Radiology Scopes

Radiology Technician

Radiology Technologist

Sonographer

Ultrasound Technician

Nuclear Medicine Technologist

Cardiovascular Technologist

Neurodiagnostic Technologist

Oncology Radiation Therapist

Criteria for National Registration Requirements – Radiology Technician

Criteria	Radiology Technician
Definition	Is a qualified health care provider, licensed and skilled in the diagnostic and therapeutic use of a variety of energy forms to produce and evaluate clinical images and data related to the procedures, maintaining high degree of accuracy in imaging positioning and exposure technique, safety imaging precautions and the assessment of the condition of an individual before, during and after the imaging procedure under a national authority or board that authorizes them to practice Radiology and use the title Radiology Technician
Practice Settings	Radiology Technician practice in a wide variety of settings, such as hospitals, community health settings, educational institutions, clinics, home care, and private practice.
Education	Minimum two years of academic structured program in Radiology Imaging from a recognized institution
Scope of Practice	The scope of practice for the profession of Radiology Technician includes the safe and effective application of competencies through the best practices encompassed in the use of varieties of energy forms utilizing electromagnetic radiation in the form of X Ray, Beta and Gama Radiation, as well as the evaluation and assessment of such images and therapeutic applications through the following scope: • Demonstrates professional accountability and scope of ethical and legal practice guidelines in relation to patients, families, other members of the multidisciplinary teams, community and society. • Provides medical imaging services uses the standards of accreditation and professional certification within the ethical framework, considering the socio-cultural needs of patients, families, communities and society. • Functions at all times in accordance with legislative, regulatory and policy guidelines relevant to medical imaging practice. • Applies communication skills to ensure that other members of the health care team, the patient and his family are fully informed of all the required imaging process information. • Assumes leadership responsibilities, as appropriate, in the delivery of services and health care within the Organizational mission, vision and values. • Provides a practical/professional environment that encourages continuous education of self, other imaging members as well as personal professional development and growth. • Ensures imaging practice meets organizational quality and safety standards and guidelines and participates in continuous quality improvement.

Licensure	• License to practice at the country of work if applicable • Valid radiation license from QCHP • The Radiology Technician must obtain a license from Qatar Council for Healthcare Practitioners (QCHP).
Experience	Minimum one (1) year experience as a Radiology Technician
Competency validation	• Must meet entry to practice criteria as defined by Qatar Council for Healthcare Practitioners (QCHP) for Radiology Technician.
Other Requirements for Evaluation & Registration	***(Refer to QCHP requirements for license Registration/Evaluation)*** http://www.qchp.org.qa/en/Pages/HowToRegisterToPracticeInQatar.aspx
Requirements for License renewal	***Refer to QCHP requirements for license Registration/Evaluation)*** http://www.qchp.org.qa/en/Pages/HowToRegisterToPracticeInQatar.aspx
	Note: Applicants with break from practice please see QCHP "Break from Practice Policy"

Radiology Technician Scope of Practice

Introduction:

The Radiology Technician Scope of Practice applies a competency framework built on five domains intrinsic to the role of the medical Imaging practice:

1- Professional and Ethical Practice
2- Clinical Practice
3- Leadership and Management
4- Continuous Education and Professional Development
5- Research and Development

Each of these domains is described through competency standards and performance criteria that define the requirements for practice demanded of the Radiology Technician. This document is to be used as a foundation for all Radiology technician roles, professional development and performance appraisal.

Scope of Practice Statement

The scope of practice for the profession of Medical Imaging Technology includes the safe and effective application of competencies through the best practices encompassed in the use of varieties of energy forms utilizing electromagnetic radiation in the form of x ray, Beta, Alpha and Gama Radiation, as well as the evaluation and assessment of such images and therapeutic applications.

Radiology Technician practicing General x-ray and Fluoroscopy must demonstrate an understanding of human anatomy, physiology, pathology, and medical terminology, and must maintain a high degree of accuracy in imaging positioning and exposure technique. They must maintain knowledge of radiation protection and safety. (Glossary of definitions is attached in appendix A at the end of this document)

Clinical Imaging (Radiology) definition:

The effective application of different forms of energy (defined in appendix A) to safely and accurately produce in a timely fashion, clinical images of the body anatomy for diagnostic, therapeutic and interventional purposes and the assessment and evaluation of such images to aid health care provider to assess and manage diseases and injuries.

Professional Roles and Responsibilities

Radiology Technician: A licensed healthcare provider, working under minimal supervision to safely produce and evaluate in a timely fashion, diagnostic and therapeutic clinical images and data related to the procedures, of a variety of energy forms (defined in appendix A) in different health care settings for patients of all ages maintaining high degree of accuracy in imaging positioning and exposure technique, safety imaging precautions and the assessment of the condition of an individual for imaging study before, during and after the imaging procedure.

Domains of Practice:

1 Domain One : Professional and Ethical

This domain defines the professional accountability and scope of ethical and legal practice guidelines of the Radiology Technician in relation to patients, families, other members of the multidisciplinary teams, community and society.

1.1 Professional Accountability:

Accepts accountability for own actions, and decision-making and for the related outcomes.

Performance Criteria

1.1.1 Demonstrate accountability for own independent professional judgment and critical thinking for actions and outcome of care through a continuous competency in accordance with National laws and regulations and scope of practice.

1.1.2 Practice within the limits of own competency elements and the boundaries of the Professional scope of practice.

1.1.3 Demonstrate sufficient knowledge of digital imaging and electronic information communications.

1.1.4 Adhere to evidence based or best practice guidelines when experiencing situations beyond the limits of own competency and the scope of practice.

1.1.5 Acknowledges and respects the accountability and responsibilities of other healthcare professionals and personnel.

1.1.6 Takes accountability for delegation of aspects of care delivery.

1.1.7 Assumes accountability for improving the quality and effectiveness of healthcare services provided.

1.2 Ethical Practice:

Demonstrates integrity, accountability, honors the rights and dignity of all individuals to provide medical imaging Radiology services using the standards of accreditation and professional certification within the ethical framework, considering the socio-cultural needs of patients, families, communities and society.

Performance Criteria:

1.2.1 Engages in ethical decision-making with respect to own professional responsibilities or where ethical issues affect healthcare delivery or clinical decision-making.

1.2.2 Acts as patient advocate protecting the person's rights in accordance with National law and terms and conditions of employment.

1.2.3 Maintains confidentiality and makes every reasonable effort to ensure the security of written, verbal and electronic patient information.

1.2.4 Respects the patient's (including children and young people and their parents) right to be fully informed establishing a context for self- determination, assent (children) and informed consent.

1.2.5 Respects and maintains the patient's and family's right for privacy and dignity.

1.2.6 Acts sensitively and fairly giving due consideration to diversity, including cultural and religious beliefs, race, age, gender, physical and mental state, and other relevant factors.

1.2.7 Remains sensitive to the physical and emotional needs of the patient through good communication,
1.2.8 Maintains patient and family continuing education to enhance patient care, public education, while embracing lifelong learning.
1.2.9 Demonstrates professional integrity and ethical conduct in all matters (as per organizational policy and Code of Ethics for Radiology Technician*)

**(Code of Ethics and Professional Conduct for Radiology Technologists in the State of Qatar to be developed)*

1.3 Legal Practice:

Functions at all times in accordance with legislative, regulatory and policy guidelines relevant to the medical imaging practice.

Performance Criteria:

1.3.1 Practices in accordance with agreed policies and procedures that guide medical imaging practice.
1.3.2 Practices in accordance with relevant laws and regulations that govern medical imaging practice.
1.3.3 Maintains valid registration and licensure to practice in Qatar.
1.3.4 Recognizes and acts upon breaches of laws and regulations related to the professional role

2 Domain Two: Clinical Practice

2.1 Patient Centered care:

Clinical practice in medical imaging should be provided by the Radiology Technician encompasses the key principles of patient centered care while providing medical imaging for diagnostic and therapeutic purposes, Licensed Radiology Technician has the theoretical Evidence Based knowledge, and the Practical Skills to perform the following Medical Imaging scope of Practice:

Performance Criteria:

2.1.1 Performs diagnostic and therapeutic Medical Imaging procedures indicated for own competency.
2.1.2 Reconfirms patient identification and verifies the procedure requested or prescribed.
2.1.3 Matching patient's clinical history with procedure, ensuring information is documented and available.
2.1.4 Preparing the patient for procedures, providing instructions to obtain desired results, gaining cooperation, and minimizing anxiety.
2.1.5 Selecting and operating imaging equipment, and/or associated accessories to successfully perform Imaging procedures. In all modalities, the Radiology Technician must maintain high degree of accuracy of imaging technique, maintaining knowledge of Radiation safety and other safety precautions in accordance with the international regulations and institutional policies.
2.1.6 Performs image post processing, storage and transmission when applicable.
2.1.7 Positioning patient to best demonstrate anatomic area of interest, respecting patient ability and comfort.
2.1.8 Determines whether the patient has been prepared for the procedure.
2.1.9 Determining proper imaging protocol and exposure factors combinations.
2.1.10 Applying principles of radiation protection to minimize exposure to patient, self, and others.

2.1.11 Evaluating images for technical quality.
2.1.12 Providing practical instruction for students and/or other health care professionals.
2.1.13 Assesses factors that may contraindicate the procedure, such as medications, patient history.
2.1.14 Recognizes signs and symptoms of an emergency.
2.1.15 Assesses patient risk for allergic reaction to contrast media prior to administration.
2.1.16 Locates and reviews previous examinations for comparison when applicable.
2.1.17 Receives, relays and documents verbal and/or telephone orders in the patient's chart where stated within institutional policy.
2.1.18 Identifies and removes artifact-producing objects such as dentures, telemetry units, chest leads, jewelry, and hearing aids.
2.1.19 Directs and advises patients for post imaging procedures care.
2.1.20 Ensures imaging practice meets organizational quality and safety standards and guidelines and participates in continuous quality improvement.
2.1.21 Implements quality assurance and risk management strategies.
2.1.22 Ensures a safe environment by identifying actual and potential risks and takes timely action to meet national legislation and workplace health and safety principles of the radiation safety program.
2.1.23 Adheres to and implements infection control policies and procedures.

This Practice should follow an approved Imaging Protocol for different healthcare settings of inpatients, outpatients, urgent and emergency patients and all agreed referred patients from other health care settings within the facility's imaging protocols and Service Level Agreements, (SLA's.)

2.2 Communication and Teamwork

The use of communication skills to ensure that other members of the health care team, the patient and his family are fully informed of all the required imaging process information.

Performance Criteria:

2.2.1 Consistently communicates relevant and accurate information in verbal, written and electronic forms in a timely manner to ensure the delivery of safe, competent and ethical care.
2.2.2 Demonstrates the ability to work as a team member by engaging in teamwork and the team-building processes.
2.2.3 Works in collaboration with other members of a wider multidisciplinary team across patient pathways.
2.2.4 Demonstrates cultural competence across patient groups through the use of appropriate communication and interpersonal skills.

3 Domain Three: Leadership and Management:

The professional Radiology Technician takes the responsibility for the management and care of patients undergoing the spectrum of imaging examinations within own competency together with associated work flow under the agreed imaging protocols.

3.1 Leadership

Performance Criteria:

3.1.1 Assumes leadership responsibilities within own competency, as appropriate, in the delivery of services and health care within the organizational mission, vision and values.

3.1.2 Manages self, and where appropriate organizes others, to ensure effective workload prioritization and time management.

3.1.3 Recognize deficiencies in knowledge, skills and competency and take appropriate action.

3.1.4 Develop and maintain competence to practice through continuing professional development.

3.1.5 Participates in mentorship and coaching of others to maximize the effectiveness of the provision of quality health care and the profession.

3.1.6 Applies clinical reasoning, critical thinking and problem solving skills to the organization, provision, management and evaluation of care.

3.1.7 Understands different levels of power and utilizes proper authorization to perform medical imaging for patient, family and community.

3.2 Delegation and Supervision

Delegates professional responsibilities to team members according to their competence and scope of practice.

Performance Criteria:

3.2.1 Delegates to others, activities within their abilities and scope of practice.

3.2.2 Uses a range of supportive strategies when delegates aspects of care to others.

3.2.3 Maintains accountability and responsibility when delegating aspects of care to others.

4 Continuous Education and Professional Development

This domain defines the responsibilities of the Radiology technician to provide a practical/professional environment that encourages continuous education of self, other imaging members as well as personal professional development and growth.

4.1 Education and facilitation:

Performance Criteria:

4.1.1 Shares and disseminates professional knowledge and findings with others.

4.1.2 Acts as a resource person for others.

4.1.3 Contributes to the formal and informal education and professional development of students and colleagues facilitating and where appropriate coordinating learning opportunities.

4.1.4 Acts as an effective preceptor and/or mentor as assigned, undertaking appropriate preparation and updating to undertake the roles.

4.1.5 Takes opportunities to learn together with others in order to contribute to health care improvement.

4.2 Lifelong Learning:

Assumes responsibility for own professional development through lifelong learning to ensure continued competence and performance improvement.

Performance Criteria:

4.2.1 Undertakes regular self-assessment and reviews own practice through reflection, peer review, competency assessment, critical examination and evaluation.

4.2.2 Instigates planned updating knowledge and skills for safe, person-centered, evidence-based practice.

4.2.3 Actively engages in ongoing professional development and performance improvement of self and others.

4.2.4 Maintains a professional portfolio including evidence of continued competence, professional development and improvement as required for continuing registration in relevant jurisdiction.

4.3 Using Data and Information Systems

Use data systems to enhance the quality and delivery of imaging service and patient care.

Performance Criteria:

4.3.1 Acquires the information technology skills needed to inform and provide optimum healthcare care and document accurately outcomes of interventions.

4.3.2 Understands how to use technology and data to assist in problem identification and identification of deficiencies that can be remediated to enable improvements in patient care.

4.3.3 Analyses data accurately and comprehensively leading to appropriate interpretation of findings and development of implementation plans.

5 Research and development

Uses research, evaluation, service improvement and audit findings to enhance the quality of patient care and protect the rights of those participating.

Performance Criteria:

5.1.1 Participates in activities that disseminate research findings such as publications, journal clubs, grand rounds and presentation.

5.1.2 Promotes research, evaluation, service improvement initiatives and audit, designed to improve healthcare practice and disseminate findings to colleagues, patients, families, communities, and society.

5.1.3 Undertakes appropriate development to ensure competency to recruit, ensure informed consent is obtained, support involvement, facilitate, monitor and where appropriate advocate withdrawal of individuals participating in clinical research and evaluation.

References:

- The College of Radiographers – UK
- The Society of Radiographers – UK
- Health Professions Council – UK
- American Society of Radiologic Technologists (ASRT) – USA
- Canadian Association of Medical Radiation Technologists – Canada
- Australian Institute of Radiography (AIR) – Australia

Appendix A

Glossary of Clinical Imaging Definitions:

Radiology Technician: Is a health care provider, working under minimal supervision to produce and evaluate safely, diagnostic and therapeutic medical images and data related to the procedures, of a variety of energy forms in different health care settings for patients of all ages and the assessment of the condition of an individual for imaging study before, during and after the imaging procedure.
Radiology Technicians employed by Hamad Medical Corporation after 1 April 2011 and practicing under the supervision of the HMC Clinical Imaging Service have practice limitation to general x-ray and fluoroscopy only.

Medical Imaging Energy Sources and Imaging Applications:

1- X Ray Energy: Form of high frequency electromagnetic radiation which can be applied in the following Imaging modalities:

* **General Diagnostic Radiography:** Examinations for internal organs, bones, cavities and foreign objects; includes cardiovascular imaging and interventional Radiography Images with or without contrast media for diagnostic purposes.
* **Computed Tomography (CT):** A series of x-ray images in rapid sequences in cross – sectional views (slices) to examine the body organs with or without contrast media, can also reconstruct additional images from those taken to provide more information in either 2D or 3D for diagnostic and Interventional purposes.
* **Fluoroscopy (FS):** live motion Radiography of continuous x ray beam used to visualize and monitor the administration of contrast agents to highlight vessels and other internal organs or to help position devices within the body such as pacemakers, guide wires, stents under Fluoroscopy, which is described as Interventional Radiography (IR).
* **Interventional Radiography (IR):** live fluoroscopy for motion Radiography of continuous x-ray beam as described in Fluoroscopy. IR is a specialty that is primarily using
* **Mammography (MM):** Imaging of the breast tissues for diagnostic purposes.
* **Bone Density or Dual Energy X-ray Absorptiometry Dexa (BD):** Imaging and measurement of bone density using a low energy x-ray beam.

2- Magnetic Resonance Energy: Uses a powerful magnet for Magnetic Resonance Imaging (MRI) to align the Hydrogen atoms of the body then introduce Radio Waves to alter this alignment which produces enough signals to build a 2-D and /or 3-D map from cross section slices of different tissue types within the body for diagnostic imaging purposes.

Application to Medical Imaging

1- X Ray Energy:

* **General Diagnostic Radiography (General X-ray):** Examinations for internal organs, bones, cavities and foreign objects; includes cardiovascular imaging and interventional Radiography Images with or without contrast media for diagnostic purposes.
* **Computed Tomography (CT):** A series of x-ray images in rapid sequences in cross – sectional views (slices) to examine the body organs with or without contrast media, can also reconstruct additional images from those taken to provide more information in either 2D or 3D for diagnostic purposes.
* **Fluoroscopy (FS):** live motion Radiography of continuous x-ray beam used to visualize and monitor the administration of contrast agents to highlight vessels and other internal organs or to help position devices within the body such as pacemakers, guide wires, stents etc.,,
* **Interventional Radiography (IR**): live fluoroscopy for motion Radiography of continuous x-ray beam as described in Fluoroscopy. IR is a specialty that is primarily using
* **Mammography (MM):** Imaging of the breast tissues for diagnostic purposes.
* **Bone Density or Dual Energy X-ray Absorptiometry Dexa (BD):** Imaging and measurement of bone density using a low energy x-ray beam.

2- High Frequency Radio Waves and Electromagnetic Field:

* **Magnetic Resonance (MRI) Scans:** Examinations for internal organs, central nervous system, bones, cavities, soft tissue applying a strong magnet field with introducing Radio frequency coils vary for different body parts, it shows extreme detail of structures and function with or without contrast. Additional reconstruction of information in 2D or 3D is performed to providing additional diagnostic information.

Criteria for National Registration Requirements – Radiology Technologist

Criteria	Radiology Technologist / Clinical Imaging Technologist
Definition	Is a qualified health care provider, licensed and skilled in the diagnostic and therapeutic use of a variety of energy forms to produce and evaluate clinical images and data related to the procedures, maintaining high degree of accuracy in imaging positioning and exposure technique, safety imaging precautions and the assessment of the condition of an individual before, during and after the imaging procedure under a national authority or board that authorizes them to practice Clinical Imaging/ Medical Imaging/ Radiology and use the title Clinical Imaging
Practice Settings	Clinical Imaging Technologists practice in a wide variety of settings, such as hospitals, community health settings, educational institutions, clinics, home care, and private practice.
Education	Bachelor degree in Radiology Technology/Radiology Science or Associate degree or Diploma in Radiology Technology/Radiology Science in addition to successful completion of a National licensure examination from an internationally recognized licensing body.
Scope of Practice	The scope of practice for the Clinical Imaging Technologist includes the safe and effective application of competencies through the best practices encompassed in the use of varieties of energy forms utilizing electromagnetic radiation in the form of X Ray, Beta and Gama Radiation, Radio Waves and Magnetic Resonance Field, it involves producing diagnostic images and performing diagnostic and therapeutic interventions, as well as the evaluation and assessment of such images and therapeutic applications through the following scope: • Demonstrates professional accountability and scope of ethical and legal practice guidelines in relation to patients, families, other members of the multidisciplinary teams, community and society. • Provides medical imaging services uses the standards of accreditation and professional certification within the ethical framework, considering the socio-cultural needs of patients, families, communities and society. • Functions at all times in accordance with legislative, regulatory and policy guidelines relevant to medical imaging practice. • Applies communication skills to ensure that other members of the health care team, the patient and his family are fully informed of all the required imaging process information.

