

QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR ALLIED HEALTHCARE

What are Occupational Standards(OS)?

- OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

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Introduction

Qualifications Pack- Radiology Technician

SECTOR: HEALTHCARE

SUB-SECTOR: Allied Healthcare & Paramedics

OCCUPATION: Radiology Technician

REFERENCE ID: HSS/Q0201

ALIGNED TO: NCO-2004/NIL

Radiology Technician: also referred to as Radiologic technologist, Radiological technologist.

Brief Job Description: Radiology Technicians perform diagnostic imaging examinations such as X-rays, CT and MRI scans under the guidance of a Radiologist. Radiology Technicians are responsible for preparing patients and operating equipment for the test/tests, besides keeping patient records, adjusting equipment's based on patient need and test recommended and maintaining equipment.

Personal Attributes: Radiology Technicians must be able to interact with patient and their attendants and be a team players. They must also be polite and be able to calm and placate upset patients (and accompanying members). They should be able to work for long period of time in standing position and must be able direct, transfer, help patients reach the test location.

Job Details	Qualifications Pack Code	HSS/Q0201		
	Job Role	Radiology Technician		
	Credits (NSQF)	TBD	Version number	1.0
	Sector	Health	Drafted on	12/05/2013
	Sub-sector	Allied Health & Paramedics	Last reviewed on	22/05/2013
	Occupation	Radiology Technician	Next review date	22/12/2016
	NSQC Clearance on	18/05/2016		

Job Role	Radiology Technician
Role Description	Perform diagnostic imaging examinations such as X-rays, CT and MRI scans under the guidance of a Radiologist. Prepare patients and operating equipment for tests, keep patient records, adjusting equipment's based on patient need and test recommended and maintaining equipment. Prepare work schedules such as patient registered for the day, patients scheduled for different test, feedback on the quality of equipment, or manage a radiology department and assistant in overall management of radiology department.
NSQF level	4
Minimum Educational Qualifications*	Class XII in Science or Level 3 X-ray Technician with 3 years of experience in the field
Maximum Educational Qualifications*	Not Applicable
Training (Suggested but not mandatory)	Relevant professional qualification
Minimum Job Entry Age	18 years
Experience	Not Applicable
Applicable National Occupational Standards (NOS)	<p>Compulsory:</p> <ol style="list-style-type: none"> HSS/N0201: Follow radiological diagnostic needs of patients HSS/N0202: Prepare the patient and the room for the procedure HSS/N0203: Operate and oversee operation of radiologic equipment HSS/N0204: Process radiographic images HSS/N0205: Prepare and document reports

	<p>6. HSS/N0206: Recognise contrast induced adverse reactions</p> <p>7. HSS/N9601: Collate and communicate health information</p> <p>8. HSS/N9602: Ensure availability of medical and diagnostic supplies</p> <p>9. HSS/N9603: Act within the limits of one’s competence and authority</p> <p>10. HSS/N9606: Maintain a safe, healthy, and secure working Environment</p> <p>11. HSS/N9608: Follow radiation safety guidelines</p> <p>12. HSS/N9609: Follow biomedical waste disposal protocols</p> <p>13. HSS/N9610: Follow infection control policies and procedures</p> <p>14. HSS/N9611: Monitor and assure quality</p> <p>Note: All standards, procedures and equipment should comply with Atomic Energy Regulatory Board(AERB) regulations and rules</p> <p>Optional N.A</p>
Performance Criteria	As described in the relevant OS units

Definitions	Keywords /Terms	Description
	Core Skills/Generic Skills	Core Skills or Generic Skills are a group of skills that are essential to learning and working in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
	Computed Tomography Scan	A scan that provides cross-sectional views (slices) of the body. A computed tomography (CT) scan is an imaging method that uses x-rays to create pictures of cross-sections of the body.
	Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
	Fluoroscopy	Examination of the tissues and deep structures of the body by x-ray, using the fluoroscope or video fluoroscopy
	Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of OS.
	Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.

