injury and disease.
Informed consent	A communication process between a patient and imaging practitioner about options for diagnosis, treatment, health care processes or potential outcomes. This communication results in the patient's authorisation or agreement to undergo a specific intervention or participate in planned care. The communication ensures that the patient understands the health care they will receive, all the available options and the expected outcomes, including success rates and side effects for each option.

Informed consent can be verbal or written. |
| Interventional radiology | Interventional radiology combines imaging with invasive procedures. A variety of imaging modalities are used to examine internal parts of the body to target, guide, and monitor treatments.

The procedures involve inserting small instruments through incisions in the skin to target sites deep within the body. These can include needles, catheters, wires or stents used to perform biopsies, drain fluids, deliver medication or open narrowed ducts and vessels throughout the body. |
| Invasive medical device | Devices that, in whole or part, enter the body through an orifice or any surface of the body. This includes penetrating skin, mucous membranes, organs or internal body cavities. |
| Ionising radiation | Is a form of energy that can remove electrons from atoms and molecules. It can produce ion pairs in biological materials. |
| Jurisdictional requirements | Systematically developed statements from state and territory governments about appropriate healthcare or service delivery for specific circumstances.

Jurisdictional requirements encompass several document types from state and territory governments, including legislation, regulations, guidelines, policies, directives and circulars. |
Justification	The process of determining whether an imaging service, is beneficial overall and whether the expected benefits to the patient outweigh the harm (including radiation exposure) resulting from conducting the imaging service.
Leadership	Having a vision of what can be achieved, communicating this to others, and evolving strategies for realising the vision. Leaders motivate people and can negotiate for resources and other support to achieve goals.
Lossless compression	Mechanism for reducing file sizes that retains all original data

Magnetic resonance imaging (MRI)	Is a medical imaging modality that uses strong magnetic fields and radio waves to generate three-dimensional images in multiple planes.
Mammography	Mammography is a medical imaging modality that uses low-energy X-rays to capture images of the human breast.
Medical exposure	Ionising radiation patients receive as part of their medical diagnosis (diagnostic exposure) or treatment (therapeutic exposure).
Medicine	A chemical substance given to prevent, diagnose, cure, control, or alleviate disease or otherwise improve peoples' physical or mental well-being. These include prescription, non-prescription, investigational, clinical trial and complementary medicines, irrespective of how they are administered.
Modality	A term used to refer to different forms of imaging.
My Health Record	The secure online summary of a consumer's health information, managed by the System Operator of the national My Health Record system (the Australian Digital Health Agency). Healthcare providers can share clinical health documents with a consumer's My Health Record, according to the consumer's access controls. These may include information on medical history and treatments, diagnoses, medicines and allergies. Patients can add their health information to My Health Record
Novel infection	It is a new infection that was not known to infect humans, and it may pose a public health threat, especially if it spreads quickly and causes serious illness.
Nuclear Medicine	Involves giving a patient a small amount of radioactive medication, called a radiopharmaceutical, which makes the body slightly radioactive for a short time. A nuclear medicine camera detects the radioactive substance collected in the body tissues and takes images to examine the tissue's function. Nuclear medicine also treats some diseases or conditions.
Open disclosure	An open discussion with a patient and carer about an incident that resulted in harm to the patient while receiving health care. The criteria of open disclosure are an expression of regret, a factual explanation of what happened, the potential consequences, and the steps taken to manage the event and prevent recurrence.
Optimisation	Involves maximising the benefit-risk ratio of the patient's exposure to ionising radiation. Radiation exposure is minimised yet sufficient to achieve the imaging service's objective of diagnostic image quality or therapeutic effectiveness.

Orientation	The action of familiarising the workforce with their roles, work areas, and environment. It occurs when staff commerce work and when there are changes to governance, work policies, procedures and operations.
Orthopantomography	A panoramic two-dimensional X-ray that captures the entire mouth (mandible, maxilla and teeth) in a single image. It is a form of focal plane tomography where images on multiple planes are taken to make up a composite panoramic image.
Outcome	The status of an individual, group of people or population wholly or partially attributable to an action, agent or circumstance.
Partnership	A situation that develops when patients and consumers are treated with dignity and respect, when information is shared with them, and when participation and collaboration in healthcare processes are encouraged and supported to the extent that patients and consumers choose. Partnerships can exist in different ways in an imaging service, including at the level of individual interactions, at the level of service, department or program, and the level of the organisation.
	Partnerships can also exist with consumers and community groups. Generally, partnerships at all levels are necessary to ensure that the imaging service is responsive to patient and consumer input and needs. However, the nature of the activities for these different types of partnerships will depend on the context of the imaging service.
Patient	A person who is receiving health care from an imaging provider.
Patient identifiers	Items of information used to identify a patient, including family and given names, date of birth, sex, address, a healthcare record number and individual healthcare identifiers.
Patient reports	Documentation and information relating to a patient's health care, such as patient healthcare records, referrals, scans and imaging reports.
Peripheral Intravenous Catheter (PIVC)	A thin tube inserted into a vein to administer medication, contrast media, radiopharmaceuticals, blood products, or fluids directly into the bloodstream.
Person-centred care	An approach to the planning, delivering and evaluating of health care founded on mutually beneficial partnerships among imaging providers and patients.
	Person-centred care is respectful of and responsive to patient and consumers' preferences, needs and values. Key dimensions of person-centred care include respect, emotional support, physical comfort, information and communication, continuity and transition, care coordination, involvement of carers and family, and access to care.