Criteria	Clinical Imaging Technologist
	• Assumes leadership responsibilities, as appropriate, in the delivery of services and health care within the Organizational mission, vision and values. • Provides a practical/professional environment that encourages continuous education of self, other imaging members as well as personal professional development and growth. • Ensures imaging practice meets organizational quality and safety standards and guidelines and participates in continuous quality improvement.
Licensure	• License of profession practice at the origin of graduation. • The Clinical Imaging Technologist must apply for licensure through Qatar Council for Healthcare Practitioners (QCHP).
Experience	Minimum: 2 years clinical experience in a recognized Hospital / Healthcare facility. (May include 1 year clinical internship, plus 1 year post graduate clinical experience). Newly graduated technologists from an acceptable academic program for Qatari nationals and long-term residents.
Competency validation	• Verification for Qualification / Experience documents at the appointment. • Must meet entry to practice criteria as defined by the Qatar National Competency Profile for Clinical Imaging Technologist
Other Requirements for Evaluation & Registration	***(Refer to QCHP requirement for license Registration/Evaluation)*** http://www.qchp.org.qa/en/Pages/HowToRegisterToPracticeInQatar.aspx
Requirements for License renewal	***(Refer to QCHP requirement for license Registration/Evaluation)*** http://www.qchp.org.qa/en/Pages/HowToRegisterToPracticeInQatar.aspx
Note: Applicants with break from practice please see QCHP "Break from Practice Policy"	

Clinical Imaging Technologist Scope of Practice

Introduction:

The Clinical Imaging Technologist Scope of Practice applies a competency framework built on five domains intrinsic to the role of the Clinical Imaging Practice:

1- Professional and Ethical Practice
2- Clinical Practice
3- Leadership and Management
4- Continuous Education and Professional Development
5- Quality and Safety

Each of these domains is described through competency standards and performance criteria that define the requirements for practice demanded of the Radiology Technologist. This document is to be used as a foundation for all Clinical Imaging technologist roles General X-ray and Fluoroscopy, CT Scan, Magnetic Resonance Imaging (MRI), and Nuclear Medicine), professional development and performance appraisal.

Scope of Practice Statement

The scope of practice for Clinical Imaging Technologist includes the safe and effective application of competencies through the best practices encompassed in the use of varieties of energy forms utilizing electromagnetic radiation in the form of x-ray, Beta and Gamma, Radio waves and Magnetic Resonance Fields. It involves producing diagnostic images and performing diagnostic and therapeutic interventions, as well as the evaluation and assessment of such images and therapeutic applications.
Clinical Imaging Technologist must demonstrate an understanding of human anatomy, physiology, pathology, and medical terminology, and must maintain a high degree of accuracy in imaging positioning, exposure technique and image acquisition. They must maintain knowledge of radiation and MRI protection and safety.
(Glossary of definitions is attached in appendix A at the end of this document)

Clinical Imaging definition:

Clinical Imaging Technology: The effective application of different forms of energy (defined in appendix A) to safely and accurately produce in a timely fashion, clinical images of the body anatomy for diagnostic, therapeutic and interventional purposes and the assessment and evaluation of such images to aid health care provider to assess and manage diseases and injuries.

Professional Roles and Responsibilities

Clinical Imaging Technologist: A licensed healthcare provider, working under minimal supervision to safely produce and evaluate in a timely fashion, diagnostic and therapeutic clinical images and data related to the procedures, of a variety of energy forms (defined in appendix A) in different health care settings for patients of all ages maintaining high degree of accuracy in imaging positioning and exposure technique, safety imaging precautions and the assessment of the condition of an individual for imaging study before, during and after the imaging procedure.
Provides mentorship and coaching for others to enhance the effectiveness of the provision of quality healthcare within competencies framework and evidence based practices.

COMPETENCIES FRAMEWORK

1. DOMAIN ONE: PROFESSIONAL AND ETHICAL PRACTICE

This domain defines the professional accountability and scope of ethical and legal practice guidelines of the Clinical Imaging Technologist in relation to patients, families, other members of the multidisciplinary teams, community and society.

1.1 Competency Standard: Accountability

This domain defines the professional accountability and scope of ethical and legal practice guidelines of the Clinical Imaging Technologist in relation to patients, families, other members of the multidisciplinary teams, community and society.

Performance Criteria:

1.1.1. Demonstrate accountability for own independent professional judgment and critical thinking for actions and outcome of care through a continuous competency in accordance with Qatar laws and regulations and scope of practice.
1.1.2. Practice within the limits of own competency elements and the boundaries of the Professional scope of practice.
1.1.3. Demonstrate sufficient knowledge of digital imaging and electronic information communications.
1.1.4. Adhere to evidence based or best practice guidance when experiencing situations beyond the limits of own competency and the scope of practice.
1.1.5. Acknowledges and respects the accountability and responsibilities of other healthcare professionals and personnel.
1.1.6. Takes accountability for delegation of aspects of care delivery.
1.1.7. Assumes accountability for improving the quality and effectiveness of healthcare services provided.

1.2 Competency Standard: Ethical Practice

Provides medical imaging services uses the standards of accreditation and professional certification within the ethical framework, considering the socio-cultural needs of patients, families, communities and society.

Performance Criteria:

1.2.1 Engages in ethical decision-making with respect to own professional responsibilities or where ethical issues affect healthcare delivery or clinical decision-making.
1.2.2 Acts as patient advocate protecting the person's rights in accordance with Qatar law and terms and conditions of employment.
1.2.3 Maintains confidentiality and makes every reasonable effort to ensure the security of written, verbal and electronic patient information.
1.2.4 Respects the patient's (including children and young people and their parents) right to be fully informed establishing a context for self- determination, assent (children) and informed consent.
1.2.5 Respects and maintains the patient's and family's right for privacy and dignity.
1.2.6 Acts sensitively and fairly giving due consideration to diversity, including cultural and religious beliefs, race, age, gender, physical and mental state, and other relevant factors.
1.2.7 Remains sensitive to the physical and emotional needs of the patient through good communication.
1.2.8 Maintains patient and family continuing education to enhance patient care, public education, while embracing lifelong learning.

1.3 Competency Standard: Legal Practice

Functions at all times in accordance with legislative, regulatory and policy guidelines relevant to medical imaging practice.

Performance Criteria:

1.3.1. Practices in accordance with agreed policies and procedures that guide medical imaging practice.
1.3.2. Practices in accordance with relevant laws and regulations that govern medical imaging practice.
1.3.3. Maintains valid registration and licensure to practice in Qatar.
1.3.4. Recognizes and acts upon breaches of laws and regulations related to the professional role

2 DOMAIN TWO: Clinical Practice

2.1 Competency Standard: Provision of Care

Clinical practice in medical imaging should be provided by the Clinical Imaging Technologist encompasses the key principles of patient centered care while providing medical imaging for diagnostic and therapeutic purposes. Licensed Clinical Imaging Technologist has the theoretical Evidence Based knowledge, and the Practical Skills to perform the following Clinical Imaging scope of Practice:

Performance Criteria:

2.1.1 Performs diagnostic and therapeutic Clinical imaging procedures indicated for own competency.
2.1.2 Reconfirms patient identification and verifies the procedure requested or prescribed.
2.1.3 Corroborating patient's clinical history with procedure, ensuring information is documented and available.
2.1.4 Preparing the patient for procedures, providing instructions to obtain desired results, gaining cooperation, and minimizing anxiety.
2.1.5 Selecting and operating imaging equipment, and/or associated accessories to successfully perform Imaging procedures.
2.1.6 Performs image post processing, storage and transmission when applicable.
2.1.7 Positioning patient to best demonstrate anatomic area of interest, respecting patient ability and comfort.
2.1.8 Determines whether the patient has been prepared for the procedure.
2.1.9 Determining proper imaging protocol and exposure factors combinations.
2.1.10 Applying principles of radiation protection to minimize exposure to patient, self, and others.
2.1.11 Evaluating images for technical quality.
2.1.12 Providing practical instruction for students and/or other health care professionals.
2.1.13 Assesses factors that may contraindicate the procedure, such as medications, patient history.
2.1.14 Recognizes signs and symptoms of an emergency.
2.1.15 Assesses patient risk for allergic reaction to contrast media prior to administration.
2.1.16 Assists Radiologist as Scrub Assistant with the adequate competencies with invasive and non- invasive Interventional Radiology (IR) procedures when applicable.
2.1.17 Locates and reviews previous examinations for comparison when applicable.

2.1.18 Receives, relays and documents verbal and/or telephone orders in the patient's chart where stated within institutional policy.

2.1.19 Identifies and removes artifact-producing objects such as dentures, telemetry units, chest leads, jewelry, and hearing aids.

2.1.20 Directs and advises patients for post imaging procedures care.

This Practice should follow an approved Imaging Protocol for different healthcare settings of inpatients, outpatients, urgent and emergency patients and all agreed referred patients from other health care settings within HMC imaging protocols and SLA's.

2.2 Competency Standard: Communication and Teamwork

The use of communication skills to ensure that other members of the health care team, the patient and his family are fully informed of all the required imaging process information.

Performance Criteria:

2.2.1 Consistently communicates relevant and accurate information in verbal, written and electronic forms in a timely manner to ensure the delivery of safe, competent and ethical care.

2.2.2 Demonstrates the ability to work as a team member by engaging in teamwork and the team-building processes.

2.2.3 Works in collaboration with other members of a wider multidisciplinary team across patient pathways.

2.2.4 Demonstrates cultural competence across patient groups through the use of appropriate communication and interpersonal skills.

3 DOMAIN THREE: Leadership and Management

3.1 Competency Standard: Leadership

The Clinical Imaging Technologist takes the lead responsibility for the management and care of patients undergoing the spectrum of imaging examinations together with associated work flow.
Also leads on managing complex and rapidly changing in medical imaging services which requires the highest level of leadership and managerial skills as well as excellent clinical skills, the professional workforce is essential to the provision of strong and innovative leadership and management of these services

Performance Criteria:

3.1.1 Assumes leadership responsibilities, as appropriate, in the delivery of services and health care within the Organizational mission, vision and values.

3.1.2 Manages self, and where appropriate organizes others, to ensure effective workload prioritization and time management.

3.1.3 Recognize deficiencies in knowledge, skills and competency and take appropriate action.

3.1.4 Develop and maintain competence to practice through continuing professional development.

3.1.5 Participates in mentorship and coaching of others to maximize the effectiveness of the provision of quality health care and the profession.

3.1.6 Applies clinical reasoning, critical thinking and problem solving skills to the organization, provision, management and evaluation of care.
3.1.7 Understands different levels of power and utilizes proper authorization to perform medical imaging for patient, family and community.

3.2 Competency Standard: Delegation and Supervision

Delegates and provides supervision to team members according to their competence and scope of practice.

Performance Criteria:

3.2.1 Delegates to others, activities within their abilities and scope of practice.
3.2.2. Uses a range of supportive strategies when supervising aspects of care delegated to others.
3.2.3. Maintains accountability and responsibility when delegating aspects of care to others.

4 Education, Learning and development

This domain defines the responsibilities of the Clinical Imaging technologist to provide a practical/professional environment that encourages continuous education of self, other imaging members as well as personal professional development and growth.

4.1 Competency Standard: Education and facilitation

Performance Criteria:

4.1.1 Shares and disseminates professional knowledge and findings with others.
4.1.2 Acts as a resource person for others.
4.1.3 Contributes to the formal and informal education and professional development of Students and colleagues facilitating and where appropriate coordinating learning opportunities.
4.1.4 Acts as an effective preceptor and/or mentor as assigned, undertaking appropriate Preparation and updating to undertake the roles.
4.1.5 Takes opportunities to learn together with others in order to contribute to health care improvement.

4.2 Competency Standard: Lifelong Learning

Assumes responsibility for own professional development through lifelong learning to ensure continued competence and performance improvement.

Performance Criteria

4.2.1 Undertakes regular self-assessment and reviews own practice through reflection, peer review, competency assessment, critical examination and evaluation.
4.2.2 Instigates planned updating knowledge and skills for safe, person-centered, evidence-based practice.
4.2.3 Actively engages in ongoing professional development and performance improvement of self and others.
4.2.4 Maintains a professional portfolio including evidence of continued competence, professional development and improvement as required for continuing registration in relevant jurisdiction.

4.3 Competency Standard: Using Data and Information Systems

Use data systems to enhance the quality and delivery of imaging service and patient care.

Performance Criteria

4.3.1. Acquires the information technology skills needed to inform and provide optimum healthcare care and document accurately outcomes of interventions.
4.3.2. Understands how to use technology and data to assist in problem identification and identification of deficiencies that can be remediated to enable improvements in patient care.
4.3.3. Analyses data accurately and comprehensively leading to appropriate interpretation of findings and development of implementation plans.

5 DOMAIN FIVE: Quality and Patient Safety

Ensures imaging practice meets organizational quality and safety standards and guidelines and participates in continuous quality improvement. In all modalities, the Radiology Technologist must maintain high degree of accuracy of imaging technique, maintaining knowledge of Radiation safety and other safety precautions in accordance with the international regulations and institutional policies.

Performance Criteria

5.1.1 Practices in accordance with approved quality standards and guidelines reflecting recognized evidence based best practice.
5.1.2 Acts immediately and appropriately in accordance with the national and/or institutional disaster plan as needed
5.1.3 Implements quality assurance and risk management strategies.
5.1.4 Ensures a safe environment by identifying actual and potential risks and takes timely action to meet national legislation and workplace health and safety principles of the radiation safety program.
5.1.5 Participates in ongoing quality improvement and risk management initiatives.
5.1.6 Adheres to and implements infection control policies and procedures.
5.1.7 Communicates and records safety concerns to the relevant authority and documents response.

References:

- The College of Radiographers – UK
- The Society of Radiographers – UK
- Health Professions Council – UK
- American Society of Radiologic Technologists (ASRT) – USA
- Canadian Association of Medical Radiation Technologists – Canada
- Australian Institute of Radiography (AIR) – Australia

Appendix A

Glossary of Imaging Definitions:

Radiology Technologist: Is a health care provider, working under minimal supervision to produce and evaluate safely, diagnostic and therapeutic medical images and data related to the procedures, of a variety of energy forms in different health care settings for patients of all ages and the assessment of the condition of an individual for imaging study before, during and after the imaging procedure.

1- X-Ray Energy: Form of high frequency electromagnetic radiation which can be applied in the following Imaging modalities:

* **General Diagnostic Radiography:** Examinations for internal organs, bones, cavities and foreign objects; includes cardiovascular imaging and interventional Radiography Images with or without contrast media for diagnostic purposes.

* **Computed Tomography (CT):** A series of x-ray images in rapid sequences in cross - sectional views (slices) to examine the body organs with or without contrast media, can also reconstruct additional images from those taken to provide more information in either 2D or 3D for diagnostic purposes.

* **Fluoroscopy (FS):** live motion Radiography of continuous x ray beam used to visualize and monitor the administration of contrast agents to highlight vessels and other internal organs or to help position devices within the body such as pacemakers, guide wires, stents etc.,

* **Mammography (MM):** Imaging of the breast tissues for diagnostic purposes.

2- Ultra Sound Energy: Is the use and application of a high frequency sound on different tissues of the body to produce Ultrasound (US) images for diagnostic purposes.

3- Magnetic Resonance Energy: Uses a powerful magnet for Magnetic Resonance Imaging (MRI) to align the Hydrogen atoms of the body then introduce Radio Waves to alter this alignment which produces enough signals to build a 2-D and /or 3-D map from cross section slices of different tissue types within the body for diagnostic purposes.

4- Gamma & Beta Radiation Energy : The use and application of Radiation in Nuclear Medicine (NM) sections with radioactive tracers orally or intravenously and applying Detectors (Gamma Camera) to capture and form images to examine organs function, for example the kidneys or heart. Certain Radioisotopes (Beta) can also be administered to **treat** certain cancers such as thyroid cancer.

5- Positron Emission Energy: Electromagnetic Energy produced by the emission of nuclear positron and applied in the Computed Tomogram Imaging studies known as PET /CT

Criteria for National Registration Requirements – Sonographer

Criteria	Sonographer
Definition	The Sonographer is an individual who is a qualified health care provider, licensed and skilled to produce and evaluate the quality of clinical ultrasound images and data. Sonographers hold a current valid certification, license or registration In Sonography by a national authority or board that authorizes them to practice in Ultrasound.
Practice Settings	Sonographers practice in a wide variety of settings such as outpatient clinics, surgery facilities, and inpatient units, in hospitals and in private practice.
Education	• 3 years diploma in radiology technology, medical radiology or diagnostic medical ultrasound from an accredited academic institution **OR** • Bachelor's degree in radiology technology, medical radiology or diagnostic medical ultrasound from an accredited academic institution **OR** • Bachelor's Degree in a health-related field AND post-graduate degree in sonography/ultrasound
Scope of Practice	Sonographers will utilize evidence based best practices to provide a safe and effective application of their professional competencies in the use of Ultrasound. The Sonographer uses Ultrasound to assess, in real time, the anatomy, physiology, physiological function and blood flow. The Sonographer will: • Perform patient assessments. • Acquire and analyze data obtained using ultrasound and related diagnostic technologies. • Provide a summary of findings to the physician to aid in patient diagnosis and management. • Use independent judgment and systematic problem solving methods to produce high quality diagnostic information and optimize patient care. • Function at all times in accordance with legislative, regulatory and policy guidelines relevant to ultrasound practice. • Applies communication skills to ensure that other members of the health care team, the patient and his family are fully informed of all the required imaging process information. • Assumes leadership responsibilities, as appropriate, in the delivery of services and health care within the Organizational mission, vision and values. • Practice within the scope of their expertise and training.
Licensure	Sonographers must apply for certification through Qatar Council For Healthcare Practitioners (QCHP).

Experience	• Two years (2) experience in medical sonography or • Newly graduated from an acceptable academic program for Qatari nationals and residents with a one year internship in Qatar
Competency validation	Competency will be validated through the verification of education (degree), certificates and relevant clinical experience. Competency validation can also occur through demonstration of registration with an appropriate professional regulatory or statutory body.
Others Requirement for Evaluation & Registration	Refer to QCHP requirements
Requirements for License renewal	• Evidence of practice in Sonography in the period since obtaining last license. • Proof of current employment in the respective field. • Evidence of maintained capability within the scope of practice Sonography – CPD. • Compliance with QCHP competency validation standards.
Note: Applicant with break from practice please see QCHP "Break from Practice Policy"	

Sonographer Scope of Practice

INTRODUCTION

The Sonographer scope of practice is based on a competency framework that comprises **professional ethics, clinical practice, leadership and management, learning and management** and **research** domains intrinsic to the role of the Sonographer. The scope also describes the professional roles and activities and practice settings for the Sonographer's profession. This document sets out the standards of proficiency required for safe and effective practice in the Sonographer's profession. They are the threshold standards necessary to protect members of the public. Once on the Qatar Supreme Council for Health Professionals Register, the licensed professional must continue to meet the standards of proficiency which relate to the areas in he/she works. Periodic updating of the scope of practice statement and standards of proficiency will be necessary as technology and perspective change.

Sonographers may exercise their professional judgment and decision making, wherever they practice, so long as this is within the Sonographer's knowledge, competence and scope of practice. A licensed professional's scope of practice may change over time and the scope of a more experienced Sonographer may become narrower and more focused with increased specialization. The licensed professional must have evidence of advanced competencies in order to address responsibilities that extend beyond traditional boundaries of sonography advanced practice.

STATEMENT OF PURPOSE:

The purpose of this document is to define Sonographers' scope of practice in Qatar to:

a) Describe the services offered by qualified Sonographers.
b) Define the professional accountability, required competencies, and scope of ethical and legal practice of the Sonographers in relation to patients, families, other members of the multidisciplinary team, community and society.
c) Serve as a reference for license regulating authorities and professionals governing healthcare.

DEFINITION OF SONOGRAPHY:

Sonography uses ultrasound imaging techniques (high frequency sound waves) to assess in real time the structure and function of the muscles, skeletal anatomy, organs and great vessels. Given the increasing sophistication of the techniques used for sonography the Sonographer needs to be highly skilled.

PROFESSIONAL ROLES AND ACTIVITIES:

Sonographers perform echocardiograms, or ultrasound imaging, to evaluate different aspects of the anatomy and physiology of the body. They review patient files and must be familiar with basic anatomic and physiologic conditions in order to recognize and identify any abnormalities While Sonographers do not themselves diagnose patients, they work with physicians in doing so or may assist in other diagnostic procedures. Other duties may include scheduling appointments, explaining procedures to patients and maintaining ultrasound equipment.