Knowledge and Understanding	Knowledge and Understanding are statements that together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
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Magnetic Resonance Imaging Scan	A scan that builds a 2-D or 3-D map of the different tissue types within the body. An MRI (magnetic resonance imaging) scan is an imaging test that uses powerful magnets and radio waves to create pictures of the body. It does not use radiation (x-rays). Single MRI images are called slices. The images can be stored on a computer or printed on film. One exam produces dozens or sometimes hundreds of images.
National Occupational Standards (NOS)	NOS are Occupational Standards that apply uniquely in the Indian context.
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Organisational Context	Organisational Context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task.
Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Qualifications Pack(QP)	Qualifications Pack comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A Qualifications Pack is assigned a unique qualification pack code.
Scope	Scope is the set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on the quality of performance required.
Sector	Sector is a conglomeration of different business operations having similar businesses and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-functions	Sub-functions are sub-activities essential to fulfil the achieving the objectives of the function.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Ultrasound	An ultrasound machine creates images that allow various organs in the body to be examined. The machine sends out high-frequency sound waves, which reflect off body structures. A computer receives these reflected waves and uses them to create a picture. This scan is well known for its use in obstetrics and gynaecology. Also used to check circulation and examine the heart
Unit Code	Unit Code is a unique identifier for an OS unit, which can be denoted with either "O" 'N'.
Unit Title	Unit Title gives a clear overall statement about what the incumbent should be able to do.

Vertical	Vertical may exist within a sub-sector representing different domain areas or the client industries served by the industry.
X-Ray	<p>A scan that looks through tissues to examine bones, cavities and foreign objects. X-rays are a type of electromagnetic radiation, just like visible light. An x-ray machine sends individual x-ray particles through the body. The images are recorded on a computer or film.</p> <ul style="list-style-type: none"> Structures that are dense (such as bone) will block most of the xray particles, and will appear white Metal and contrast media (special dye used to highlight areas of the body) will also appear white Structures containing air will be black, and muscle, fat, and fluid will appear as shades of grey