Picture archiving and communication system (PACS)	A medical imaging technology that provides storage and access to images from multiple modalities. Electronic images and reports are transmitted digitally.
Plain X-ray	A medical imaging modality where a single beam is projected at the body to create a two-dimensional image of a body part.
Policy	A set of principles that reflect the organisation's mission and direction.
Positron emission tomography (PET)	PET is a medical imaging modality used to measure the body's functions. Radiopharmaceuticals are delivered to the patient, usually by injection. When the radioisotope decays, a positron is emitted and collides with an electron, generating gamma rays. The gamma camera detects the gamma rays and reconstructs three-dimensional images.
Procedure	The set of instructions to make policies and protocols operational, which are specific to an organisation.
Process	A series of actions or steps taken to achieve a particular goal.
Protocol	An established set of rules used to complete tasks or a set of tasks.
Qualified equipment service personnel	A qualified equipment service person shall: • If servicing radiation equipment, hold a radiation use licence for service and repair issued by the Commonwealth, state or territory regulator relevant to where the service is performed. • Provide evidence of successful completion of a recognised service training course appropriate to the equipment being serviced.
Quality improvement	The combined efforts of the workforce and others – including consumers, patients and their families, researchers, planners and educators – to make changes that will lead to better patient outcomes (health), better system performance (care) and better professional development. Quality improvement activities may be undertaken in sequence, intermittently or continually.
Radiation environment	An area where specific protection measures and safety provisions are required to control exposure and limit the extent of potential exposures and areas where occupational exposure conditions are reviewed.
Radiopharmaceuticals	Radioisotopes bound to molecules that can target specific tissues for diagnostic and therapeutic purposes.

Radiology information system	A software for patient management in radiology, complementary to the Picture Archiving and Communication system. While systems vary, most include the following functions:

- Patient scheduling and list management
- Predefined database searches
- Workflow management

Referral	Is a call for a health professional to consult on a patient.
	The referral explains the reasons for referring the patient and includes the patient's condition.
Referrer	A health professional who has asked in writing for another health professional to investigate, diagnose, or treat a patient.
	The referrer selects the imaging modality.
Regular	Occurring at recurring intervals. The specific interval for regular review, evaluation, audit or monitoring needs to be determined for each case. In the National Safety and Quality Medical Imaging Standards, the interval is consistent with best practice, risk-based, and determined by the subject and nature of the activity.
Request	Is a call for an imaging provider to perform imaging services on a patient.
	A request provides information to identify the imaging service and clinical information for the imaging provider.
	The requester selects the imaging modality.
Requester	A healthcare practitioner who has asked in writing that a patient receive specific imaging services from an imaging provider.
Respiratory hygiene and cough etiquette	Measures designed to minimise the transmission of respiratory pathogens via droplet or airborne routes in healthcare settings.
Reusable equipment, instruments and devices	A medical device designated by its manufacturer as suitable for reprocessing and reuse.
Risk	The chance of something happening that will have a negative impact. Risk is measured by the consequences of an event and its likelihood.
Risk assessment	It involves recognising events that may lead to harm in the future and analysing and managing them to minimise their likelihood and consequence.