Activities of the Sonographer include, but are not limited to:

- Equipment calibration
- Discusses and determines the pathology and imaging technique with the physicians and surgeons
- Visits, introduce themselves to the patient and family and explains what the patient can expect and to obtain relevant medical history.
- Equipment set-up

- Data measurement and acquisition
- Documentation throughout the scan, relevant physiological readings, technical troubleshooting and monitoring changes
- Removes and cleans equipment according to the institutional infection control policy and/or protocol
- Provides preliminary reports the technical portion of the test according to facility policy and/or protocol
- Ensures proper storage and/or achieving of images

COMPETENCY FRAMEWORK

1 DOMAIN ONE: PROFESSIONAL AND ETHICAL PRACTICE

This domain defines the professional accountability and scope of ethical and legal practice of the sonographer in relation to patients, families, other members of the multidisciplinary team, community and society.

1.1 Competency Standard 1.1: Accountability

Accepts accountability for own actions, and decision-making and for the related outcomes.

Performance criteria:

1.1.1 Works within the limits of own competence and the boundaries of personal and professional Scope of Practice.

1.1.2 Identifies opportunities for advocacy, health promotion and disease prevention.

1.1.3 Provides care without discrimination on any basis, with respect for the rights and dignity of all individuals.

1.1.4 Encourages and promotes appropriate stewardship of resources.

1.1.5 Avoids any activity that creates a conflict of interest or violates any Qatari laws and regulations.

1.1.6 Promotes the growth of the profession, and presents a positive image of sonography to the community.

1.2 Competency Standard 1.2: Ethical Practice

Demonstrates integrity, accountability, honors the rights and dignity of all individuals, and pursues a quest for excellence in all professional activities that serve the best interests of the patient, society, and the profession.

Performance criteria:

1.2.1 Engages in ethical decision-making with respect to own professional responsibilities or where ethical issues affect healthcare delivery or clinical decision-making.

1.2.2 Acts as patient advocate protecting the person's rights in accordance with Qatari law and organization specific terms and conditions.

1.2.3 Maintains patient confidentiality and makes every reasonable effort to ensure the security of written, verbal and electronic patient information.

1.2.4 Respects the patient's (including children and young people and their parents') right to be fully informed, establishing a context for self- determination, assent (children) and informed consent.

1.2.5 Acts sensitively and fairly giving due consideration to diversity, including cultural and religious beliefs, race, age, gender, physical and mental state, and other relevant factors.

1.2.6 Questions when appropriate, healthcare practice where the safety of others is at risk and where the quality of care warrants improvement; acts where the safety of care is compromised and where necessary reports others who may be risking patient safety.

1.2.7 Demonstrates professional integrity and ethical conduct in all matters (as per organizational approved policy and Code of Ethics and Professional Conduct for Sonographers*).
((Code of Ethics and Professional Conduct for Sonographers in State of Qatar must be developed))

1.3 Competency Standard 1.3: Legal Practice

Functions at all times in accordance with legislative, regulatory and policy guidelines relevant to sonography practice in Qatar.

Performance criteria:

1.3.1 Practices in accordance with agreed policies and procedures that guide sonography practice.

1.3.2 Practices in accordance with relevant State of Qatar laws and regulations that impact sonography practice.

1.3.3 Maintains valid registration and licensure to practice in Qatar.

1.3.4 Recognizes and acts upon breaches of laws and regulations relating to the professional role and/or Code of Ethics and Professional Conduct for Sonography.

1.3.5 Maintains a professional portfolio including evidence of continued competence and improvement.\

2 DOMAIN TWO: CLINICAL PRACTICE

As a healthcare profession, sonography is practiced in partnership with members of the Inter professional team, service users, support staff and others in order to deliver collaborative care across the healthcare continuum. Critical thinking, patient and environment assessment skills and evidence-based clinical practice guidelines enable sonographers to autonomously develop and implement sonography driven protocols.

2.1 Competency Standard 2.1: Provision of Care

Sonographers serve a diverse population and may function in one or more of a variety of activities. The practice of sonography includes but is not limited to assessment, technique planning, obtaining structural measurements, and image acquisition to assist physicians in diagnosis and treatment planning.

Performance criteria:

2.1.1 Maintains the provision of sonography services that are safe, aseptic, preventative and restorative to the patient.

2.1.2 Keeps accurate, contemporaneous, comprehensive and legible records of patient care in accordance with applicable legislation, protocols and guidelines. This includes Qatar Supreme Council for Health requirements, Code of Ethics and Professional Conduct for Sonographers* in Qatar and local guidance at a facility level.

2.1.3 Provides sonography services including, but not limited to independent assessment and evaluation of patient function and structure using both standardized and non-standardized assessments.

2.2 Competency Standard 2.2: Patient Centered Care

The sonographer is responsible for ensuring that the service user is at the center of all decisions about care wherever possible.

Performance criteria:

2.2.1 Understands the need to adopt an approach which centers on the service user and establishes appropriate professional relationships in order to effectively provide service.

2.2.2 Uses formal (structured interview) or informal (conversational, narrative building) strategies to establish a comprehensive profile of the client. This should include an understanding of the values, beliefs and interests of the service user, their families and other appropriate parties.

2.2.3 Understands the need to provide service users and/or people authorized to act on their behalf with the information necessary to enable them to make informed decisions.

2.2.4 Ensures the provision of service is safe, appropriate, accurate and timely for the patient and referring physician.

2.2.5 Provides the patients and their family with clear and accurate information.

2.2.6 Treat families with care, respect and professionalism

2.3 Competency Standard 2.3: Evidence-Based Practice

Integrates best available evidence, clinical audit and research into practice to ensure quality of provision.

Performance Criteria:

2.3.1 Utilizes current evidence-base, including recent research findings, and best available evidence to guide image acquisition and measurements.

2.3.2 Incorporates credible critically appraised evidence into sonography practice and when initiating change in practice.

2.3.3 Participates in the formulation of evidence-based practice based on best available credible research and/or national and international professional consensus, guidance and audit.

2.3.4 Is aware of the role of audit and review in quality improvement and quality assurance.

2.3.5 Evaluates the efficacy and effectiveness of both new and established technologies using recognized outcome measures.

2.3.6 Participates in generating new evidence to improve quality of care through research, clinical audit and quality improvement programs.

2.4 Competency Standard 2.4: Communication and Teamwork

Uses communication skills to ensure that other members of the health care team, the patient and their family are and remain fully informed.

Performance Criteria:

2.4.1 Establishes relationships of trust, respect, honesty and empathy.

2.4.2 Gathers information about disease, but also about a patient's beliefs, concerns, expectations and illness experience.

2.4.3 Seeks out and synthesizes relevant information from other sources, such as patient's family, caregivers and other professionals.

2.4.4 Delivers information to patients and their families, colleagues, and other members of the healthcare team, in a way that is understandable, and that encourages discussion and participation in decision-making.

2.4.5 Demonstrates cultural competence across all patient groups.

2.4.6 Consistently and clearly communicates relevant, accurate and comprehensive information in verbal, written and electronic forms in a timely manner to ensure the delivery of safe, competent and ethical care.

2.4.7 Understands how communication affects engagement of service users.

2.4.8 Able to modify means of communication to take into account important variables such as age, capacity, learning and physical ability.

2.4.9 Is aware of verbal and non-verbal communication and how this can be affected by factors such as age, culture, ethnicity, gender, socio-economic status and spiritual or religious beliefs.

2.4.10 Participates in building consensus and or resolving conflict in the context of patient care and the multi-professional team.

2.4.11 Engages proactively in teamwork and the team-building processes.

2.4.12 Works effectively with other professionals to prevent, negotiate and resolve inter-professional conflict

3 DOMAIN THREE: LEADERSHIP AND MANAGEMENT

Exhibits leadership qualities required for the provision of safe, effective sonography imaging. This domain includes concordance with the Code of Ethics and Professional Conduct and the healthcare organization's Code of Behavior as the operating frameworks.

3.1 Competency Standard 3.1: Leadership

Exhibits leadership qualities and manages sonography care safely, efficiently and ethically.

Performance Criteria:

3.1.1 Applies clinical reasoning, critical thinking and problem solving skills in the provision, management and evaluation of care.

3.1.2 Manages self, and where appropriate assists others, to ensure effective workload prioritization and time management.

3.1.3 Provides feedback, offers suggestions for change and deals effectively with the impact of change on own practice, the team and/or on the organization.

3.1.4 Advocates for, and contributes to the creation and maintenance of a positive working environment and team working.

3.1.5 Participates in the mentorship and coaching of others maximizing the effectiveness of sonography imaging, the provision of quality health care and the profession.

3.1.6 Acts as a role model for colleagues, students and other members of the healthcare care team by treating all with respect, trust and dignity.

3.1.7 Fosters the advancement of Sonographer's autonomy and accountability.

3.1.8 Promotes and maintains a positive image of sonography.

3.1.9 Assumes leadership responsibilities, as appropriate, in the delivery of sonography imaging.

3.2 Competency Standard 3.2: Quality Improvement and Safety

Ensures sonography imaging practice meets organizational quality and safety standards and guidelines and participates in continuous quality improvement.

Performance criteria:

3.2.1 Practices in accordance with approved quality standards and guidelines reflecting recognized evidence based best practice.

3.2.2 Seeks evidence from a wide range of credible sources to maintain, extend and evaluate the quality of sonography imaging.

3.2.3 Acts immediately and appropriately in accordance with the national and/or institutional disaster plan as needed participating in triage and coordination of care for patients.
3.2.4 Implements quality assurance and risk management strategies.
3.2.5 Ensures a safe environment by identifying actual and potential risks and takes timely action to meet national legislation and workplace health and safety principles.
3.2.6 Acknowledges limitations in knowledge, judgment and/or skills, and functions within those limitations.
3.2.7 Recognizes less than optimum or unsafe practice in self and others and intervenes, records and reports, and acts to access and/or provides support to ensure remediation of deficiencies.
3.2.8 Participates in ongoing quality improvement and risk management initiatives.
3.2.9 Adheres to and implements infection control policies and procedures.
3.2.10 Communicates and records safety concerns to the relevant authority and documents response

3.3 Competency Standard 3.3: Delegation and Supervision

Delegates and provides supervision to team members according to their competence and scope of practice.

Performance Criteria:

3.3.1 Delegates to others, activities commensurate with their abilities and scope of practice.
3.3.2 Uses a range of supportive strategies when supervising aspects of care delegated to others.
3.3.3 Maintains accountability and responsibility when delegating aspects of care to others.

4 DOMAIN FOUR: EDUCATION, LEARNING AND DEVELOPMENT

4.1 Competency Standard 4.1: Education and Facilitation

Demonstrates commitment to the development of other members in the healthcare team, as well as patients, families, community and society.

Performance criteria:

4.1.1 Shares and disseminates professional knowledge and research findings with others.
4.1.2 Acts as a resource person for others.
4.1.3 Contributes to the formal and informal education and professional development of students and colleagues facilitating and where appropriate coordinating learning opportunities.
4.1.4 Acts as an effective preceptor and/or mentor as assigned, undertaking appropriate preparation and updating to undertake the roles.
4.1.5 Takes opportunities to learn together with others in order to contribute to health care improvement.

4.2 Competency Standard 4.2: Lifelong learning

Assumes responsibility for own professional development through lifelong learning to ensure continued competence and performance improvement.

Performance criteria:

4.2.1 Undertakes regular self-assessment and reviews own practice through reflection, peer review, competency assessment, critical examination and evaluation.
4.2.2 Instigates planned updating knowledge and skills for safe, person-centered, evidence-based practice.

4.2.3 Actively engages in ongoing professional development and performance improvement of self and others.

4.2.4 Maintains a record of learning and professional development activities and accreditation.

4.2.5 Understands the value of case discussion, clinical supervision and other methods of reflecting and reviewing practice.

5 DOMAIN FIVE: RESEARCH AND IMPROVEMENT

This domain articulates the requirement that the Sonographers should practice incorporating best available evidence to provide quality health care and contribute to the creation and/or implementation of knowledge through active participation.

5.1 Competency Standard 5.2: Using data and information systems

Uses data systems to enhance the quality and delivery of patient care.

Performance Criteria:

5.1.1 Acquires information technology skills needed to inform and provide optimum healthcare care and accurately document procedures.

5.1.2 Understands how to use technology and data to assist in problem identification and identification of deficiencies that can be remediated to enable improvements in patient care.

5.1.3 Analyses data accurately and comprehensively leading to appropriate interpretation of findings.

5.1.4 Recognizes the need to manage records and all other information in accordance with applicable legislation, protocols and guidelines.

5.2 Competency Standard 5.3: Research Participation

Uses research, evaluation, service improvement and audit findings to enhance the quality of patient care and protect the rights of those participating.

Performance Criteria:

5.2.1 Participates in activities that disseminate research findings such as publications, journal clubs, grand rounds and presentations.

5.2.2 Promotes research, evaluation, service improvement initiatives and audit, designed to improve healthcare practice and disseminate findings to colleagues, patients, families, communities, and society.

5.2.3 Undertakes appropriate development to ensure competency to recruit, ensure informed consent is obtained, support involvement, facilitate, monitor and where appropriate advocate withdrawal of individuals participating in clinical research and evaluation

Bibliography:

The American Registry of Diagnostic Medical Sonographers (ARDMS) www.ardms.org

The Society of Medical Diagnostic Sonographers (2006). Code of Ethics. www.smds.org

Criteria for National Registration Requirements - Ultrasound Technician

Criteria	Ultrasound Technician
Definition	Is a qualified health care provider, licensed and skilled in the diagnostic use of sound (sonic) waves to produce and evaluate clinical images and data under the supervision of an Ultrasound Technologist or Physician The Ultrasound Technician maintains a high degree of accuracy in ultrasound imaging and applies safety imaging precautions. The technician assesses of the condition of an individual before, during and after the imaging procedure and operates under a national authority or board that authorizes them to practice Ultrasound and use the title Ultrasound Technician.
Practice Settings	Ultrasound Technicians practice in a wide variety of settings, such as hospitals, community health settings, educational institutions, clinics, and private practice.
Education	Minimum two year diploma in Medical Imaging or Radiography or Ultrasound or Medical Technology or Ultrasound Physics or Sciences from an accredited college, school or university.
Scope of Practice	The scope of practice for the profession of the Ultrasound Technician includes the safe and effective application of competencies through the best practices encompassed in the use of sound (sonic) waves to produce diagnostic images of the internal organs and tissues. It includes the evaluation and assessment of such images through the following scope: • Works under the supervision of an Ultrasound Technologist/Sonographer or Physician. • Demonstrates professional accountability and scope of ethical and legal practice guidelines in relation to patients, families, other members of the multidisciplinary teams, community and society. • Provides medical imaging services uses the standards of accreditation and professional certification within the ethical framework, considering the socio-cultural needs of patients, families, communities and society. • Functions at all times in accordance with legislative, regulatory and policy guidelines relevant to medical imaging practice. • Applies communication skills to ensure that other members of the health care team, the patient and his family are fully informed of all the required imaging process information. • Assumes leadership responsibilities, as appropriate, in the delivery of services and health care within the Organizational mission, vision and values. • Provides a practical/professional environment that encourages continuous education of self, other imaging members as well as personal professional development and growth. • Ensures imaging practice meets organizational quality and safety standards and guidelines and participates in continuous quality improvement.

Licensure	• Professional License to practice from country of Graduation. • The Ultrasound Technician must obtain a licensure through Qatar Council for Healthcare Practitioners (QCHP).
Experience	• Minimum one (1) year experience post-graduation performing Ultrasound in a recognized Healthcare facility.
Competency validation	• Must meet entry to practice criteria as defined by Qatar Council for Healthcare Practitioners (QCHP) for the Ultrasound Technician.
Other Requirements for Evaluation & Registration	***(Refer to QCHP requirement for license Registration/Evaluation)*** http://www.qchp.org.qa/en/Pages/HowToRegisterToPracticeInQatar.aspx
Requirements for License renewal	***(Refer to QCHP requirement for license Registration/Evaluation)*** http://www.qchp.org.qa/en/Pages/HowToRegisterToPracticeInQatar.aspx

Note: Applicants with break from practice please see QCHP "Break from Practice Policy"

ULTRASOUND (US) TECHNICIAN - SCOPE OF PRACTICE

INTRODUCTION

The Ultrasound Technician Scope of Practice is based on a competency framework that comprises; **professional ethics**, **clinical practice**, **leadership and management**, **learning and development**, and **research** intrinsic to the role of the Technician. The Scope also describes the qualifications of the Ultrasound technician, professional roles and activities, and practice settings.

STATEMENT OF PURPOSE:

The purpose of this document is to define the Ultrasound Technicians' scope of practice in Qatar to:

(a) Describe the services offered by qualified Ultrasound Technicians.
(b) Define the professional accountability, required competencies, and scope of ethical and legal practice of the Ultrasound Technician in relation to patients, families, other members of the multidisciplinary team, community and society.
(c) Serve as a reference for license regulating authorities and professionals governing healthcare.

DEFINITION OF ULTRASOUND IMAGING:

Diagnostic Ultrasound is an established, effective diagnostic imaging technique that uses high-frequency sound waves for both anatomic (grayscale) and Color/Power/Spectral Doppler (anatomic and hemodynamic) evaluation. Diagnostic medical sonography is a multi-specialty profession comprised of but not limited to the following:

1. Obstetrical and gynecological ultrasound.
2. Thoracic, abdominal, and pelvic ultrasound.
3. Renal and retroperitoneal ultrasound.
4. Vascular ultrasound (carotid, abdominal, intracranial, peripheral arterial, and peripheral venous studies, including pulsed, power, and color Doppler).
5. Neurosonography.
6. Guidance of interventional biopsy and therapeutic procedures.
7. Intraoperative ultrasound.
8. Evaluation of superficial structures such as breast, thyroid, testicle, skin.
9. Endoluminal Ultrasound.
10. Cardiovascular Ultrasound
11. Ophthalmologic ultrasound.
12. Echocardiography.
13. Musculoskeletal ultrasound.
14. Other emerging clinical areas.

Ultrasound imaging is used throughout the hospital and clinic setting as this very mobile piece of equipment can be made available for use at the patient's location to help diagnose and guide treatments.

PROFESSIONAL ROLES AND ACTIVITIES:

Ultrasound technicians are registered technicians who have completed a minimum of a Diploma in Radiography or Ultrasound from a school that has been medically accredited. They have been trained to perform Ultrasound exams and encompasses all aspects of training required by a technician to perform Ultrasound procedures. Practical clinical experience is a strong focus to ensure patient safety and quality of exams.
Diagnostic Ultrasound Technicians are committed to enhanced patient care and continuous quality improvement that increases knowledge and technical competence. Ultrasound Technicians use professional, ethical judgment, and critical thinking to safely perform diagnostic sonographic procedures.
Diagnostic Ultrasound Technician Professionals are expected to work under the direction of a physician or Ultrasound Technologist to:

- Ensure the safety of their patients, co-workers and the general public at all times.
- Perform patient assessments
- Acquire and analyze data obtained using ultrasound and related diagnostic technologies
- Provide a summary of findings to the physician to aid in patient diagnosis and management
- Use a systematic problem solving methods to produce high quality diagnostic information and optimize patient care.
- Make accurate assessment & interpretation of all requests for patient procedures.
- Make rapid & sound decisions.
- Possess solid critical thinking and problem-solving skills.
- Evaluate patients to obtain a relevant history.
- Monitor a patient's status and recognize when additional intervention is necessary.

In addition to performing Ultrasound studies on patients it is essential that the Technician takes responsibility for the evaluation, implementation, maintenance and on-going quality assurance of all Ultrasound equipment.

KNOWLEDGE CRITERIA:

An understanding of the following elements, which will be the outcome of a diploma, undergraduate and/or post graduate training, are essential for individuals working in the Ultrasound area:

- The anatomy, physiology and pathophysiology of all body system.
- Pediatric Congenital Anomalies
- Cross Sectional Anatomy
- Ultrasound Physics as related to Ultrasound scanning
- Principles and practice of Ultrasound and therapeutic tests, as well as associated risks.
- The concepts of acute and chronic illness, normality and crisis states as they relate to various body function.
- Medical equipment used in ultrasound included related medical informatics systems

SPECIALTY AREAS:

The Ultrasound specialty areas of an Ultrasound Technician includes, but is not limited to:

- Pediatrics (including all body systems)
- Neonates
- Obstetrical Ultrasound Imaging
- Gynecology Ultrasound Imaging
- Vascular Ultrasound Procedures
- Adult Ultrasound Imaging

PRACTICE LIMITATIONS:

- All Ultrasound services provided by the Ultrasound Technician require Physician orders.
- Ultrasound Technicians must have training for the type of Ultrasound they are performing (Heads, abdomen, cardiovascular, or hips etc.).
- The Ultrasound technician works under the direction of a physician or Ultrasound Technologist.
- Detailed Policies and Procedures along with a Protocol manual that has outlined Ultrasound best practices using international standards and guidelines and peer-reviewed, evidence-based methodologies guides the technician practice.
- The Ultrasound Technician does not perform Interventional Ultrasound, Ultrasound Biopsies, Intraoperative Ultrasound, Elastography, Endoluminal Ultrasound, Transesophageal Ultrasound or Contrast Ultrasound exams.
- Ultrasound Technicians do not report Ultrasound studies.