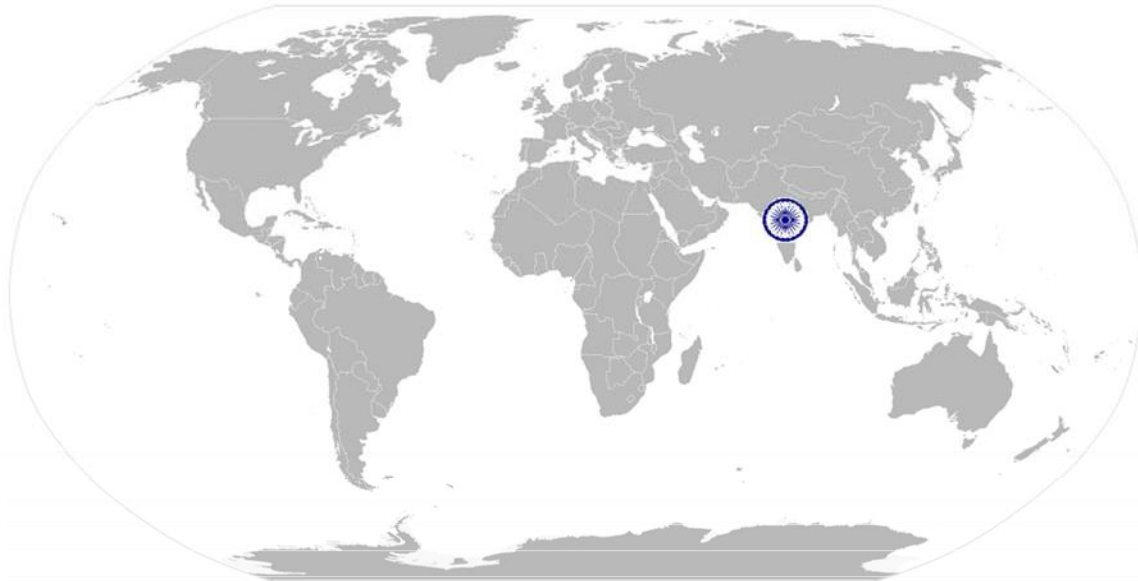
Acronyms

Keywords /Terms	Description
CAT	Computed Axial Tomography
CT	Computed Tomography
HSSC	Health Sector Skills Council
MHRD	Ministry of Human Resource Development
MRI	Magnetic Resonance Imaging
NOS	National Occupational Standard(s)
NVEQF	National Vocational Education Qualifications Framework
NVQF	National Vocational Qualifications Framework
OS	Occupational Standard(s)
QP	Qualification Pack
SSC	Sector Skill Council

HSS/N0201

Follow radiological diagnostic needs of patients

National Occupational Standard



Overview

This Occupational Standard describes the knowledge, understanding and skills required of a Radiology Technician to determine the radiological diagnostic needs of patients..

HSS/N0201

Follow radiological diagnostic needs of patients

National Occupational Standard

Unit Code	HSS/N0201
Unit Title	Follow radiological diagnostic needs of patients
(Task)	Follow radiological diagnostic needs of patients
Description	This OS unit is about determining the type and mode of diagnostic scan needed for a patient based on the recommendation of the physician and the prescription
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> Reading requests or instructions from physicians/ health service providers , taking medical history of the patient, Determining x-ray, CT scan or MRI scan needs of patient
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Explain the subdivisions of anatomy, terms of location and position, fundamental planes, vertebrate structure of man, organisation of the body cells and tissues including:</p> <ol style="list-style-type: none"> The basics of the cardio vascular system (structure and functions of various parts of the heart, arterial and venous system, brief account on common cardiovascular disorders) The basics of the respiratory system (various parts of respiratory system and their functions, physiology of respiration) The basics of the digestive system (names and various parts of digestive system- liver, spleen, gall bladder, pancreas, buccal cavity, pharynx, oesophagus, stomach, intestine etc.-physiology of digestion and absorption) The basics of the urinary system (various parts of urinary system and its function-structure and function of kidneys-physiology of urine formation - pathophysiology of renal disease and oedema) The basics of the reproductive system (physiology and anatomy of male & female reproductive system-prostate & uterus & ovaries etc.) The basics of the musculoskeletal system (classification of bones & joints, structure of skeleton –structure of skeletal muscle – physiology of muscle contraction) The basics of the nervous system (various parts of nervous system-brain and its parts, functions of nervous system - spinal cord & nerves) The basics of the ear, nose, throat and eye (elementary knowledge of structure and functions of organs of taste, smell, hearing, vision) The basics of the endocrine system (endocrine glands , hormones and functions- thyroid, parathyroid, suprarenal, pituitary, pituitary and thymus) The basics of the haemopoietic and lymphatic system (name of the blood vessels & lymph gland locations) The basics of the surface anatomy & surface markings of human body Common cancers and special radiological techniques for diagnosis and management of these e.g. Mammography for breast cancer <p>PC2. Explain the pathology of various systems: cardiovascular system, respiratory system, central nervous system, musculoskeletal system, GIT, GUT and reproductive system</p> <p>PC3. Explain the pathology of radiation injury and malignancies</p> <p>PC4. Understand specific requests of physicians with respect to the scans required</p>