Risk factor	A characteristic, condition or behaviour that increases the possibility of disease, injury or loss of well-being.
Risk management	Designing and implementing a program to identify and avoid or minimise risks to patients, employees, volunteers, visitors and the organisation.
Scope of clinical practice	Is the extent of an individual healthcare provider's approved clinical practice based on the individual's skills, knowledge, professional registration (where applicable), performance and professional suitability, and the needs and service capability of the organisation.
Sedation	A medication given before imaging services that cause patients pain or discomfort, which results in a medically induced temporary depression of consciousness whereby responses to external stimuli are limited.
Self-determined service	Is when an imaging service is provided by or on behalf of a consultant physician or specialist (other than a specialist in diagnostic radiology) after their clinical assessment determines that an imaging service is necessary. No written request is required.
Semi-critical equipment, instruments and devices	Items that contact mucous membranes or non-intact skin. They are single-use or sterilised after each use. If sterilisation is impossible, high-level disinfection is the minimum acceptable reprocessing level.
Service context	The environment or circumstance in which health care is delivered. Health service delivery occurs in many ways. The service context will depend on the organisation's function, size, and organisation of care, service delivery mode, location and workforce.
Shared decision-making	A consultation process in which an imaging practitioner and a patient jointly participate in making a health decision, discussing the options and their benefits and harms, and considering the patient's values, preferences and circumstances.
Side effects	The unintended consequences of a medicine, treatment or device.
Single photon emission computed tomography (SPECT)	SPECT is a medical imaging modality that measures the body's functions. Radiopharmaceuticals are delivered to the patient, usually by injection. When the radioisotope decays, gamma rays are released. The gamma camera acquires multiple two-dimensional images. Then, a computer reconstructs the images into a three-dimensional data set, which can be manipulated into thin sections along multiple body planes.

Standard	The agreed attributes and processes to ensure that a product, service or method will perform consistently at a designated level.
Standard national terminologies	Are structured vocabularies used in clinical practice to describe the care and treatment of patients accurately.

Healthcare providers worldwide use specialised vocabularies to describe diseases, operations, clinical procedures, findings, treatments and medicines. In Australia, terminologies include SNOMED CT-AU and Australian Medicines Terminology. |
| Standard precautions | Work practices that provide a first-line approach to infection prevention and control and are used for the care and treatment of all patients.

Standard precautions include:

- hand hygiene

- use of personal protective equipment (masks, gloves, gowns, protective eyewear) to prevent blood or bodily fluid exposure

- routine environmental cleaning aligned to risk,

- safe use and disposal of sharps

- reprocessing of reusable equipment and devices

- respiratory hygiene and cough etiquette (including physical distancing)

- aseptic technique

- linen and waste management |
| Substitute decision-maker | A person appointed or identified by law to make health, medical, residential and other personal (but not financial or legal) decisions on behalf of a patient whose decision-making capacity is impaired.

A substitute decision-maker may be appointed by the patient, appointed for (on behalf of) the person, or identified as the default decision-maker by legislation, which varies by state and territory. |

Substitute imaging service	Is when an imaging service is replaced with another. An imaging provider can substitute a service when: • It determines, from the clinical information provided on the request, that a different imaging service would be more appropriate for diagnosing the patient's condition • It has consulted with the requester or taken all reasonable steps to do so before providing the substituted service • The substituted service would be accepted as a more appropriate service in the circumstances by the imaging practitioner's specialty group
Supervision (Clinical)	An agreed, collaborative process that monitors, develops and supports supervisees in their clinical role. The focus is on the patient's healthcare and the supervisee's professional development. The clinical supervision process encompasses a formal agreement between supervisor and supervisee, the provision of opportunities for the supervisee to present relevant material regarding their clinical practice, a space for reflective review by the supervisee, and feedback by the supervisor. The supervisory process meets the supervisee's developmental needs.
System	Describes all the components that comprise an approach to managing an issue. The resources, policies, processes, and procedures are organised, integrated, regulated, and administered to accomplish a stated goal. A system: • Brings together risk management, governance, and operational processes and procedures, including education, training and orientation • Deploys an active implementation plan; feedback mechanisms including agreed protocols and guidelines, decision support tools and other resource materials • Uses incentives and sanctions to influence behaviour and encourage compliance with policies, protocols, regulations and procedures The workforce is a resource in the system and involved in all elements of system development, implementation, monitoring, improvement, and evaluation.
Teleradiology	The use of information and communications technologies to deliver imaging services and transmit imaging information over both long and short distances.
Templated reporting	Is when a pre-defined template is used to control content. The report has a consistent layout and standard terminology.

Training	The development of the workforce's knowledge and skills.
Transitions of care	Occur when all or part of a patient's care is transferred between healthcare locations, providers, or levels of care within the same location as the patient's conditions and care needs change.
Transmission-based precautions	Are extra work practices used when standard precautions alone may not be enough to prevent infection transmission. Transmission-based precautions are used with standard precautions and include droplet, contact and airborne precautions or a combination of these based on the infection's transmission route.
Ultrasound	An imaging method that uses sound waves to produce images of structures within your body. A transducer emits sound waves and detects the sounds reflected. Then, a monitor displays the reflected sound waves as a picture.
Workforce	All people working in an imaging practice, including imaging practitioners and any other employed or contracted locum, agency, student, volunteer or peer workers. The workforce can be members of the imaging practice or medical company representatives providing technical support who have assigned roles and responsibilities for the care of, administration of, support of, or involvement with patients in the imaging practice or imaging equipment.