COMPETENCY FRAMEWORK:

1. DOMAIN ONE: PROFESSIONAL AND ETHICAL PRACTICE

This domain defines the professional accountability and scope of ethical and legal practice of the Ultrasound Technician in relation to patients, families, other members of the multidisciplinary team, hospital, community and society as a whole.

1.1. Competency Standard 1.1: Accountability

Accepts accountability for own actions, decision making and for related outcomes while working under the direction of a physician or Ultrasound Technologist

1.1.1. Works within the limits of own competence and the boundaries of the Scope of Practice.

1.1.2. Identifies opportunities for advocacy, health promotion and disease prevention.

1.1.3. Provides care without discrimination on any basis, with respect for the rights and dignity of all individuals.

1.1.4. Encourages and promotes appropriate stewardship of resources.

1.1.5. Avoids any activity that creates a conflict of interest or violates any laws and regulations.

1.1.6. Promotes the growth of the profession and presents a positive image of Ultrasound Imaging Services.

1.2. Competency Standard 1.2: Ethical Practice

Demonstrates integrity, accountability, honors the rights and dignity of all individuals and pursues a quest for excellence in all professional activities that serve the best interests of the patient, colleagues, hospital, society and profession.

1.2.1. Engages in ethical decision-making with respect to own professional responsibilities or where ethical issues affect healthcare delivery or clinical decision-making.

1.2.2. Acts as a patient advocate protecting the person's rights in accordance with the law and organization specific terms and conditions.

1.2.3. Maintains patient confidentiality and makes every reasonable effort to ensure the security of written verbal and electronic patient information.

1.2.4. Respects the patients' right to be fully informed (including children and young people and their parents), establishing a context for self-determination, assent (children) and informed consent.

1.2.5. Acts sensitively and fairly giving due consideration to diversity, including cultural and religious beliefs, race, age, gender, physical and mental state and any other relevant factors.

1.2.6. Questions when appropriate, healthcare practice where the safety of others is at risk and where the quality of care warrants improvement; acts where the safety of care is compromised and where necessary reports others who may be risking patient safety.

1.2.7. Demonstrates professional integrity and ethical conduct in matters where a conflict of interest could be construed, i.e. when advising on the use of products or services as per organizational approved policy and codes of professional conduct and ethics for Ultrasound Technicians.

1.3. Competency Standard 1.3: Legal Practice

Functions at all times in accordance with legislative, regulatory and policy guidelines relevant to Ultrasound Technicians

1.3.1. Practices in accordance with agreed policies and procedures that guide ultrasound procedures.

1.3.2. Practices in accordance with relevant laws and regulations that govern Ultrasound scanning.

1.3.3. Maintains valid licensure to practice in Qatar

1.3.4. Recognizes and acts upon breaches of laws and regulations relating to the professional role and/or professional Code of Conduct and Ethics for Ultrasound Technicians.

2. DOMAIN TWO: CLINICAL PRACTICE

As a healthcare profession, Ultrasound Imaging is practiced under medical direction as part of the health care continuum. Critical thinking, patient/environment assessment skills and evidence-based standards and guidelines enable the Ultrasound Technician to provide appropriate and effective diagnostic testing.

2.1. Competency Standard 2.1: Core Skills - Essential Functions

2.1.1. Preparation and calibration of all equipment and instrumentation required to provide comprehensive Ultrasound Imaging.

2.1.2. Understanding of and contribution to formal Quality Assurance program for all instrumentation used for patient assessment and diagnosis.

2.1.3. Following all established evidence-based procedures for conducting Ultrasound studies.

2.1.4. Accurate data entry and record keeping for inclusion in test reports and patient medical records, including relevant patient history, referral information and observations relevant to the patient record, reporting physician, laboratory record and hospital administration.

2.1.5. Following all established hospital and Ultrasound Imaging policies and procedures for cleaning, maintenance, infection control and quality assurance.

2.1.6. Active involvement in public awareness programs and patient education as required by the hospital and Supreme Council of Health in Qatar.

2.1.7. Provide support for orientation of new employees, involvement in education and training programs of the department, hospital and relevant universities providing medical and allied health training in the state of Qatar.

2.1.8. Involvement directly or indirectly in research conducted at a unit, departmental or hospital level.

2.2. Competency Standard 2.2: Provision of Care

The provision of patient care during Ultrasound procedures involves but is not limited to:

2.2.1. The provision of service that is safe, appropriate, accurate and timely for the patient and the requesting physician.

2.2.2. The provision of Ultrasound services which meet the needs of the patient and the requesting physician in the management of disease or aiding diagnosis.

2.2.3. Observation and monitoring of patient's signs and symptoms, general behavior and physical response to Ultrasound procedures.

2.2.4. Determination of and taking action when signs, symptoms, reactions, behavior and general response exhibit abnormal characteristics or undesirable effects.

2.2.5. Taking appropriate action or intervention when abnormalities are present in reports, referrals or test methods to ensure patient safety.

2.2.6. Implementation and documentation of written or verbal orders for Ultrasound procedures.

2.3. Competency Standard 2.2: Patient Centered Care

The Ultrasound Technician collects and interprets information, makes appropriate clinical decisions and carries out diagnostic and relevant therapeutic interventions under medical supervision.

2.3.1. Treat patients and their families with care, respect and professionalism.

2.3.2. Provide patients and their families with clear and accurate information.

2.3.3. Evaluates the needs and circumstances of patients and their families for optimal compliance with the rigorous requirements for quality Ultrasound results.

2.3.4. Performs and evaluates the quality of diagnostic Ultrasound procedures.

2.3.5. Makes recommendations regarding the appropriateness of requested diagnostic tests, recommends modifications where indicated to ensure the patient receives appropriate evidence-based care.

2.3.6. Collaborates with the multidisciplinary healthcare team to ensure patient centered management and optimal treatment by providing the timeliest and effective diagnostic procedures outlined in this Scope of Practice.

2.3.7. Educates and informs the patient and family members / other caregivers as to the requirements of testing procedures and the likely patient experience.

2.3.8. Adheres to universal precautions.

2.3.9. Remains competent in Basic Life Support (BLS)

2.3.10. Applies a practical knowledge of the fundamental biomedical and technological sciences including anatomy, physiology, biochemistry, pharmacology, microbiology, pathophysiology, instrumentation and biostatistics to provide high quality and patient appropriate diagnostic testing.

2.4. Competency Standard 2.3: Evidence-Based Practice

Integrates evidence and research findings into practice and the development of new methodologies

2.4.1. Utilizes current evidence-based knowledge, including research findings, to improve the breadth and quality of diagnostic tests available.

2.4.2. Incorporates credible, critically appraised and peer-reviewed evidence into practice.

2.4.3. Participates in the formulation of evidence-based practice using the best available credible research and/or national and international professional consensus, guidance, standards and audit.

2.4.4. Disseminates personal or third party research, practice development, improved testing methodologies, new standards and audit findings with colleagues and peers in order to enhance Ultrasound procedures and improve patient care.

2.4.5. Critically evaluates research, audit and Ultrasound practice that underpin the Ultrasound service and questions existing practice and knowledge.

2.4.6. Promotes dissemination, use, monitoring and review of professional standards and best practice guidelines.

2.5. Competency Standard 2.4 Communication and Teamwork

Uses communication skills to ensure that other members of the health care team, the patient and their family are and remain fully informed.

2.5.1. Establishes relationships of trust, respect, honesty and empathy.

2.5.2. Gathers information about disease, but also about a patient's beliefs, concerns, expectations and illness experience.

2.5.3. Seeks out and synthesizes relevant information from other sources, such as patient's family, caregivers and other professionals.

2.5.4. Delivers information to patients and their families, colleagues and other members of the healthcare team, in a way that is understandable and that encourages discussion and participation in decision making.

2.5.5. Demonstrates cultural competence across all patient groups.

2.5.6. Consistently and clearly communicates relevant, accurate and comprehensive information in verbal, written and electronic forms in a timely manner to ensure the delivery of safe, competent and ethical care.

2.5.7. Participates in building consensus and or resolving conflict in the context of patient care.

2.5.8. Engages in teamwork and team-building processes.

2.5.9. Works effectively with other professionals to prevent, negotiate and resolve inter-professional conflict.

3. DOMAIN THREE: LEADERSHIP AND MANAGEMENT

Exhibits leadership qualities required for the provision of safe and effective Ultrasound procedures. This Domain includes concordance with the healthcare organization's Code of Behaviors as the operating framework as well as self-management, responsibility and contribution to team performance.

3.1. Competency Standard 3.1: Leadership

Exhibits leadership qualities and manages Ultrasound procedures and services safely, efficiently and ethically.

3.1.1. Applies clinical reasoning, critical thinking and problem solving in the provision, management and evaluation of clinical work.

3.1.2. Manages self and, where appropriate, assists others to ensure effective workload prioritization and time management.

3.1.3. Provides feedback, offers suggestions for change and deals effectively with the impact of change on own clinical work, the team and/or the organization.

3.1.4. Advocates for, and contributes to, the creation and maintenance of a positive working environment and team working.

3.1.5. Acts as a role model for colleagues, students and other members of the healthcare team by treating all with respect, trust and dignity.

3.1.6. Fosters the advancement of the profession, tis autonomy and accountability.

3.1.7. Promotes and maintains a positive image of the profession.

3.1.8. Assumes leadership responsibilities as appropriate in the performance of duties.

3.2. Competency Standard 3.2: Quality Improvement and Safety

Ensures work practices meet professional and organizational quality and safety standards, guidelines and participates in continuous quality improvement.

3.2.1. Works in accordance with approved quality standards and guidelines reflecting recognized evidence-based best practice.

3.2.2. Seeks evidence from a wide range of credible sources to maintain, extend and evaluate the quality of Ultrasound Imaging.

3.2.3. Acts immediately and appropriately in accordance with the national and/or institutional disaster plan as needed.

3.2.4. Ensures a safe work environment by identifying actual and potential risks and takes timely action to meet national legislative and workplace health and safety principles.

3.2.5. Acknowledges own limitations in knowledge, judgment and/or skills and functions within those limitations.

3.2.6. Recognizes less than optimum or unsafe practice in self and others and intervenes, records and reports and acts to access or provide support for remediation of deficiencies.

3.2.7. Participates in ongoing quality improvement and risk management initiatives.

3.2.8. Adheres to and implements infection control policies and procedures.

3.2.9. Communicates and records safety concerns to the relevant authority and documents response.

4. DOMAIN FOUR: EDUCATION, LEARNING AND DEVELOPMENT

This Domain defines the responsibilities for the continuing professional development of the Unit, team and self.

4.1. Competency Standard 4.1: Education and Facilitation

Demonstrates a commitment to the development of other members of the health care team, as well as patients, families, the organization, community and society.
Shares and disseminates professional knowledge and research findings with others.

4.1.1. Acts as a resource person for others.

4.1.2. Contributes to the formal and informal education and professional development of students and colleagues facilitation and where appropriate coordinating learning opportunities.

4.1.3. Acts as an effective preceptor and/or mentor as assigned, using appropriate preparation and updating to undertake the roles.

4.1.4. Takes opportunists to learn together with others in order to contribute to healthcare improvement.

4.2. Competency Standard 4.2: Lifelong Learning

Assumes responsibility for own professional development through lifelong learning to ensure continued competence and performance improvement.

4.2.1. Undertakes regular self-assessment and reviews own work practices through reflection, peer review, competency assessment, critical examination and evaluation.

4.2.2. Instigates planned updating of knowledge and skills for safe, patient-centered, evidence-based practice.

4.2.3. Actively engages in ongoing professional development and performance improvement of self and others.

4.2.4. Maintains a record of learning and professional development activities and accreditation.

4.3. Competency Standard 4.3: Health Promotion and Patient Education

Will enable and provide information on maintaining and optimizing health and maximizing self-care.

4.3.1. Takes part in relevant health promotion, patient education and illness prevention initiatives and contributes to their evaluation.

4.3.2. Applies knowledge of resources available for health promotion and health education.

4.3.3. Acts to empower the individual, family and community to adopt healthy lifestyles and concord with self-management of ill-health to promote wellbeing.

4.3.4. Provides relevant health information and patient education to individuals, families and communities to assist in achieving optimal health and rehabilitation.

4.3.5. Recognizes the potential for patient education and teaching for health and wellbeing within the course of work duties.

4.3.6. Applies knowledge of a variety of teaching and learning strategies with individuals, families and communities to effect and evaluate learning and concordance treatment and advice.

5. DOMAIN FIVE: RESEARCH AND IMPROVEMENT

This Domain articulates the requirement that the Ultrasound Technician should practice incorporating best available evidence to provide quality healthcare and contribute to the creation and/or implementation of knowledge through active participation by involvement and/or leadership in research and improvement activities.

5.1. Competency Standard 5.1: Using Data and Information Systems

Uses data systems to enhance the quality of measurement, improve services to patients and advance the level of research.

5.1.1. Acquires the information technology skills needed to inform and provide optimum healthcare, accurately document outcomes and ensure data integrity for medical records and research opportunities.

5.1.2. Understands how to use technology and data to assist in the identification of problems and deficiencies that can be remediated to enable improvements in work practices, measurement and patient care.

5.1.3. Analyses data accurately and comprehensively, leading to appropriate interpretation of findings and the development of plans for data usage.

5.2. Competency Standard 5.2: Research Participation

Uses research, evaluation, service improvement and audit findings to enhance the quality of measurement, patient care and protect the rights of those participating.

5.2.1. Participates in activities that disseminate research findings such as publications, journal clubs, grand rounds and presentations.

5.2.2. Promotes research, evaluation, service improvement initiatives and audit, designed to improve work quality and healthcare practice and disseminate findings to colleagues, patients, families, communities and society.

5.2.3. Undertakes appropriate development to ensure competency to ensure informed consent is obtained, support involvement, monitor and where appropriate advocate withdrawal of individuals participating in clinical research and evaluation.

References:

Society of Diagnostic Medical Sonography
https://www.sdms.org
American College of Radiology (ACR)
https://www.acr.org
American Institute of Ultrasound in Medicine (AIUM)
https://www.aium.org

Criteria for National Registration Requirements – Nuclear Medicine Technologist

Criteria	Nuclear Medicine Technologist
Definition	Is a qualified health care provider, licensed and skilled in the diagnostic and therapeutic use of a gamma, alpha and beta energy forms to produce and evaluate clinical images and data related to the procedures. They maintain a high degree of accuracy in imaging positioning and exposure technique, safety imaging precautions and the assessment of the condition of an individual before, during and after the imaging procedure under a national authority or board that authorizes them to practice Nuclear Medicine and use the title Nuclear Medicine Technologist.
Practice Settings	Nuclear Medicine Technologists practice in a wide variety of settings, such as hospitals, community health settings, educational institutions, research facilities, and clinics.
Education	Bachelor Degree in Nuclear Medicine Technology/Molecular Imaging. or Associate Degree or Diploma in Nuclear Medicine/Molecular Imaging Radiology Science in addition to successful completion of a National licensure in Nuclear Medicine examination from an internationally recognized licensing body. or Bachelor degree in Radiology Science with postgraduate qualifications in Nuclear Medicine Technology
Scope of Practice	The scope of practice for the Nuclear Medicine Technologist includes the safe and effective application of competencies through the best practices encompassed in the use of gamma, alpha and beta energy forms. It involves producing diagnostic images and performing diagnostic and therapeutic procedures, as well as the evaluation and assessment of such images and therapeutic applications through the following scope: • Demonstrates professional accountability and scope of ethical and legal practice guidelines in relation to patients, families, other members of the multidisciplinary teams, community and society. • Provides Nuclear medicine/Molecular imaging and/or PET services using the standards of accreditation and professional certification within the ethical framework, considering the socio-cultural needs of patients, families, communities and society. • Functions at all times in accordance with legislative, regulatory and policy guidelines relevant to their Radiology/medical imaging practice.

Scope of Practice Cont'd….	• Applies communication skills to ensure that other members of the health care team, the patient and his family are fully informed of all the required imaging process information. • Assumes leadership responsibilities, as appropriate, in the delivery of services and health care within the Organizational mission, vision and values. • Provides a practical/professional environment that encourages continuous education of self, other imaging members as well as personal professional development and growth. • Ensures imaging practice meets organizational quality and safety standards and guidelines and participates in continuous quality improvement and research. • Practice within the scope of their expertise and training.
Licensure	• License of professional practice at the country of work or graduation. • The Nuclear Medicine Technologist must obtain licensure through Qatar Council for Healthcare Practitioners (QCHP).
Experience	• Minimum: 2 years clinical Nuclear Medicine experience in a recognized Hospital/Healthcare facility. (May include 1 year clinical internship, plus 1 year post graduate clinical experience). • Newly graduates from a recognized academic program for Qatari Nationals and long term residents as per QCHP Circular No.1/2016.
Competency Validation	• Must meet entry to practice criteria according to the proposed Scope of practice and competency requirement for Nuclear Medicine Technologist
Other Requirement for Evaluation & Registration	***(Refer to QCHP requirements for license Registration/Evaluation)*** http://www.qchp.org.qa/en/Pages/HowToRegisterToPracticeInQatar.aspx
Requirements for License Renewal	***(Refer to QCHP requirements for license Registration/Evaluation)*** http://www.qchp.org.qa/en/Pages/HowToRegisterToPracticeInQatar.aspx
Note: Applicants with a break from practice please see QCHP "Break from Practice Policy".	

Nuclear Medicine Technologist Scope of Practice

INTRODUCTION

The Nuclear Medicine Technologist's scope of practice is based on a competency framework that comprises **professional ethics, clinical practice, leadership and management, learning and management** and **research** domains intrinsic to the role of the Nuclear Medicine Technologist. The scope also describes the professional roles and activities and practice settings for the nuclear medicine technologist profession. This document sets out the standards of proficiency required for safe and effective practice in the Nuclear Medicine profession. They are the threshold standards necessary to protect members of the public. Once on the Qatar Supreme Council for Health Professionals Register the licensed professional must continue to meet the standards of proficiency which relate to the areas in he/she works. Periodic updating of the scope of practice statement and standards of proficiency will be necessary as technology and perspective change.

Nuclear Medicine Technologists, as autonomous professionals, have the freedom to exercise their professional judgment and decision making, wherever they practice, so long as this is within the technologist's knowledge, competence and scope of practice. A licensed professional's scope of practice will change over time and the scope of a more experienced Nuclear Medicine Technologist may become narrower and more focused with increased specialization. A Nuclear Medicine Technologist's individual scope of practice may mean that she/he is unable to continue to practice safely across the whole scope of the Nuclear Medicine profession. However, as long as the professional practices safely and effectively within his/her individual scope and does not practice in areas she/he is no longer proficient to do so, no problems will arise. If a licensed professional moves outside of the traditional scope of practice of the Nuclear Medicine profession such as occurs in extended scope practice the licensed professional is responsible for ensuring that this is within their knowledge, skills and expertise so that they continue to work safely, lawfully and effectively. The licensed professional must have evidence of advanced competencies in order to address responsibilities that extend beyond traditional boundaries of Nuclear Medicine advanced practice.

STATEMENT OF PURPOSE:

The purpose of this document is to define Nuclear Medicine Technologists' scope of practice in Qatar to:

(a) Describe the services offered by qualified Nuclear Medicine Technologists.

(b) Define the professional accountability, required competencies, and scope of ethical and legal practice of the Nuclear Medicine in relation to patients, families, other members of the multidisciplinary team, community and society.

(c) Serve as a reference for license regulating authorities and professionals governing healthcare.

DEFINITION OF NUCLEAR MEDICINE:

Nuclear Medicine also known as Molecular Imaging (and includes Positron Emission Tomography **(PET))** is the effective application of different forms of energy (defined in appendix A) to safely and accurately produce clinical images of the body anatomy and function for diagnostic, therapeutic and interventional purposes and the assessment and evaluation of such images to aid the health care provider to assess and manage diseases, injuries and treatments. This medical specialty involving the application of radioactive substances in the diagnosis and treatment of disease are usually conducted by nuclear medicine technologists.