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	<p>PC5. Take medical history of the patient and document it as required</p> <p>PC6. Understand and interpret instructions and requirements documented by the physician in the patient’s prescription</p> <p>PC7. Determine the radiological diagnostic tests required for the patient based on the physician’s prescription and the medical history</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. Internal procedures and policies with respect to radiological equipment and scans</p> <p>KA2. Internal procedures and policies on safety precautions to be taken when operating radiological equipment</p> <p>KA3. Administrative policies and disciplinary procedures</p> <p>KA4. Mandatory regulations on safety and risk mitigation when operating radiological equipment</p> <p>KA5. Routine basic maintenance procedures for radiological equipment</p> <p>KA6. How to contact vendors and suppliers for maintenance and repair of radiological equipment</p> <p>KA7. Inventory policy of the organisation with regard to radiological supplies, contrast agents and other materials used in scans</p> <p>KA8. How to order new supplies</p> <p>KA9. Documentation required of medical history of patient, procedures undertaken and reports</p> <p>KA10. Medico-legal considerations for Radiology Technicians including clinical and ethical responsibilities, definitions of misconduct and malpractice and handling female patients</p> <p>KA11. Penalties for misconduct and malpractice</p>
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Essentials of the subdivisions of anatomy, terms of location and position, fundamental planes, vertebrate structure of man, organisation of the body cells and tissues including:</p> <ol style="list-style-type: none"> a. The cardio vascular system b. The respiratory system c. The digestive system d. The urinary system e. The reproductive system f. The nervous system g. The ear, nose, throat and eye h. The endocrine system i. The haemopoietic and lymphatic system j. The surface anatomy & surface markings of human body <p>KB2. The pathology of various systems: cardiovascular system, respiratory system, central nervous system, musculoskeletal system, gastro-intestinal tract and reproductive system</p> <p>KB3. Basic principles and practical aspects of x-ray machines</p> <p>KB4. Basics of CT machines (basics of plain studies, contrast studies, special procedures)</p> <p>KB5. Basics of MRI machines (basic principles, imaging methods, plain & contrast studies, image contrast, factors affecting image quality)</p>

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	<p>KB6. How to take medical history of the patient and document it as required</p> <p>KB7. How to interpret instructions and requirements documented by the physician in the patient's prescription</p> <p>KB8. How to determine the radiological diagnostic tests required for the patient based on the physician's prescription and the medical history</p>
<p>A. Core Skills/ Generic Skills</p>	<p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Write short notes to co-workers and clerical staff to compile information about particular patients, describe unusual pathologies or ask for on-site reference material</p> <p>SA2. Write brief observations about pathologies that may affect diagnoses on patients' charts</p> <p>SA3. Write detailed notes about scans done</p> <p>SA4. Write descriptions of accidents and incidents on reporting forms when something unusual occurs during patient exams or scanning procedures</p> <p>SA5. Write memos to advise, inform or direct staff working in other hospital or clinic departments or units</p> <p>SA6. Complete patients' medical history forms by entering the patients' names, treatments received to date and current medical conditions</p>
	<p>Reading Skills</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA7. Read scan instructions in notes attached to patients' files</p> <p>SA8. Read communications about scheduling, training and updates to internal procedures from co-workers, supervisors or hospital administrators</p> <p>SA9. Read protocol updates and hospital policy changes</p> <p>SA10. Read and follow all specified procedures in the multi-page treatment prescriptions prepared by referring physicians</p> <p>SA11. Review protocols for scanning and identifying non-routine or atypical pathologies in procedure manuals</p> <p>SA12. Read reports of varying lengths completed by physicians, hospital or clinic administrators and supervising technologists</p> <p>SA13. Read user manuals for various types of radiological equipment when troubleshooting faults with scanners or imaging computers</p>
	<p>Oral Communication (Listening and Speaking skills)</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA14. Speak to patients to explain protocols for procedures or examinations, obtain information about the patient's status and discuss current diagnoses and treatment options</p> <p>SA15. Speak with reception and clerical staff to determine and confirm the number of appointments for the day, request patient information from files and loggings of appointments for patients requiring additional testing or treatment</p> <p>SA16. Discuss scheduling, treatment room assignments and workload responsibilities with employees and co-workers</p> <p>SA17. Order supplies such as contrast media and radioactive pharmaceuticals from suppliers and hospital dispensaries</p>