PROFESSIONAL ROLES AND ACTIVITIES:

A Nuclear Medicine Technologist is a qualified healthcare provider, working under minimal supervision to safely produce and evaluate diagnostic and therapeutic clinical images and data related to the procedures, of a variety of energy forms (defined in appendix A) in different health care settings for patients of all ages maintaining high degree of accuracy in imaging positioning and exposure technique, safety imaging precautions and the assessment of the condition of an individual for imaging study before, during and after the imaging procedure.

The Nuclear Medicine Technologist also provides mentorship and coaching for others to enhance the effectiveness of the provision of quality healthcare within competencies framework and evidence based practices. The Nuclear Medicine Technologist works with a Nuclear Medicine physician ensure the safety and effectiveness of Nuclear Medicine services provided. The Nuclear Medicine Technologists may practice at different levels of practice based on their competencies and job profiles.

Activities of Nuclear Medicine practice include but are not limited to:

- Performs diagnostic and therapeutic Nuclear Medicine and PET procedures indicated by their own competency.
- Reconfirms patient identification and verifies the procedure requested or prescribed.
- Corroborating patient's clinical history with procedure, ensuring information is documented and available.
- Preparing the patient for procedures, providing instructions to obtain desired results, gaining cooperation, and minimizing anxiety.
- Selecting and operating imaging equipment, and/or associated accessories to successfully perform Nuclear Medicine procedures.
- Prepares radiopharmaceuticals and determines correct patient dosages.
- Calibrates Nuclear Medicine equipment.
- Injects patients with Radiopharmaceuticals
- Performs image post processing, storage and transmission when applicable.
- Positioning patient to best demonstrate anatomic area of interest, respecting patient ability and comfort.
- Determines whether the patient has been prepared for the procedure.
- Determining proper imaging protocol and exposure factors combinations.
- Applying principles of radiation protection to minimize exposure to patient, self, and others.
- Evaluating images for technical quality.
- Providing practical instruction for students and/or other health care professionals.
- Assesses factors that may contraindicate the procedure, such as medications, patient history.
- Recognizes signs and symptoms of an emergency.
- Assesses patient risk for allergic reaction to contrast media prior to administration.
- Locates and reviews previous examinations for comparison when applicable.
- Receives, relays and documents verbal and/or telephone orders in the patient's chart where stated within institutional policy.
- Identifies and removes artifact-producing objects such as dentures, telemetry units, chest leads, jewelry, and hearing aids.

- Directs and advises patients for post imaging procedures care

COMPETENCY FRAMEWORK

1- DOMAIN ONE: PROFESSIONAL AND ETHICAL PRACTICE

This domain defines the professional accountability and scope of ethical and legal practice of the Nuclear Medicine Technologist in relation to patients, families, other members of the multidisciplinary team, community and society.

1.1 Competency Standard: Accountability

Accepts accountability for own actions, and decision-making and for the related outcomes.

Performance criteria:

1.1.1 Works within the limits of own competence and the boundaries of personal and professional Scope of Practice.
1.1.2 Identifies opportunities for advocacy, health promotion and disease prevention.
1.1.3 Provides care without discrimination on any basis, with respect for the rights and dignity of all individuals.
1.1.4 Encourages and promotes appropriate stewardship of resources.
1.1.5 Avoids any activity that creates a conflict of interest or violates any Qatari laws and regulations.
1.1.6 Promotes the growth of the profession, and presents a positive image of a Nuclear Medicine Technologist to the community.

1.2 Competency Standard : Ethical Practice

Demonstrates integrity, accountability, honors the rights and dignity of all individuals, and pursues a quest for excellence in all professional activities that serve the best interests of the patient, society, and the profession.

Performance criteria:

1.2.1 Engages in ethical decision-making with respect to own professional responsibilities or where ethical issues affect healthcare delivery or clinical decision-making.
1.2.2 Acts as patient advocate protecting the person's rights in accordance with Qatari law and organization specific terms and conditions.
1.2.3 Maintains patient confidentiality and makes every reasonable effort to ensure the security of written, verbal and electronic patient information.
1.2.4 Respects the patient's (including children and young people and their parents') right to be fully informed, establishing a context for self- determination, assent (children) and informed consent.
1.2.5 Acts sensitively and fairly giving due consideration to diversity, including cultural and religious beliefs, race, age, gender, physical and mental state, and other relevant factors.
1.2.6 Questions when appropriate, healthcare practice where the safety of others is at risk and where the quality of care warrants improvement; acts where the safety of care is compromised and where necessary reports others who may be risking patient safety.

1.2.7 Demonstrates professional integrity and ethical conduct in matters where a conflict of interest could be construed, i.e. when advising on the use of drugs, products, devices or services (as per organizational approved policy and Code of Ethics and Professional Conduct for Nuclear Medicine Technologists*).

((Code of Ethics and Professional Conduct for Nuclear Medicine Technologists In State of Qatar must be developed))

1.3 Competency Standard: Legal Practice

Functions at all times in accordance with legislative, regulatory and policy guidelines relevant to Nuclear Medicine practice in Qatar.

Performance criteria:

1.3.1 Practices in accordance with agreed policies and procedures that guide Nuclear Medicine practice.
1.3.2 Practices in accordance with relevant State of Qatar laws and regulations that impact Nuclear Medicine practice.
1.3.3 Maintains valid registration and licensure to practice in Qatar.
1.3.4 Recognizes and acts upon breaches of laws and regulations relating to the professional role and/or Code of Ethics and Professional Conduct for Nuclear Medicine Technologists.
1.3.5 Maintains a professional portfolio including evidence of continued competence and improvement.

2 DOMAIN TWO: CLINICAL PRACTICE

As a healthcare profession, Nuclear Medicine is practiced in partnership with members of the Inter professional team, service users, support staff and others in order to deliver collaborative care across the healthcare continuum. Critical thinking, patient and environment assessment skills and evidence based clinical practice guidelines enable Nuclear Medicine Technologists to help develop and implement Nuclear Medicine driven protocols.

2.1 Competency Standard: Provision of Care

Nuclear Medicine Technologists serve a diverse population and may function in one or more of a variety of activities. The practice of Nuclear Medicine includes but is not limited to preparation of radiopharmaceuticals, delivery of radiopharmaceuticals to the patients and imaging of various types of patients.

Performance criteria:

2.1.1 Maintains the provision of Nuclear Medicine services that are safe, aseptic, preventative and restorative to the patient.
2.1.2 Keeps accurate, contemporaneous, comprehensive and legible records of patient care activities in accordance with applicable legislation, protocols and guidelines. This includes Qatar Supreme Council for Health requirements, Code of Ethics and Professional Conduct for Nuclear Medicine Technologists* in Qatar and local guidance at a facility level.
2.1.3 Performs Nuclear Medicine procedures including, but not limited to injections, acquiring images, post processing images and using standardized protocols and evidence based practices.

2.2 Competency Standard: Patient Centered Care

The Nuclear Medicine Technologist is responsible for ensuring that the service user is at the center of all decisions about care wherever possible.

Performance criteria:

2.2.1 Understands the need to adopt an approach which centers on the service user and establishes appropriate professional relationships in order to motivate and involve the service user in meaningful occupation.
2.2.2 Synthesizes information from the patient and family to provide what they require for the best experience for the patient.
2.2.3 Understands the need to provide service users and/or people authorized to act on their behalf with the information necessary to enable them to make informed decisions.
2.2.4 Provides appropriate education and training for service users, families and caregivers.
2.2.5 Uses and approaches the exam from the patient's perspective and provides the necessary supports to engage the patient in their procedure.
2.2.6 Understands the need to engage service users and care-givers in the patient's exam.

2.3 Competency Standard: Evidence-Based Practice

Integrates best available evidence, clinical audit and research into practice to ensure quality of provision.

Performance Criteria:

2.3.1 Utilizes current evidence-base, including recent research findings, and best available evidence to guide Nuclear Medicine practice.
2.3.2 Incorporates credible critically appraised evidence into Nuclear Medicine practice and when initiating change in practice.
2.3.3 Participates in the formulation of evidence-based practice based on best available credible research and/or national and international professional consensus, guidance and audit.
2.3.4 Gathers and uses information, including qualitative and quantitative data in order to evaluate outcomes for services users engaged in Nuclear Medicine care.
2.3.5 Is aware of the role of audit and review in quality improvement and quality assurance.
2.3.6 Evaluates the efficacy and effectiveness of both new and established interventions and technologies using recognized outcome measures.
2.3.7 Participates in generating new evidence to improve quality of care through research, clinical audit and quality improvement programs.

2.4 Competency Standard : Communication and Teamwork

Uses communication skills to ensure that other members of the health care team, the patient and their family are and remain fully informed.

Performance Criteria:

2.4.1 Establishes relationships of trust, respect, honesty and empathy.

2.4.2 Gathers information about disease, but also about a patient's beliefs, concerns, expectations and illness experience.

2.4.3 Seeks out and synthesizes relevant information from other sources, such as patient's family, caregivers and other professionals.

2.4.4 Delivers information to patients and their families, colleagues, and other members of the healthcare team, in a way that is understandable, and that encourages discussion and participation in decision-making.

2.4.5 Demonstrates cultural competence across all patient groups.

2.4.6 Consistently and clearly communicates relevant, accurate and comprehensive information in verbal, written and electronic forms in a timely manner to ensure the delivery of safe, competent and ethical care.

2.4.7 Understands how communication affects engagement of service users.

2.4.8 Able to modify means of communication to take into account important variables such as age, capacity, learning and physical ability.

2.4.9 Shows awareness of verbal and non-verbal communication and how this can be affected by factors such as age, culture, ethnicity, gender, socio-economic status and spiritual or religious beliefs.

2.4.10 Participates in building consensus and or resolving conflict in the context of patient care and the multi-professional team.

2.4.11 Engages proactively in teamwork and the team-building processes.

2.4.12 Works effectively with other professionals to prevent, negotiate and resolve inter-professional conflict.

3 DOMAIN THREE: LEADERSHIP AND MANAGEMENT

Exhibits leadership qualities required for the provision of safe, effective Nuclear Medicine care. This domain includes concordance with the Code of Ethics and Professional Conduct and the healthcare organization's Code of Behavior as the operating frameworks.

3.1 Competency Standard: Leadership

Exhibits leadership qualities and manages Nuclear Medicine care safely, efficiently and ethically.

Performance Criteria:

3.1.1 Applies clinical reasoning, critical thinking and problem solving skills in the provision, management and evaluation of care.

3.1.2 Manages self, and where appropriate assists others, to ensure effective workload prioritization and time management.

3.1.3 Provides feedback, offers suggestions for change and deals effectively with the impact of change on own practice, the team and/or on the organization.

3.1.4 Advocates for, and contributes to the creation and maintenance of a positive working environment and team working.

3.1.5 Participates in the mentorship and coaching of others maximizing the effectiveness of Nuclear Medicine interventions, the provision of quality health care and the profession.

3.1.6 Acts as a role model for colleagues, students and other members of the healthcare care team by treating all with respect, trust and dignity.
3.1.7 Fosters the advancement of Nuclear Medicine autonomy and accountability.
3.1.8 Promotes and maintains a positive image of Nuclear Medicine.
3.1.9 Assumes leadership responsibilities, as appropriate, in the delivery of Nuclear Medicine care.

3.2 Competency Standard Quality Improvement and Safety

Ensures Nuclear Medicine practice meets organizational quality and safety standards and guidelines and participates in continuous quality improvement.

Performance criteria:

3.2.1 Practices in accordance with approved quality standards and guidelines reflecting recognized evidence based best practice.
3.2.2 Seeks evidence from a wide range of credible sources to maintain, extend and evaluate the quality of Nuclear Medicine Procedures.
3.2.3 Acts immediately and appropriately in accordance with the national and/or institutional disaster plan as needed participating in triage and coordination of care for patients.
3.2.4 Implements quality assurance and risk management strategies.
3.2.5 Ensures a safe environment by identifying actual and potential risks and takes timely action to meet national legislation and workplace health and safety principles.
3.2.6 Acknowledges limitations in knowledge, judgment and/or skills, and functions within those limitations.
3.2.7 Recognizes less than optimum or unsafe practice in self and others and intervenes, records and reports, and acts to access and/or provides support to ensure remediation of deficiencies.
3.2.8 Participates in ongoing quality improvement and risk management initiatives.
3.2.9 Adheres to and implements infection control policies and procedures.
3.2.10 Communicates and records safety concerns to the relevant authority and documents response.

3.3 Competency Standard : Delegation and Supervision

Delegates and provides supervision to team members according to their competence and scope of practice.

Performance Criteria:

3.3.1 Delegates to others, activities commensurate with their abilities and scope of practice.
3.3.2 Uses a range of supportive strategies when supervising aspects of care delegated to others.
3.3.3 Maintains accountability and responsibility when delegating aspects of care to others.

4 DOMAIN FOUR: EDUCATION, LEARNING AND DEVELOPMENT

4.1 Competency Standard : Education and Facilitation

Demonstrates commitment to the development of other members in the healthcare team, as well as patients, families, community and society.

Performance criteria:

4.1.1 Shares and disseminates professional knowledge and research findings with others.
4.1.2 Acts as a resource person for others.
4.1.3 Contributes to the formal and informal education and professional development of students and colleagues facilitating and where appropriate coordinating learning opportunities.
4.1.4 Acts as an effective preceptor and/or mentor as assigned, undertaking appropriate preparation and updating to undertake the roles.
4.1.5 Takes opportunities to learn together with others in order to contribute to health care improvement.

4.2 Competency Standard: Lifelong learning

Assumes responsibility for own professional development through lifelong learning to ensure continued competence and performance improvement.

Performance criteria:

4.2.1 Undertakes regular self-assessment and reviews own practice through reflection, peer review, competency assessment, critical examination and evaluation.
4.2.2 Instigates planned updating knowledge and skills for safe, person-centered, evidence-based practice.
4.2.3 Actively engages in ongoing professional development and performance improvement of self and others.
4.2.4 Maintains a record of learning and professional development activities and accreditation commensurate with the SCH continuing professional development standards.
4.2.5 Understands the value of case discussion, clinical supervision and other methods of reflecting and reviewing practice.

5 DOMAIN FIVE: RESEARCH AND DEVELOPMENT

This domain articulates the requirement that the Nuclear Medicine Technologist should practice incorporating best available evidence to provide quality health care and contribute to the creation and/or implementation of knowledge through active participation.

5.1 Competency Standard : Using data and information systems

Uses data systems to enhance the quality and delivery of patient care.

Performance Criteria:

5.1.1 Acquires and demonstrates information technology skills needed to inform and provide optimum healthcare and accurately document outcomes of interventions.
5.1.2 Understands how to use technology and data to assist in problem identification and identification of deficiencies that can be remediated to enable improvements in patient care.
5.1.3 Analyses data accurately and comprehensively leading to appropriate interpretation of findings and development of implementation plans.

5.1.4 Recognizes the need to manage records and all other information in accordance with applicable legislation, protocols and guidelines.

5.2 Competency Standard : Research Participation

Uses research, evaluation, service improvement and audit findings to enhance the quality of patient care and protect the rights of those participating.

Performance Criteria:

5.2.1 Participates in activities that disseminate research findings such as publications, journal clubs, grand rounds and presentations.

5.2.2 Promotes research, evaluation, service improvement initiatives and audit, designed to improve healthcare practice and disseminate findings to colleagues, patients, families, communities, and society.

5.2.3 Undertakes appropriate development to ensure competency to recruit, ensure informed consent is obtained, support involvement, facilitate, monitor and where appropriate advocate withdrawal of individuals participating in clinical research and evaluation.

References

- The College of Radiographers – United Kingdom
- The Society of Radiographers – United Kingdom
- Health Professions Council – United Kingdom
- American Society of Radiologic Technologists – United States of America
- Canadian Association of Medical Radiation Technologists - Canada
- Australian Institute of Radiography – Australia

Criteria for National Registration Requirements – Cardiovascular Technologist

Criteria	Cardiovascular Technologist
Definition	The Cardiovascular Technologist is a qualified health care provider, licensed and skilled in Cardiac Technology who holds a current valid certification, license or registration in Cardiac Electrophysiology or Cardiovascular Technology by a national authority or board specializing in Cardiac Rhythm Management or Cardiac Technology
Practice Settings	Cardiovascular Technologists practice in outpatient Cardiology clinics, surgery facilities, hospital inpatient units, Cardiac Catheterization laboratories and Cardiac Electrophysiology laboratories.
Education	• Bachelor's Degree in Science OR • Bachelor Science in Physiology, or other health related field AND • Completion of a National Registry exam by Cardiovascular Credentialing International (CCI), Cardiovascular Technology, Cardiac Electrophysiology, or equivalent cardiovascular national, regional, and international credential boards.
Scope of Practice	Cardiovascular technologists will utilize evidence based best practices to provide a safe and effective application of their professional competencies to perform duties as directed by the Cardiologist in the acquisition of angiographic images as well as stimulating and recording the electrical activity of the heart. In addition to assisting the Cardiologist with Invasive and Non-Invasive procedures, the technologist will: • Perform patient assessments • Acquire and analyze data obtained using electrical stimulation, electrical recording, and angiographic images. • Provide a summary of findings to the physician to aid in diagnosis and treatment. • Use judgment and systematic problem solving methods to produce high quality diagnostic information and optimize patient care in coordination with the physician. • Function at all times in accordance with legislative, regulatory and policy guidelines relevant to invasive Cardiovascular Technology practice. • Apply communication skills to ensure that other members of the health care team, the patient and his family are fully informed of all the required imaging process information. • Practice within the scope of their expertise and training.
Licensure	The Cardiovascular technologist must apply for licensure through Qatar Council For Healthcare Practitioners (QCHP).
Experience	• Three (3) years' experience in invasive cardiovascular laboratory post-graduation. • Newly graduates for Qatari National and Long term residents as per QCHP Circular No.1/2016

Competency validation	• Competency related to the use of all the required equipment relevant to the practice of Cardiovascular Technology will be validated through the verification of education (degree), certificates and relevant clinical experience. • Competency is validated by passing the QCHP Licensing Exam (if applicable). • Require to provide evidence of fulfilling Continuing Professional Development credit requirement as per QCHP Circular No. I (2014) as applicable to the profession.
Others Requirement for Evaluation & Registration	***(Refer to QCHP requirement for license Registration/Evaluation)*** http://www.qchp.org.qa/en/Pages/HowToRegisterToPracticeInQatar.aspx
Requirements for License renewal	***(Refer to QCHP requirement for license Registration/Evaluation)*** http://www.qchp.org.qa/en/Pages/HowToRegisterToPracticeInQatar.aspx
Note: Applicant with break from practice please see QCHP "Break from Practice Policy"	

Cardiovascular Technologist's Scope of Practice

INTRODUCTION

The Cardiovascular Technologist's scope of practice is based on a competency framework that comprises **professional ethics, clinical practice, leadership and management, learning and management** and **research** domains intrinsic to the role of the Cardiovascular Technologist. The scope also describes the professional roles and activities and practice settings for the Cardiovascular Technologist's profession. This document sets out the standards of proficiency required for safe and effective practice in the Cardiovascular Technologist's profession. They are the threshold standards necessary to protect members of the public. Once on the Qatar Supreme Council for Health Professionals Register, the licensed professional must continue to meet the standards of proficiency which relate to the areas in he/she works. Periodic updating of the scope of practice statement and standards of proficiency will be necessary as technology and perspective change.

Cardiovascular Technologists may exercise their professional judgment and decision making, wherever they practice, so long as this is within the technologist's knowledge, competence and scope of practice. A licensed professional's scope of practice may change over time and the scope of a more experienced Cardiovascular Technologist's may become narrower and more focused with increased specialization. The licensed professional must have evidence of advanced competencies in order to address responsibilities that extend beyond traditional boundaries of cardiovascular technology advanced practice.

STATEMENT OF PURPOSE:

The purpose of this document is to define Cardiovascular Technologist's scope of practice in Qatar to:

(a) Describe the services offered by qualified Cardiovascular Technologists.

(b) Define the professional accountability, required competencies, and scope of ethical and legal practice of the Cardiovascular Technologists in relation to patients, families, other members of the multidisciplinary team, community and society.

(c) Serve as a reference for license regulating authorities and professionals governing healthcare.

DEFINITION OF CARDIOVASCULAR TECHNOLOGY:

Cardiovascular Technology: The Cardiovascular/Electrophysiology Laboratory and Cardiology clinic are two of the most unique medical environments in existence today. The goal of the Cardiovascular/Electrophysiology lab is to perform diagnostic exams to obtain sufficient and valid data (hemodynamic, electro physiologic and angiographic) and then to perform interventional/therapeutic procedures to treat cardiac disease while maintaining maximal patient safety and comfort. The Cardiology clinic provides a venue for Pacemaker/Defibrillator device interrogation and programming, Tilt table testing for syncope, Ambulatory heart rhythm monitoring, and cardiopulmonary stress testing.

PROFESSIONAL ROLES AND ACTIVITIES:

Cardiovascular Technologists perform electrocardiograms, point of care activities, act as scrub assistants, operate imaging equipment, circulate procedures, prepare patients for sterile procedures, and perform and assist with tilt table and cardiopulmonary stress tests. They review patient files and must be familiar with basic cardiac conditions in order to recognize and identify any abnormalities.

While Cardiovascular Technologists do not themselves diagnose patients, they work with physicians in doing so or may assist in other diagnostic procedures. Other duties may include scheduling appointments, explaining procedures to patients and maintaining cardiac equipment.

Activities of the Cardiovascular Technologists include, but are not limited to:

- Equipment calibration
- Discusses and determines the pathology and imaging technique with the surgeon and cardiologist
- Visits the patient and family to introduce themselves, explains what the patient can expect and to obtain relevant medical history
- Equipment set-up
- Data measurement and acquisition
- Documentation throughout the procedure, relevant physiological readings, technical troubleshooting and monitoring changes
- Removes and cleans equipment according to the institutional infection control policy and/or protocol
- Provides preliminary reports on the technical portion of the test according to facility policy and/or protocol
- Ensures proper storage and/or archiving of images
- Assists Cardiologist as scrub assistant
- Uses hemostasis devices or manual occlusive pressure to achieve hemostasis post procedurally
- Operates cardiac stimulator and radiofrequency energy generators
- Operates contrast injector
- Operates intravascular ultrasound and intra-cardiac ultrasound imaging devices
- Obtains and analyzes blood samples

COMPETENCY FRAMEWORK

1 DOMAIN ONE: PROFESSIONAL AND ETHICAL PRACTICE

This domain defines the professional accountability and scope of ethical and legal practice of the Cardiovascular Technologists in relation to patients, families, other members of the multidisciplinary team, community and society.

1.1 Competency Standard 1.1: Accountability

Accepts accountability for own actions, and decision-making and for the related outcomes.

Performance criteria:

1.1.1 Works within the limits of own competence and the boundaries of personal and professional Scope of Practice.

1.1.2 Identifies opportunities for advocacy, health promotion and disease prevention.

1.1.3 Provides care without discrimination on any basis, with respect for the rights and dignity of all individuals.

1.1.4 Encourages and promotes appropriate stewardship of resources.

1.1.5 Avoids any activity that creates a conflict of interest or violates any Qatari laws and regulations.

1.1.6 Promotes the growth of the profession, and presents a positive image of cardiovascular technology to the community.

1.2 Competency Standard 1.2: Ethical Practice

Demonstrates integrity, accountability, honors the rights and dignity of all individuals, and pursues a quest for

excellence in all professional activities that serve the best interests of the patient, society, and the profession.

Performance criteria:

1.2.1 Engages in ethical decision-making with respect to own professional responsibilities or where ethical issues affect healthcare delivery or clinical decision-making.

1.2.2 Acts as patient advocate protecting the person's rights in accordance with Qatari law and organization specific terms and conditions.

1.2.3 Maintains patient confidentiality and makes every reasonable effort to ensure the security of written, verbal and electronic patient information.

1.2.4 Respects the patient's (including children and young people and their parents') right to be fully informed, establishing a context for self- determination, assent (children) and informed consent.

1.2.5 Acts sensitively and fairly giving due consideration to diversity, including cultural and religious beliefs, race, age, gender, physical and mental state, and other relevant factors.

1.2.6 Questions when appropriate, healthcare practice where the safety of others is at risk and where the quality of care warrants improvement; acts where the safety of care is compromised and where necessary reports others who may be risking patient safety.

1.2.7 Demonstrates professional integrity and ethical conduct in all matters (as per organizational approved policy).

1.3 Competency Standard 1.3: Legal Practice

Functions at all times in accordance with legislative, regulatory and policy guidelines relevant to cardiovascular technology practices in Qatar.

Performance criteria:

1.3.1 Practices in accordance with agreed policies and procedures that guide cardiovascular technology practice.

1.3.2 Practices in accordance with relevant State of Qatar laws and regulations that impact cardiovascular technology practice.

1.3.3 Maintains valid registration and licensure to practice in Qatar.

1.3.4 Recognizes and acts upon breaches of laws and regulations relating to the professional role.

1.3.5 Maintains a professional portfolio including evidence of continued competence and improvement.

2 DOMAIN TWO: CLINICAL PRACTICE

As a healthcare profession, cardiovascular technology is practiced in partnership with members of the inter professional team, service users, support staff and others in order to deliver collaborative care across the healthcare continuum. Critical thinking, patient and environment assessment skills and evidence-based clinical practice guidelines enable cardiovascular technologists to autonomously develop and implement cardiovascular technology driven protocols.

2.1 Competency Standard 2.1: Provision of Care

Cardiovascular Technologists serve a diverse population and may function in one or more of a variety of activities. The practice of cardiovascular technology includes but is not limited to assessment, technique planning, obtaining structural and interval measurements, and image acquisition to assist physicians in diagnosis and treatment planning.

Performance criteria:

2.1.1 Maintains the provision of cardiovascular technology services that are safe, aseptic, preventative and restorative to the patient.

2.1.2 Keeps accurate, contemporaneous, comprehensive and legible records of patient care in accordance with applicable legislation, protocols and guidelines. This includes Qatar Supreme Council for Health requirements and local guidance at a facility level.

2.1.3 Provides cardiovascular technology services including, but not limited to independent assessment and evaluation of patient cardiac function and structure using both standardized and non-standardized assessments.

2.2 Competency Standard 2.2: Patient Centered Care

The cardiovascular technologist is responsible for ensuring that the service user is at the center of all decisions about care wherever possible.

Performance criteria:

2.2.1 Understands the need to adopt an approach which centers on the service user and establishes appropriate professional relationships in order to effectively provide service.

2.2.2 Uses formal (structured interview) or informal (conversational, narrative building) strategies to establish a comprehensive profile of the client. This should include an understanding of the values, beliefs and interests of the service user, their families and other appropriate parties.

2.2.3 Understands the need to provide service users and/or people authorized to act on their behalf with the information necessary to enable them to make informed decisions.

2.2.4 Ensures the provision of service is safe, appropriate, accurate and timely for the patient and referring physician.

2.2.5 Provides the patients and their family with clear and accurate information.

2.2.6 Treat families with care, respect and professionalism.

2.3 Competency Standard 2.3: Evidence-Based Practice

Integrates best available evidence, clinical audit and research into practice to ensure quality of provision.

Performance Criteria:

2.3.1 Utilizes current evidence-base, including recent research findings, and best available evidence to guide image acquisition and measurements.

2.3.2 Incorporates credible critically appraised evidence into cardiovascular technology practice and when initiating change in practice.

2.3.3 Participates in the formulation of evidence-based practice based on best available credible research and/or national and international professional consensus, guidance and audit.

2.3.4 Is aware of the role of audit and review in quality improvement and quality assurance.

2.3.5 Evaluates the efficacy and effectiveness of both new and established technologies using recognized outcome measures.

2.3.6 Participates in generating new evidence to improve quality of care through research, clinical audit and quality improvement programs.

2.4 Competency Standard 2.4: Communication and Teamwork

Uses communication skills to ensure that other members of the health care team, the patient and their family are and remain fully informed.

Performance Criteria:

2.4.1 Establishes relationships of trust, respect, honesty and empathy.

2.4.2 Gathers information about disease, but also about a patient's beliefs, concerns, expectations and illness experience.

2.4.3 Seeks out and synthesizes relevant information from other sources, such as patient's family, caregivers and other professionals.

2.4.4 Delivers information to patients and their families, colleagues, and other members of the healthcare team, in a way that is understandable, and that encourages discussion and participation in decision-making.

2.4.5 Demonstrates cultural competence across all patient groups.

2.4.6 Consistently and clearly communicates relevant, accurate and comprehensive information in verbal, written and electronic forms in a timely manner to ensure the delivery of safe, competent and ethical care.

2.4.7 Understands how communication affects engagement of service users.

2.4.8 Able to modify means of communication to take into account important variables such as age, capacity, learning and physical ability.

2.4.9 Is aware of verbal and non-verbal communication and how this can be affected by factors such as age, culture, ethnicity, gender, socio-economic status and spiritual or religious beliefs.

2.4.10 Participates in building consensus and or resolving conflict in the context of patient care and the multi-professional team.

2.4.11 Engages proactively in teamwork and the team-building processes.

2.4.12 Works effectively with other professionals to prevent, negotiate and resolve inter-professional conflict.

3 DOMAIN THREE: LEADERSHIP AND MANAGEMENT

Exhibits leadership qualities required for the provision of safe, effective cardiovascular procedures. This domain includes concordance with the Code of Ethics and Professional Conduct and the healthcare organization's Code of Behavior as the operating frameworks.

3.1 Competency Standard 3.1: Leadership

Exhibits leadership qualities and manages cardiovascular technology care safely, efficiently and ethically.

Performance Criteria:

3.1.1 Applies clinical reasoning, critical thinking and problem solving skills in the provision, management and evaluation of care.

3.1.2 Manages self, and where appropriate assists others, to ensure effective workload prioritization and time management.

3.1.3 Provides feedback, offers suggestions for change and deals effectively with the impact of change on own practice, the team and/or on the organization.

3.1.4 Advocates for, and contributes to the creation and maintenance of a positive working environment and team working.

3.1.5 Participates in the mentorship and coaching of others maximizing the effectiveness of cardiovascular procedures, and the provision of quality health care and the profession.

3.1.6 Acts as a role model for colleagues, students and other members of the healthcare care team by treating all with respect, trust and dignity.

3.1.7 Fosters the advancement of cardiovascular technologist's autonomy and accountability.

3.1.8 Promotes and maintains a positive image of cardiovascular technology.

3.1.9 Assumes leadership responsibilities, as appropriate, in the delivery of cardiovascular procedures.

3.2 Competency Standard 3.2: Quality Improvement and Safety

Ensures cardiovascular technology practices meet organizational quality and safety standards and guidelines and participates in continuous quality improvement.

Performance criteria:

3.2.1 Practices in accordance with approved quality standards and guidelines reflecting recognized evidence based best practice.

3.2.2 Seeks evidence from a wide range of credible sources to maintain, extend and evaluate the quality of cardiovascular and cardiac electrophysiology labs.

3.2.3 Acts immediately and appropriately in accordance with the national and/or institutional disaster plan as needed participating in triage and coordination of care for patients.

3.2.4 Implements quality assurance and risk management strategies.

3.2.5 Ensures a safe environment by identifying actual and potential risks and takes timely action to meet national legislation and workplace health and safety principles.

3.2.6 Acknowledges limitations in knowledge, judgment and/or skills, and functions within those limitations.

3.2.7 Recognizes less than optimum or unsafe practice in self and others and intervenes, records and reports, and acts to access and/or provides support to ensure remediation of deficiencies.

3.2.8 Participates in ongoing quality improvement and risk management initiatives.

3.2.9 Adheres to and implements infection control policies and procedures.

3.2.10 Communicates and records safety concerns to the relevant authority and documents response.

3.3 Competency Standard 3.3: Delegation and Supervision

Delegates and provides supervision to team members according to their competence and scope of practice.

Performance Criteria:

3.3.1 Delegates to others, activities commensurate with their abilities and scope of practice.

3.3.2 Uses a range of supportive strategies when supervising aspects of care delegated to others.

3.3.3 Maintains accountability and responsibility when delegating aspects of care to others.

4 DOMAIN FOUR: EDUCATION, LEARNING AND DEVELOPMENT

4.1 Competency Standard 4.1: Education and Facilitation

Demonstrates commitment to the development of other members in the healthcare team, as well as patients, families, community and society

Performance criteria:

4.1.1 Shares and disseminates professional knowledge and research findings with others.

4.1.2 Acts as a resource person for others.

4.1.3 Contributes to the formal and informal education and professional development of students and colleagues facilitating and where appropriate coordinating learning opportunities.

4.1.4 Acts as an effective preceptor and/or mentor as assigned, undertaking appropriate preparation and updating to undertake the roles.

4.1.5 Takes opportunities to learn together with others in order to contribute to health care improvement.

4.2 Competency Standard 4.2: Lifelong learning

Assumes responsibility for own professional development through lifelong learning to ensure continued competence and performance improvement.

Performance criteria:

4.2.1 Undertakes regular self-assessment and reviews own practice through reflection, peer review, competency assessment, critical examination and evaluation.

4.2.2 Instigates planned updating knowledge and skills for safe, person-centered, evidence-based practice.

4.2.3 Actively engages in ongoing professional development and performance improvement of self and others.

4.2.4 Maintains a record of learning and professional development activities and accreditation.

4.2.5 Understands the value of case discussion, clinical supervision and other methods of reflecting and reviewing practice.

5 DOMAIN FIVE: RESEARCH AND IMPROVEMENT

This domain articulates the requirement that the Cardiovascular Technologist should practice incorporating best available evidence to provide quality health care and contribute to the creation and/or implementation of knowledge through active participation.

5.1 Competency Standard 5.2: Using data and information systems

Uses data systems to enhance the quality and delivery of patient care

Performance Criteria:

5.1.1 Acquires information technology skills needed to inform and provide optimum healthcare care and accurately document procedures.

5.1.2 Understands how to use technology and data to assist in problem identification and identification of deficiencies that can be remediated to enable improvements in patient care.

5.1.3 Analyses data accurately and comprehensively leading to appropriate interpretation of findings.

5.1.4 Recognizes the need to manage records and all other information in accordance with applicable legislation, protocols and guidelines.

5.2 Competency Standard 5.3: Research Participation

Uses research, evaluation, service improvement and audit findings to enhance the quality of patient care and

protect the rights of those participating.

Performance Criteria:

5.2.1 Participates in activities that disseminate research findings such as publications, journal clubs, grand rounds and presentations.

5.2.2 Promotes research, evaluation, service improvement initiatives and audit, designed to improve healthcare practice and disseminate findings to colleagues, patients, families, communities, and society.

5.2.3 Undertakes appropriate development to ensure competency to recruit, ensure informed consent is obtained, support involvement, facilitate, monitor and where appropriate advocate withdrawal of individuals participating in clinical research and evaluation.

Bibliography

Society of Invasive Cardiac Professionals (SICP) (2015) *Educational Guidelines for Invasive Cardiovascular Technology Personnel in the Cardiovascular Catheterization Laboratory Rev 2015*

RCES Scope of Practice Rev 2015 (SICP)

RCIS Scope of Practice Rev 2010 (SICP)

Cardiovascular Credentialing International (CCI) (2015)

Criteria for National Registration Requirements – Neurodiagnostic Technologist

Criteria	The Neurodiagnostic Technologist (ND)
Definition	The Neurodiagnostic Technologist is an individual who holds a current valid certification, license or registration by a national authority or board in Neurodiagnostics or a Neurodiagnostic specialization. The Neurodiagnostic specializations includes, but are not limited to: Electroencephalography (EEG), Evoked Potentials (EP), Intensive Care Unit/Continuous EEG Monitoring (ICU/EEG), Long Term Monitoring (LTM), Electromyography (EMG) and Nerve Conduction (NCS).
Practice Settings	Neurodiagnostic Technologists practices in a variety of settings, which include, but are not limited to: • Hospitals (in all areas) • Outpatient Clinics • Physician Offices • Patient Homes • Research Facilities
Education	Minimum Requirements: An educational qualification (diploma, certificate, degree, associate's degree, etc.) that has a duration minimum of 18 months from a nationally accredited Neurodiagnostic program.
Scope of Practice	Neurodiagnostic Technologists are an allied health profession. The Technologists perform specialized testing to obtain minute electrical signals from the central and peripheral nervous system. These signals provide information to ensure proper treatment, control, and diagnostic evaluation and care of patients with neural abnormalities. A Neurodiagnostic technologist is responsible for explaining the test procedure to the patient, applying all recording, monitoring and stimulating electrodes, recognizing and eliminating artifact, calibrating all equipment, troubleshooting and correcting malfunctions, selecting appropriate amplifier settings and obtaining quality data. The Neurodiagnostic Technologist must be able to provide technical descriptions of their tests and work independently to make real-time decisions regarding data collection.
Licensure	The Neurodiagnostic Technologist must apply for licensure through Qatar Council For Healthcare Practitioners (QCHP).
Experience	Two years (2) recent experience in at least one of the Neurodiagnostic specializations.
Competency validation	Competency is validated by passing the QCHP Licensing Exam (if applicable). Require to provide evidence of fulfilling Continuing Professional Development credit requirement as per QCHP Circular No. I (2014) as applicable to the profession.

Others Requirement for Evaluation & Registration	***(Refer to QCHP requirement for license Registration/Evaluation)*** http://www.qchp.org.qa/en/Pages/HowToRegisterToPracticeInQatar.aspx
Requirements for License renewal	• Evidence of practice in one of the Neurodiagnostic Technologist specializations in the period since obtaining last license. • Certification of 15 hours of continuing education in Neurodiagnostics (e.g. conference attendance, webinars, workshops). • Proof of current employment in the respective field. • Compliance with QCHP competency validation standards. ***(Refer to additional QCHP requirement for license Registration/Evaluation)*** http://www.qchp.org.qa/en/Pages/HowToRegisterToPracticeInQatar.aspx
Note: Applicant with break from practice please see QCHP "Break from Practice Policy"	

Neurodiagnostic Technologist Scope of Practice

INTRODUCTION

The Neurodiagnostic Technologist scope of practice is based on a competency framework that comprises **professional ethics, clinical practice, leadership and management, learning and management** and **research** domains intrinsic to the role of the Neurodiagnostic Technologist. The scope also describes the professional roles and activities and practice settings for the Neurodiagnostic Technologist.

This document sets out the standards of proficiency required for safe and effective practice in the Neurodiagnostic profession. They are the threshold standards necessary to protect members of the public. Once on the Qatar Supreme Council for Health Professionals Register the licensed professional must continue to meet the standards of proficiency which relate to the areas in he/she works. Periodic updating of the scope of practice statement and standards of proficiency will be necessary as technology and perspective change.

A Neurodiagnostic Technologist works under either the direct or general supervision of a licensed physician. General supervision is defined as not being present during the procedure, but is available immediately to render assistance and direction if required. Under general supervision the Neurodiagnostic Technologist works independently and makes on-line decisions regarding data collection. A licensed professional's scope of practice is generally in one or more areas of specialization, including but not limited to: Electroencephalography (EEG), Evoked Potentials (EP), Intensive Care Unit/Continuous EEG Monitoring (ICU/EEG), Long Term Monitoring (LTM), Electromyography (EMG) and Nerve Conduction (NCS). A Neurodiagnostic Technologist's personal scope of practice means that she/he can practice safely only in the specialization they are certified for. If a licensed professional moves outside of the traditional scope of practice of the Neurodiagnostic Technologist such as occurs in extended scope practice, the licensed professional is responsible for ensuring that this is within their knowledge, skills and expertise so that they continue to work safely, lawfully and effectively. The licensed professional must have evidence of advanced competencies in order to address responsibilities that extend beyond traditional boundaries of Neurodiagnostic Technologist practice.

STATEMENT OF PURPOSE:

The purpose of this document is to define Neurodiagnostic Technologists' scope of practice in Qatar to:

(a) Describe the services offered by qualified Neurodiagnostic Technologists.

(b) Define the professional accountability, required competencies, and scope of ethical and legal practice of the Neurodiagnostic Technologist in relation to patients, families, other members of the multidisciplinary team, community and society.

(c) Serve as a reference for license regulating authorities and professionals governing healthcare.

DEFINITION OF NEURODIAGNOSTICS:

Neurodiagnostics is the practice of recording of minute electrical signals from the central and peripheral nervous system during specialized testing to ensure proper treatment, control, and diagnostic evaluation and care of patients with neural abnormalities.