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	<p>SA18. Discuss procedural suggestions, equipment malfunctions and personnel problems with the senior technologists, unit or department supervisors or administrative staff</p> <p>SA19. Comfort patients who may be frightened or upset during scanning procedures</p> <p>SA20. Discuss patients' status with nurses, social workers, dieticians or other members of the extended health care team</p>
B. Professional Skills	<p>Decision Making</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. Choose the correct film size for the sizes of the areas to be scanned</p> <p>SB2. Decide on a course of action when physicians have requested types of radiographs or scans for patients who cannot be positioned in a typical way</p> <p>SB3. Decide which patients will be processed first when they receive multiple requisitions at the same time, or during emergencies</p> <p>SB4. Decide if examinations can be completed under contraindicative or complicating circumstances</p> <p>Plan and Organize</p> <p>The user/individual on the job needs to know and understand:</p> <p>SB5. How to determine the order and priority of work tasks subject to confirmation or approval from supervisors</p> <p>SB6. How to integrate work plans with those of the extended health care teams</p> <p>SB7. How to schedule daily work priorities based on the demands of the clinic, laboratory or hospital</p> <p>SB8. How to schedule patient-load based on emergency or appointment priority</p> <p>Customer Centricity</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB9. Comfort patients who may be frightened or upset during scanning procedures</p> <p>SB10. Liaise with members of the extended health care team to ensure the needs of the patient are taken care of</p> <p>Problem Solving</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB11. Indicate important scanning parameters on x-rays or scanned images, such as appropriate spatial or directional indicators when these have been neglected earlier in the process</p> <p>SB12. Recommend alternate scan types/ positions and discuss these with the radiologist when the scan recommended by the physician is not possible or is difficult for the patient</p> <p>SB13. Re-schedule appointments when patients arriving for exams are late or have not taken the necessary pre-appointment measures such as fasting or refraining from taking interfering medications</p> <p>SB14. Troubleshoot radiological equipment when a minor fault occurs</p> <p>Analytical Thinking</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB15. Analyse the prescription of the patient and decide on the best position to take the recommended scan</p> <p>SB16. Analyse the scan images to determine quality and clarity</p> <p>SB17. Analyse the inventory of supplies to decide when to place an order to</p>

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Follow radiological diagnostic needs of patients

	replenish these
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB18. Make preliminary judgements about the seriousness of patients' injuries SB19. Evaluate the quality of radiographs, digital images and scans

NOS Version Control

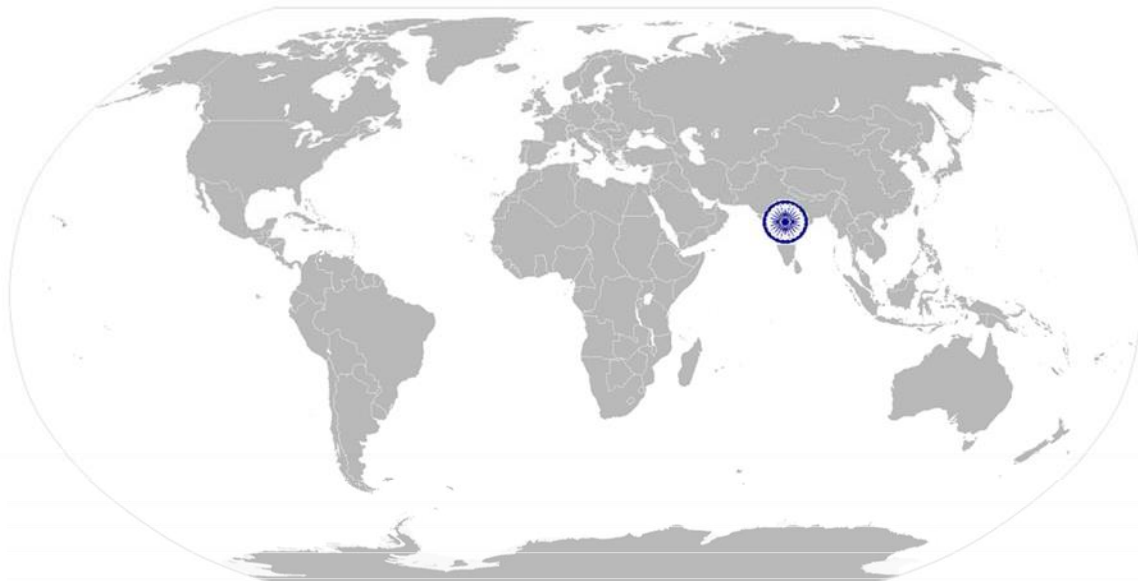
NOS Code	HSS/N0201		
Credits (NSQF)	TBD	Version number	1.0
Industry	Health	Drafted on	12/05/13
Industry Sub-sector	Allied Health and Paramedics	Last reviewed on	22/05/13
Occupation	Radiology Technician	Next review date	22/12/16