PROFESSIONAL ROLES AND ACTIVITIES:

A Neurodiagnostic Technologist is a qualified health care professional who is responsible for explaining the test procedure to the patient, applying all recording, monitoring and stimulating electrodes, recognizing and eliminating artifact, calibrating all equipment, troubleshooting and correcting malfunctions, selecting appropriate amplifier settings and obtaining quality data. The Neurodiagnostic Technologist must be able to

provide technical descriptions of their tests and work independently to make ono-line decisions regarding data collection.
A Neurodiagnostic Technologist will specialize and have certification in one or more of the following areas: Electroencephalography (EEG), Evoked Potentials (EP), Intensive Care Unit/Continuous EEG Monitoring (ICU/EEG), Long Term Monitoring (LTM), Electromyography (EMG) and Nerve Conduction (NCS). They primarily work with Neurology but also support the following specialty areas:

- Pediatrics
- Intensive Care Units
- Emergency Medicine
- Surgery
- Geriatric/long term care
- Oncology and palliative care
- Mental health
- Cardiovascular
- Orthopedics
- Intensive care
- Neonates

Activities of the Neurodiagnostic Technologist include, but are not limited to:

- Calibrates equipment.
- Establishes a rapport with the patient and family.
- Documents the patient's mental state and age, medical history, clinical events and symptomatology, and medications.
- Determines the appropriateness of testing.
- Applies electrodes accurately and ensures appropriate impedances.
- Documents all artifact and whenever possible eliminates it from the recording.
- Documents all patient activity on the recording in real time.
- Remove electrodes and clean equipment according to the institutional infection control policy and/or protocol.
- Reports critical tests according to facility policy and/or protocol.
- Ensures proper storage and/or achieving of tests.

COMPETENCY FRAMEWORK

1 DOMAIN ONE: PROFESSIONAL AND ETHICAL PRACTICE

This domain defines the professional accountability and scope of ethical and legal practice of the Neurodiagnostic Technologist in relation to patients, families, other members of the multidisciplinary team, community and society.

1.1 Competency Standard 1.1: Accountability

Accepts accountability for own actions, and decision-making and for the related outcomes.

Performance criteria:

1.1.1 Works within the limits of own competence and the boundaries of personal and professional Scope of Practice.

1.1.2 Identifies opportunities for advocacy, health promotion and disease prevention.

1.1.3 Provides care without discrimination on any basis, with respect for the rights and dignity of all individuals.

1.1.4 Encourages and promotes appropriate stewardship of resources.

1.1.5 Avoids any activity that creates a conflict of interest or violates any Qatari laws and regulations.

1.1.6 Promotes the growth of the profession, and presents a positive image of Neurodiagnostic Technologists to the community.

1.2 Competency Standard 1.2: Ethical Practice

Demonstrates integrity, accountability, honors the rights and dignity of all individuals, and pursues a quest for excellence in all professional activities that serve the best interests of the patient, society, and the profession.

Performance criteria:

1.2.1 Engages in ethical decision-making with respect to own professional responsibilities or where ethical issues affect healthcare delivery or clinical decision-making.

1.2.2 Acts as patient advocate protecting the person's rights in accordance with Qatari law and organization specific terms and conditions.

1.2.3 Maintains patient confidentiality and makes every reasonable effort to ensure the security of written, verbal and electronic patient information.

1.2.4 Respects the patient's (including children and young people and their parents') right to be fully informed, establishing a context for self- determination, assent (children) and informed consent.

1.2.5 Acts sensitively and fairly giving due consideration to diversity, including cultural and religious beliefs, race, age, gender, physical and mental state, and other relevant factors.

1.2.6 Questions when appropriate, healthcare practice where the safety of others is at risk and where the quality of care warrants improvement; acts where the safety of care is compromised and where necessary reports others who may be risking patient safety.

1.2.7 Demonstrates professional integrity and ethical conduct in matters where a conflict of interest could be construed, i.e. when advising on the use of drugs, products, devices or services (as per organizational approved policy and Code of Ethics and Professional Conduct for Neurodiagnostic Technologist*).

**((Code of Ethics and Professional Conduct for Neurodiagnostic Technologists in State of Qatar must be developed))*

1.3 Competency Standard 1.3: Legal Practice

Functions at all times in accordance with legislative, regulatory and policy guidelines relevant to Neurodiagnostic Technologists in Qatar.

Performance criteria:

1.3.1 Practices in accordance with agreed policies and procedures that guide Neurodiagnostic Technologist testing.

1.3.2 Practices in accordance with relevant State of Qatar laws and regulations that impact Neurodiagnostic Technologist testing.

1.3.3 Maintains valid registration and licensure to practice in Qatar.

1.3.4 Recognizes and acts upon breaches of laws and regulations relating to the professional role and/or Code of Ethics and Professional Conduct for Neurodiagnostic Technologists*.

1.3.5 Maintains a professional portfolio including evidence of continued competence and improvement.

2 DOMAIN TWO: CLINICAL PRACTICE

As a healthcare profession, Neurodiagnostic Technologists practice in partnership with members of the inter professional team, service users, support staff and others in order to deliver collaborative care across the healthcare continuum. Critical thinking, patient and environment assessment skills and evidence-based clinical practice guidelines enable Neurodiagnostic Technologists to provide appropriate and effective diagnostic testing and therapeutic interventions.

2.1 Competency Standard 2.1: Core Skills

Neurodiagnostic Technologists serve a diverse population and may function in one or more of a variety testing specializations. Essential core skills the Neurodiagnostic Technologist must practice includes but is not limited to this list:

Performance criteria:

2.1.1 Understands digital recording concepts and equipment calibration.

2.1.2 Anticipates how filters, sensitivity, montage, electrodes, equipment malfunction and printers will alter waveforms.

2.1.3 Applies the principles of physics to the test to effectively record and troubleshoot.

2.1.4 Ensures workplace safety through proper practices for electrical safety, infection control, and patient identification and safety, as defined by their institutional policy and/or procedure.

2.1.5 Understand the physiology, anatomy and neuroanatomy involved in the modalities the Neurodiagnostic Technologist is certified to test.

2.1.6 Knows the effect of different medications on the modality being tested.

2.1.7 Understand the effect of a patient's neurological condition on the modality being tested and is able to correlate that with the patient's clinical events and symptoms.

2.1.8 Can identify normal versus abnormal recorded waveforms and clinical events.

2.1.9 Provides technical descriptions of the recorded waveforms.

2.1.10 Maintains and improves knowledge and skills.

2.1.11 Keeps accurate, contemporaneous, comprehensive and legible records of patient care in accordance with applicable legislation, protocols and guidelines. This includes Qatar Supreme Council for Health requirements, Code of Ethics and Professional Conduct for Neurodiagnostic Technologists* in Qatar and local guidance at a facility level.

2.2 Competency Standard 2.2: Provision of Care

The provision of patient care during Neurodiagnostic tests includes, but is not limited to:

Performance criteria:

2.2.1 The provision of service that is safe, appropriate, accurate and timely for the patient and the requesting physician.

2.2.2 The provision of Neurodiagnostic services which meet the needs of the patient and the requesting physician in the management of disease or aiding diagnosis.

2.2.3 The Neurodiagnostic Technologist determines the appropriate modality to test based upon the patient's medical history and physician request.

2.2.4 Observation and monitoring of patient's signs and symptoms, behavior and mental state during testing.

2.2.5 Takes appropriate action or intervention when abnormalities are present in reports, referrals or test methods to ensure patient safety.

2.2.6 Implementation and documentation of written or verbal orders for Neurodiagnostic tests.

2.3 Competency Standard 2.3: Patient Centered Care

The Neurodiagnostic Technologist is responsible for ensuring that the patient is at the center of all decisions about care wherever possible.

Performance criteria:

2.3.1 Treat patients and their families with care, respect and professionalism.

2.3.2 Provide patients and their families with clear and accurate information.

2.3.3 Evaluates the needs and circumstances of patients and their families for optimal compliance with the rigorous requirements for quality Neurodiagnostic results.

2.3.4 Performs and evaluates the quality of diagnostic testing within the different Neurodiagnostic specialties.

2.3.5 Under either general or direct physician supervision decides the appropriate Neurodiagnostic modality to test, makes appropriate modifications when necessary to ensure the patient receives appropriate evidence-based care.

2.3.6 Collaborates with the multidisciplinary healthcare team to ensure patient centered management and optimal treatment by providing the timeliest and effective diagnostic procedures outlined in this Scope of Practice.

2.3.7 Educates and informs the patient and family members/other caregivers as to the requirements of testing procedures and the likely patient experience.

2.3.8 Adheres to universal precautions.

2.3.9 Remains competent in Basic Life Support (BLS)

2.3.10 Applies a practical knowledge of the fundamental biomedical and technological sciences including anatomy, physiology, biochemistry, pharmacology, microbiology, pathophysiology, instrumentation and biostatistics to provide high quality and patient appropriate Neurodiagnostic testing.

2.4 Competency Standard 2.4: Evidence-Based Practice

Integrates best available evidence, clinical audit and research into practice to ensure quality of Neurodiagnostic testing.

Performance Criteria:

2.4.1 Utilizes current evidence-base, including recent research findings, and best available evidence to guide Neurodiagnostic practice.

2.4.2 Incorporates credible critically appraised evidence into Neurodiagnostic practice.

2.4.3 Participates in the formulation of evidence-based practice based on best available credible research and/or national and international professional consensus, guidance and audit.

2.4.4 Gathers and uses information, including qualitative and quantitative data in order to evaluate outcomes for services users engaged in Neurodiagnostic testing.

2.4.5 Evaluates the efficacy and effectiveness of both new and established interventions and technologies using recognized outcome measures.

2.4.6 Participates in generating new evidence to improve quality of care through research, clinical audit and quality improvement programs.

2.5 Competency Standard 2.5: Communication and Teamwork

Uses communication skills to ensure that other members of the health care team, the patient and their family are and remain fully informed.

Performance Criteria:

2.5.1 Establishes relationships of trust, respect, honesty and empathy.

2.5.2 Gathers information about disease, but also about a patient's beliefs, concerns, expectations and illness experience.

2.5.3 Seeks out and synthesizes relevant information from other sources, such as patient's family, caregivers and other professionals.

2.5.4 Delivers information to patients and their families, colleagues, and other members of the healthcare team, in a way that is understandable, and that encourages discussion and participation in decision-making.

2.5.5 Demonstrates cultural competence across all patient groups.

2.5.6 Consistently and clearly communicates relevant, accurate and comprehensive information in verbal, written and electronic forms in a timely manner to ensure the delivery of safe, competent and ethical care.

2.5.7 Understands how communication affects engagement of service users.

2.5.8 Able to modify means of communication to take into account important variables such as age, capacity, learning and physical ability.

2.5.9 Be aware of verbal and non-verbal communication and how this can be affected by factors such as age, culture, ethnicity, gender, socio-economic status and spiritual or religious beliefs.

2.5.10 Participates in building consensus and or resolving conflict in the context of patient care and the multi-professional team.

2.5.11 Engages proactively in teamwork and the team-building processes.

2.5.12 Works effectively with other professionals to prevent, negotiate and resolve inter-professional conflict.

3 DOMAIN THREE: LEADERSHIP AND MANAGEMENT

Exhibits leadership qualities required for the provision of safe, effective Neurodianostic Practice. This domain includes concordance with the Code of Ethics and Professional Conduct and the healthcare organization's Code of Behavior as the operating frameworks.

3.1 Competency Standard 3.1: Leadership

Exhibits leadership qualities and manages Neurodiagnostic testing safely, efficiently and ethically.

Performance Criteria:

3.1.1 Applies clinical reasoning, critical thinking and problem solving skills in the provision, management and evaluation of care.

3.1.2 Manages self, and where appropriate assists others, to ensure effective workload prioritization and time management.

3.1.3 Provides feedback, offers suggestions for change and deals effectively with the impact of change on own practice, the team and/or on the organization.

3.1.4 Advocates for, and contributes to the creation and maintenance of a positive working environment and team working.

3.1.5 Participates in the mentorship and coaching of others maximizing the effectiveness of Neurodiagnostic testing, the provision of quality health care and the profession.

3.1.6 Acts as a role model for colleagues, students and other members of the healthcare care team by treating all with respect, trust and dignity.

3.1.7 Fosters the advancement of the profession, its autonomy and accountability.

3.1.8 Promotes and maintains a positive image of Neurodiagnostic Technologists.

3.1.9 Assumes leadership responsibilities, as appropriate in the performance of duties.

3.2 Competency Standard 3.2: Quality Improvement and Safety

Ensures Neurodiagnostic Technologists meets organizational quality and safety standards and guidelines and participates in continuous quality improvement.

Performance criteria:

3.2.1 Practices in accordance with approved quality standards and guidelines reflecting recognized evidence based best practice.

3.2.2 Seeks evidence from a wide range of credible sources to maintain, extend and evaluate the quality Neurodiagnostic practice.

3.2.3 Acts immediately and appropriately in accordance with the national and/or institutional disaster plan as needed participating in triage and coordination of care for patients.

3.2.4 Implements quality assurance and risk management strategies.

3.2.5 Ensures a safe environment by identifying actual and potential risks and takes timely action to meet national legislation and workplace health and safety principles.

3.2.6 Acknowledges limitations in knowledge, judgment and/or skills, and functions within those limitations.

3.2.7 Recognizes less than optimum or unsafe practice in self and others and intervenes, records and reports, and acts to access and/or provides support to ensure remediation of deficiencies.

3.2.8 Participates in ongoing quality improvement and risk management initiatives.

3.2.9 Adheres to and implements infection control policies and procedures.

3.2.10 Communicates and records safety concerns to the relevant authority and documents response.

3.3 Competency Standard 3.3: Delegation and Supervision

Delegates and provides supervision to team members according to their competence and scope of practice.

Performance Criteria:

3.3.1 Delegates to others, activities commensurate with their abilities and scope of practice.

3.3.2 Uses a range of supportive strategies when supervising aspects of care delegated to others.

3.3.3 Maintains accountability and responsibility when delegating aspects of care to others.

4 DOMAIN FOUR: EDUCATION, LEARNING AND DEVELOPMENT

4.1 Competency Standard 4.1: Education and Facilitation

Demonstrates commitment to the development of other members in the healthcare team, as well as patients, families, community and society.

Performance criteria:

4.1.1 Shares and disseminates professional knowledge and research findings with others.

4.1.2 Acts as a resource person for others.

4.1.3 Contributes to the formal and informal education and professional development of students and colleagues facilitating and where appropriate coordinating learning opportunities.

4.1.4 Acts as an effective preceptor and/or mentor as assigned, undertaking appropriate preparation and updating to undertake the roles.

4.1.5 Takes opportunities to learn together with others in order to contribute to health care improvement.

4.2 Competency Standard 4.2: Lifelong learning

Assumes responsibility for own professional development through lifelong learning to ensure continued competence and performance improvement.

Performance criteria:

4.2.1 Undertakes regular self-assessment and reviews own practice through reflection, peer review, competency assessment, critical examination and evaluation.

4.2.2 Instigates planned updating knowledge and skills for safe, person-centered, evidence-based practice.

4.2.3 Actively engages in ongoing professional development and performance improvement of self and others.

4.2.4 Maintains a record of learning and professional development activities and accreditation.

4.2.5 Understands the value of case discussion, clinical supervision and other methods of reflecting and reviewing practice.

4.3 Competency Standard 4.3: Promotion of health and patient education

Enable and provide information on maintaining and optimizing health and maximizing self-care to service users as appropriate.

Performance criteria:

4.3.1 Takes part in health promotion, patient education and illness prevention initiatives and contributes to their evaluation.

4.3.2 Applies knowledge of resources available for health promotion and health education.

4.3.3 Acts to empower the individual, family and community to adopt healthy lifestyles and concord with self-management of ill-health to promote wellbeing.

4.3.4 Provides relevant health information and patient education to individuals, families and communities to assist in achieving optimal health and rehabilitation.

4.3.5 Demonstrates understanding of traditional healing practices within an individual's, family and/or community's health belief systems and incorporates appropriately and/or provides education if adversely effecting optimum health.

4.3.6 Recognizes the potential for patient education and teaching for health and wellbeing within the course of work duties.

4.3.7 Applies knowledge of a variety of teaching and learning strategies with individuals, families and communities to effect and evaluate learning and concordance with treatment and advice.

5 DOMAIN FIVE: RESEARCH AND IMPROVEMENT

This domain articulates the requirement that the Neurodiagnostic Technologist should practice incorporating best available evidence to provide quality health care and contribute to the creation and/or implementation of knowledge through active participation in research and improvement activities.

5.1 Competency Standard 5.1: Using data and information systems

Uses data systems to enhance the quality and delivery of patient care.

Performance Criteria:

5.1.1 Acquires information technology skills needed to inform and provide optimum healthcare care and accurately document outcomes of interventions and ensure data integrity for medical records and research opportunities.

5.1.2 Understands how to use technology and data to assist in problem identification and identification of deficiencies that can be remediated to enable improvements in patient care.

5.1.3 Analyses data accurately and comprehensively leading to appropriate interpretation of findings and development of implementation plans.

5.1.4 Recognizes the need to manage records and all other information in accordance with applicable legislation, protocols and guidelines.

5.2 Competency Standard 5.2: Research Participation

Uses research, evaluation, service improvement and audit findings to enhance the quality of patient care and protect the rights of those participating.

Performance Criteria:

5.2.1 Participates in activities that disseminate research findings such as publications, journal clubs, grand rounds and presentations.

5.2.2 Promotes research, evaluation, service improvement initiatives and audit, designed to improve healthcare practice and disseminate findings to colleagues, patients, families, communities, and society.

5.2.3 Undertakes appropriate development to ensure competency to recruit, ensure informed consent is obtained, support involvement, facilitate, monitor and where appropriate advocate withdrawal of individuals participating in clinical research and evaluation.

Bibliography

American Society of Electroneurodiagnostic Technologists (ASET). (2005) Scope of Practice for Electroneurodiagnostic Technology.

American Society of Electroneurodiagnostic Technologists (ASET). (2005) Neurodiagnostic Practice Levels.

American Society of Electroneurodiagnostic Technologists (ASET). (2014) Neurodiagnostic Model Bill for Licensing.

American Society of Clinical Neurophysiolgoy (ACNS). (2008), Guideline 4: Standards of Practice in Clinical Electroencephalography.

American Society of Clinical Neurophysiolgoy (ACNS). (2008), Guideline 12: Guidelines for Long-Term Monitoring for Epilepsy.

Criteria	Oncology Radiation Therapist
Definition	Is a qualified health care provider, licensed and skilled in the justification, optimization and practice of cancer treatment and related areas. The Oncology Radiation Therapist functions as a member of a multi-disciplinary team with Radiation Oncologists, Medical Physicists and Nurses. Radiation Therapist possesses dedicated bachelor of Science degree with Radiation Oncological focus.
Practice Settings	The Oncology Radiation Therapist practices specifically in the specialist field of Radiation Oncology across a range of functions including multi-modality clinical imaging, advanced treatment planning and image guided treatment delivery and verification. The role of the Oncology Radiation Therapist is applied in the management and care of patients undergoing cancer treatment, and supports patients and families through the entire cancer journey.
Education	Bachelor Degree level training in Radiotherapy (radiation therapy/therapeutic radiography/ medical radiation sciences.-therapeutic) Or Equivalent.
Scope of Practice	The Oncology Radiation Therapist is deemed to be a competent practitioner and practices autonomously within the specialist area of Radiation Oncology with a comprehensive and detailed knowledge of Radiation Therapy in the pre-treatment simulation, planning and image guided treatment of malignancy and specific benign conditions. The Oncology Radiation Therapist must have academic theoretical knowledge as well as demonstrative practical application across a wide range of technical and patient focused tasks and procedures. These functions involves performance, production, evaluation, assessment and application of Radiation Therapy specific therapeutic interventions, as well as the evaluation and assessment of clinical imaging and therapeutic applications through the following scope: • Demonstrates professional accountability and scope of ethical and legal practice guidelines in relation to patients, families, other members of the multidisciplinary teams, community and society. • Provides radiation oncology services using the standards of accreditation and professional certification within the ethical framework, considering the psychological and socio-cultural needs of a specific patient population, families, communities and society. • Functions at all times in accordance with legislative, regulatory and policy guidelines relevant to the practice of Radiation Oncology. • Applies communication skills to ensure that other members of the health care team, the patient and his family are fully informed and supported across a range of activities and functions.

Scope of Practice	• Applies communication skills to ensure that other members of the health care team, the patient and his family are fully informed and supported across a range of activities and functions.
Licensure	• Recognized license of profession practice (e.g. HCPC).The Oncology Radiation Therapist must apply for licensure through Qatar Council for Healthcare Practitioners (QCHP).
Experience	Minimum: Four years post qualification clinical experience in recognized Radiation Oncology setting (may include clinical internship).
Competency Validation	• Verification for Qualification / Experience documents at the appointment. • Must meet entry to practice criteria as defined by the Qatar National Competency Profile for Oncology Radiation Therapist
Other Requirements for Evaluation & Registration	***(Refer to QCHP requirement for license Registration/Evaluation)*** http://www.sch.gov.qa/health-services/services-to-healthcare-professionals/healthcare-practitioners-registration-n-licensing/process-map/guidelines-copy**.**
Requirements for license renewal	***(Refer to QCHP requirement for license Registration/Evaluation)*** http://www.sch.gov.qa/health-services/services-to-healthcare-professionals/healthcare-practitioners-registration-n-licensing/process-map/guidelines-copy**.**
Note: Applicants with break from practice please see QCHP "Break from Practice Policy"	

Oncology Radiation Therapist Scope of Practice

Introduction:

The Oncology Radiation Therapist applies a professional practice across five key domains

1- Professional and Ethical Practice
2- Clinical Practice
3- Leadership and Management
4- Continuous Education and Professional Development
5- Research and development

Each of these domains is described through competency standards and performance criteria that define the requirements for practice demanded of the Oncology Radiation Therapist. This document is to be used as a foundation for professional development and performance appraisal.

Scope of Practice Statement

The Oncology Radiation Therapist is deemed to be a competent practitioner and practices autonomously within the specialist area of Radiation Oncology with a comprehensive and detailed knowledge of Radiation Therapy in the pre-treatment preparation, localization and treatment of malignancy and specific benign conditions. The Radiation Therapist must have academic theoretical knowledge as well as demonstrative practical application across a wide range of technical and patient focused tasks and procedures.

The Oncology Radiation Therapist must demonstrate an understanding of human anatomy, physiology, radiobiology, pathology, and medical terminology, and must maintain a high degree of efficacy and accuracy in pre-treatment imaging modalities, treatment planning practices/systems and image guided external beam radiotherapy, brachytherapy/internal radiotherapy and radiosurgery practices. They must maintain knowledge of radiation, high-intensity ultrasound and MRI application, protection and safety, cancer medicine, technical and radiobiological principles and must function in supportive and psychosocial roles across Radiation Oncology practices.

Radiation Oncology definition:

Radiation Oncology: The effective application of high and low energy forms of radiation and other energy modalities to safely and accurately produce and apply in a timely fashion digital therapeutic plans/prescriptions across a range of indications. Radiation Oncology involves the planning, simulation and safe, accurate delivery of image guided radiotherapy treatments for radical and palliative patient populations including but not limited to three-dimensional conformal radiotherapy, intensity modulated radiotherapy, volumetric arc therapy, radiosurgery and stereotactic radiotherapy, radiosurgery and brachytherapy.

Professional Roles and Responsibilities

Oncology Radiation Therapist: A licensed healthcare provider, working as part of multi-disciplinary Radiation Oncology team. The Radiation Therapist is responsible for ensuring best practice, accuracy and radiation safety is applied at all stages in a patient's care path from Image localization, treatment planning and ultimately, treatment delivery. The Radiation Therapist follows specific orders prescribed by Radiation Oncologist. All techniques and prescriptions are evidenced based. The Radiation Therapist monitors patient at all stages in their treatment journey and refer to other multidisciplinary team members as and if necessary. The radiation Therapist is responsible for their own continued professional development and must maintain a high level of professional competence.

COMPETENCIES FRAMEWORK

1. DOMAIN ONE: PROFESSIONAL AND ETHICAL PRACTICE

This domain defines the professional accountability and scope of ethical and legal practice guidelines of the Oncology Radiation Therapist in relation to patients, families, other members of the multidisciplinary teams, community and society.

1.1 Competency Standard: Accountability

The Oncology Radiation therapist should demonstrate advanced skills in integrating areas of key importance in their clinical areas within radiation oncology. S/he must be able to form in the area of their practice which may operate across professional and organizational boundaries.

Performance Criteria:

1.1.1. Demonstrates accountability for own independent professional judgment and critical thinking for actions and outcome of care through a continuous competency in accordance with Qatar laws and regulations and scope of practice.
1.1.2. Practices within the limits of own competency elements and the boundaries of the Professional scope of practice.
1.1.3. Demonstrates sufficient knowledge of digital imaging and radiation oncology planning and treatment delivery systems, specialist record and verify systems and electronic information communications.
1.1.4. Adheres to evidence based or best practice guidance when experiencing situations beyond the limits of own competency and the scope of practice.
1.1.5. Must develop and review applications and techniques appropriate to their areas of practice. Must contribute to improvement within the profession in ethical application of evidence based knowledge and skills.
1.1.6. Acknowledge and respect the accountability and responsibilities of other healthcare professionals and personnel.
1.1.7. Takes accountability for delegation of aspects of care delivery.
1.1.8. Assumes accountability for improving the quality and effectiveness of healthcare services provided.

1.2 Competency Standard: Ethical Practice

In Providing radiation oncology services uses the standards of accreditation and professional certification within the ethical framework, considering the socio-cultural needs of a specific patient population, families, communities and society.

Performance Criteria:

1.2.1. Engages in ethical decision-making with respect to own professional responsibilities or where ethical issues affect healthcare delivery or clinical decision-making.
1.2.2. Acts as patient advocate protecting the person's rights in accordance with Qatar law and terms and conditions of employment.
1.2.3. Maintains confidentiality and makes every reasonable effort to ensure the security of written, verbal and electronic patient information.
1.2.4. Respects the patient's (including children and young people and their parents) right to be fully informed establishing a context for self- determination, assent (children) and informed consent; in line with local and national policies and procedures.

1.2.5. Respects and maintains the patient's and family's right for privacy and dignity.
1.2.6. Acts sensitively and fairly giving due consideration to diversity, including cultural and religious beliefs, race, age, gender, physical and mental state, and other relevant factors.
1.2.7. Remains sensitive to the physical and emotional needs of the patient through good communication.
1.2.8. Maintains patient and family continuing education to enhance patient care, public education, while embracing lifelong learning.
1.2.9 Must monitor and provide evidence of quality of practice.

1.3 Competency Standard: Legal Practice

Functions at all times in accordance with legislative, regulatory and policy guidelines relevant to radiation oncology practice.

Performance Criteria:

1.3.1. Practices in accordance with agreed policies and procedures that guide radiation oncology practice.
1.3.2. Practices in accordance with relevant laws and regulations that govern radiation oncology practice.
1.3.3. Maintains valid registration and licensure to practice in Qatar.
1.3.4. Recognizes and acts upon breaches of laws and regulations related to the professional role

2. DOMAIN TWO: Clinical Practice

2.1. Competency Standard: Provision of Care

Clinical practice in radiation oncology should be provided by the Oncology Radiation Therapist to encompass the key principles of patient centered care while providing radiation therapy for therapeutic purposes. Licensed Oncology Radiation Therapists must have the theoretical Evidence Based knowledge, and the Practical Skills to perform the following Radiation Oncology scopes of Practice:

2.1.1 Clinical Practice Specifications/Performance Criteria:

2.1.1.1 ***Understand the theoretical basis for evidence-based practice***

This includes:

- Knowledge of human anatomy: surface, cross sectional and radiographic.
- An understanding of radiation physics: how radiation is produced, beam characteristics, radiotherapy equipment, radiation protection and radiobiological principles and interactions.
- Knowledge of molecular oncology and radiation biology: cell cycle, fractionation effects and biological effects of radiation on malignant and normal cells.
- An understanding and application of advanced principles of clinical imaging, immobilization and positioning, simulation, planning, dosimetry, treatment delivery and associated accurate recording and verification processes.
- Basic knowledge of aetiology and epidemiological principles of cancer medicine.
- Knowledge of signs and symptoms of main cancer sites, treatment related side effects and management.
- Knowledge of indications and diagnosis of indicated cancer sites and specific benign conditions.
- Knowledge of neo adjuvant, adjuvant and concurrent treatment modalities including and not limited to surgery, chemotherapy, monoclonal antibodies, hormone therapy and in particular their application and interaction in the radiation oncology setting.

- Detailed and specific understanding of the radiotherapy management of malignancies and specific benign indications including technique, dose, fractionation schedules, anticipated side effects and their management.

2.1.1.2 ***Demonstrate an ability to identify and assess patient needs***

This includes:

- An ability to identify the physical, social and psychological needs of radiotherapy patients undergoing treatment in their care and provide them with support, information regarding their clinical imaging, simulation, planning and treatment including practicalities and side effect management.
- The ability to assess, monitor and care for the patient prior to, during and after radiation oncology specific procedures.
- The ability to record, verify, grade and assess individualized and standardized patient specific delivered clinical imaging, simulation, immobilization, planning and treatment parameters and treatment related side effects or communications.
- The ability to work within the multi-disciplinary team setting and to call upon, refer for expertise of other health professionals in the care of the patients, as required.
- The ability to select and rationalize clinical imaging, immobilization, simulation, and treatment delivery processes and procedures appropriate to the patient's physical and disease management requirements.
- The Oncology Radiation therapist must practice in a non- discriminatory fashion, acknowledging ethical, cultural and legal considerations, as well as professional codes of conduct and codes of professional conduct and ethics relevant to their professional license to practice.

2.1.1.3 ***Demonstrate academic and theoretical understanding and practical application of radiation oncology processes.***

This includes:

- Ability and competence to undertake dedicated clinical imaging and radiation oncology procedures for patients referred for Radiation Oncology service including and not limited to various imaging modalities including computed tomography, MRI, Pet CT, high intensity ultrasound, external beam radiotherapy, brachytherapy, radiosurgery and other such relevant applications as required.
- Ability and competence to optimize and identify immobilization and simulation requirements for patients referred for radiation oncology service.
- Ability and competence to undertake planning and dosimetry requirements as necessary.
- Ability and competence to undertake and optimize treatment delivery and verification whilst demonstrating aptitude to maintain accurate and effective records for each patient referred for radiation oncology treatment
- Competence and aptitude to identify justification and optimization issues and principles surrounding various imaging and treatment modalities.
- Ability and competence to undertake a full range of calculations for various radiation types and energies.
- Ability and competence to obtain, optimize, interpret and evaluate images taken as part of treatment verification procedures.
- Ability and competence to fuse various imaging modalities as required for optimal radiation oncology planning.
- Ability to outline organs at risk and critical structures as appropriate to clinical treatment site and technique as per Radiation Oncologist's advice.
- Aptitude to partake with other multi-disciplinary team members (Radiation Oncologists, Medical Physicists and Radiation Oncology Nurses) in the development of and changes to work practices, procedures, techniques or technologies, having regard to ongoing developments in the field of radiation oncology.
- The Oncology Radiation Therapist must undertake all of their requisite functions whilst managing the day to day scheduling and responding to clinical demands as appropriate.

- The Oncology Radiation Therapist must maintain up to date knowledge of clinical, technical and radiotherapy developments, ensuring best practices are implemented and maintained.

2.1.1.4 ***Demonstrate academic and theoretical understanding and practical application of quality assurance and radiation safety procedures and processes.***

This includes:

- Participate in routine QA processes and procedures including all treatment verification procedures as required by the Medical Physics team.
- Understand the principles of quality assurance and quality controls in radiation oncology.
- Actively partake and encourage the principles and practices of error reporting and near miss management in line with local hospital and legislative requirements.
- Monitor, report and record any erratic or defective performance of equipment.
- Aptitude and ability to maintain accurate patient records for all pre-treatment and treatment procedures.
- Knowledge and understanding to follow, apply and develop with other teammate's clinical audit and check processes in line with clinical practice requirements and developments.
- Aptitude and ability to report and record any adverse clinical reactions, incidents or complaints and to follow-up, investigate and respond as appropriate.
- Ability and aptitude to partake in health and safety, process development and risk management strategies as necessary and required.
- Ability and competence to develop and maintain guidelines, protocols and pathways within radiation oncology as necessary and required.
- Ability and competence to follow and practice infection control, radiation protection and safety, ALARA, MR safety and other such local hospital and legislative requirements and to ensure adherence of multi-disciplinary team members as required.

2.1.1.5 ***Demonstrate proficiency in information technology and Process development***

This includes:

- Ability and competence to apply and adapt practice development in use of record and verify systems as part of routine work practice.
- Ability and competence to input and check all patient data including pre-treatment and treatment parameters into record and verify system.
- Ability and competence to use electronic methods to access patient information from a range of sources.
- Ability and competence to use radiation oncology specific planning and pre-treatment systems as necessary.
- Ability and competence to utilize electronic methods for accessing and applying evidence based research or professional publications.
- Ability and competence to use electronic programs to prepare and produce guidelines, protocols, pathways, audits and reports as required.

2.2. Competency Standard: Communication and Teamwork

The use of communication skills to ensure that other members of the health care team, the patient and his family are fully informed of all the required radiation oncology information. The Oncology Radiation Therapist must play an active role in the multidisciplinary Radiation Oncology Team and in the wider healthcare setting and is required to liaise closely with the Radiation Oncologist, Medical Physics, Radiotherapy Nursing and other relevant and support teams for the department and wider network.

Performance Criteria:

2.2.1 Consistently communicates relevant and accurate information in verbal, written and electronic forms in a timely manner to ensure the delivery of safe, competent and ethical care.

2.2.2 Demonstrates the ability to work as a team member by engaging in teamwork and the team-building processes.

2.2.3 Works in collaboration with other members of a wider multidisciplinary team across patient pathways.

2.2.4 Demonstrates cultural competence across patient groups through the use of appropriate communication and interpersonal skills.

2.2.5 Attends and actively contributes to multidisciplinary team meetings for the coordination of patient care and in order to act as patient advocate. To represent patient care plans are required.

2.2.6 Ensures safety in patient care by consistent communication and practice of departmental and hospital practices, ensuring adequate and ongoing information and training for self and others in this regard.

2.2.7 Must be able to foster a high level of morale among staff by effective motivation and communication, promoting and maintaining a safe environment for self and others.

2.2.8 Must ensure in close collaboration with the multi-disciplinary team that the patient pathway through pre-treatment and treatment processes is optimized.

2.2.9 Must adhere to and respect local and legislative requirements pertaining to patient rights, safety and confidentiality and actively communicate, promote and ensure adherence by self and other health care providers.

3. DOMAIN THREE: Leadership and Management

3.1 Competency Standard: Leadership

The Oncology Radiation Therapist manages complex and rapidly changing services which require the highest level of leadership and managerial skills as well as excellent clinical skills, promoting and developing a shared sense of commitment and participation amongst staff. S/he must be able to practice as an active member of the radiation oncology and wider multi-disciplinary team. S/he must demonstrate the ability to foster and develop good working relationships within the wider hospital network.

Performance Criteria:

3.1.1 Ensures the safe and effective operation of equipment on part of self and other team members.

3.1.2 Analyzes situations and is flexible to adapt to pressurized situations in a timely manner. S/he must demonstrate the effective management of workload, resources and consumables in an efficient and effective manner.

3.1.3 Responsible for problem solving within their designated area, as well as decision making in pressurized situations. S/he must recognize the limitations of their professional boundaries and liaise with appropriate members of the multi-disciplinary team as required.

3.1.4 Develop links with the wider hospital network, including external agencies as required. S/he must communicate effectively with the multi-disciplinary team to promote a patient-focused quality service within their specialized area. S/he must demonstrate effective communication skills, the ability to facilitate and manage colleagues/trainees/students/others through learning processes and must have the ability to give constructive feedback as necessary. S/he should exhibit the presentation skills required to effectively deliver educational and information sessions to colleagues and others as required.

3.1.5 Participate in mentorship and coaching of students.

3.1.6 The Oncology radiation therapist will demonstrate evidence of effective planning and organizational skills including awareness of resource management. They must have the ability to manage deadlines and effectively handle multiple tasks.

3.1.7 Manages self, and where appropriate organizes others, to ensure effective workload prioritization and time management. S/he must recognize deficiencies in knowledge, skills and competency and take appropriate action.
3.1.8 Develops and maintain competence to practice through continuing professional development.
3.1.9 Applies clinical reasoning, critical thinking and problem solving skills to the organization, provision, management and evaluation of care.
3.1.10 Develops, implements and reviews applications and techniques appropriate to their specialist area. Contributing to improvement within the profession to meet the many technological and procedural advances and challenges of the future through promotion and development of advance practice/specialist roles within the profession.
3.1.11 Participate as required in human resource planning, recruitment and selection of staff, liaise with the Chief Radiation Therapist and other clinical staff to ensure work schedules, rostering, skills mix, staff deployment and work programs are effective as required.
3.1.12 Must undertake and facilitate performance and service reviews as required.
3.1.13 Develop and implement risk management and health and safety strategies in consultation with appropriate personnel.
3.1.14 Deputize for the Chief Radiation Therapist as required.

3.2 Competency Standard: Delegation and Supervision

Delegates and provides supervision to team members according to their competence and scope of practice.

Performance Criteria:

3.2.1 Delegates to others, activities within their abilities and scope of practice.
3.2.2. Uses a range of supportive strategies when supervising aspects of care delegated to others.
3.2.3. Maintains accountability and responsibility when delegating aspects of care to others.
3.2.4 Avoids inappropriate delegation.

4. Education, Learning and development

This domain defines the responsibilities of the Oncology Radiation Therapist to provide a practical/professional environment that encourages continuous.

4.1 Competency Standard: Education and facilitation

Performance Criteria:

4.1.1. Shares and disseminates professional knowledge and findings with others.
4.1.2. Acts as a resource person for others.
4.1.3. Contributes to the formal and informal education and professional development of students and colleagues facilitating and where appropriate coordinating learning opportunities.
4.1.4. Acts as an effective preceptor and/or mentor as assigned, undertaking appropriate preparation and updating to undertake the roles.
4.1.5. Takes opportunities to learn together with others in order to contribute to health care improvement.
4.1.6. Demonstrates the use of reflective practice. S/he must encourage use reflective practice in their clinical area.

4.1.7. Promotes awareness of best practices and implement change at local level and where appropriate or required at organizational or national level.

4.2 Competency Standard: Lifelong Learning

Assumes responsibility for own professional development through lifelong learning to ensure continued competence and performance improvement.

Performance Criteria

4.2.1 Maintain thorough up-to-date knowledge and understanding of necessary theory and the implications on radiotherapy practice. She must remain current in terms of relevant legislative and technological advances within their profession.

4.2.2 Promote awareness and education with respect to new developments and ensure that best practices are implemented and maintained.

4.2.3 Undertake regular self-assessment and reviews own practice through reflection, peer review, competency assessment, critical examination and evaluation.

4.2.4 Instigates planned updating knowledge and skills for safe, person-centered, evidence-based practice.

4.2.5 Actively engages in ongoing professional development and performance improvement of self and others.

4.2.6 Maintains a professional portfolio including evidence of continued competence, professional development and improvement as required for continuing registration in relevant jurisdiction.

4.3 Competency Standard: Using Data and Information Systems

Use data systems to enhance the quality and delivery of radiation therapy and patient care.

Performance Criteria

4.3.1. Acquires the information technology skills needed to inform and provide optimum healthcare care and document accurately outcomes of interventions.

4.3.2. Understands how to use technology and data to assist in problem identification and identification of deficiencies that can be remediated to enable improvements in patient care.

4.3.3. Analyses data accurately and comprehensively leading to appropriate interpretation of findings and development of implementation plans.

5. DOMAIN FIVE: Research and development

Uses research, evaluation, service improvement and audit findings to enhance the quality of patient care and protect the rights of those participating.

Performance Criteria:

5.1.1 Participates in activities that disseminate research findings such as publications, journal clubs, grand rounds and presentations.

5.1.2 Undertakes appropriate development to ensure competency to recruit, ensure informed consent is obtained, support involvement, facilitate, monitor and where appropriate advocate withdrawal of individuals participating in clinical research and evaluation.

5.1.3 Contributes to the development of knowledge by actively engaging in research studies at local, regional and national level, as well as initiating and conducting research as appropriate and in line with local, regional and national policies and procedures.

5.1.4 Demonstrates knowledge of research processes, research methodologies and audit.

References:

- The Society of Radiographers – UK – Scope of Practice 2013
- Irish Institute of Radiography and Radiation Therapy IIRRT – Scope of Practice 1st edition 2010
- Irish Institute of Radiography and Radiation Therapy IIRRT – Scope of Practice 2nd edition 2013
- Australian Institute of Radiography AIR – Advanced Practice for the Australian Medical Radiation Professions 2013