HSS/N0202

Prepare the patient and the room for the procedure

National Occupational Standard



Overview

This Occupational Standard describes the knowledge, understanding and skills required of a Radiology Technician to prepare the patient and the room for the procedure. This includes positioning the patient correctly and taking safety precautions.

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Prepare the patient and the room for the procedure

National Occupational Standard

Unit Code	HSS/N0202
Unit Title	Prepare the patient and the room for the procedure
(Task)	Prepare the patient and the room for the procedure
Description	This OS unit is about preparing the room and equipment for a scan and positioning the patient according to the prescription
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> Setting up the equipment to be used , Ensuring safety precautions are taken to protect self, patients, staff and others from exposure to radiation , Positioning the patient correctly
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Prepare the room, apparatus and instruments for an x-ray, CT scan or MRI scan</p> <p>PC2. Set up the X-ray machine, MRI machine or CT scan machine for the procedure</p> <p>PC3. Position the patient correctly for an x-ray in the following positions:</p> <ol style="list-style-type: none"> Erect Sitting Supine Prone Lateral Oblique Decubitus <p>PC4. Explain relative positions of x-ray tube and patient and the relevant exposure factors related to these</p> <p>PC5. Explain the use of accessories such as Radiographic cones, grid and positioning aids</p> <p>PC6. Explain the anatomic and physiological basis of the procedure to be undertaken</p> <p>PC7. Explain the radiographic appearances of both normal and common abnormal conditions where elementary knowledge of the pathology involved would ensure application of the appropriate radiographic technique</p> <p>PC8. Position the patient correctly for a Computed Tomography scan</p> <p>PC9. Position the patient correctly for an MRI scan</p> <p>PC10. Apply modifications in positioning technique for various disabilities and types of subject</p> <p>PC11. Explain the use of contrast materials for a CT scan and how to administer them under supervision of a radiologist</p> <p>PC12. Explain the use of MRI Contrast agents and how to administer them under supervision of a radiologist</p> <p>PC13. Manage a patient with contrast reaction</p> <p>PC14. Explain the principles of radiation physics detection and measurement</p> <p>PC15. Explain the biological effects of radiation</p> <p>PC16. Explain the principles of radiation protection:</p>

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Prepare the patient and the room for the procedure

	<p>a. Maximum permissible exposure concept b. Annual dose equivalent limits (ADEL) ALARA concept c. International recommendations and current code of practice for the protection of persons against ionising radiation from medical and dental use PC17. Explain the use of protective materials: a. Lead b. Lead – impregnated substances c. Building materials d. Concept of barriers e. Lead equivalents and variations f. Design of x-ray tubes related to protection. g. Structural shielding design (work-load, use factor, occupancy factor, distance) PC18. Explain the instruments of radiation protection, use of gonad shield and practical methods for reducing radiation dose to the patient PC19. Ensure protection of self, patients, departmental staff and public from radiation through use of protection instruments and monitoring personnel and the work area</p>
Knowledge and Understanding (K)	
<p>A. Organizational Context (Knowledge of the company / organization and its processes)</p>	<p>The user/individual on the job needs to know and understand: KA1. Internal procedures and policies with respect to radiological equipment and scans KA2. Internal procedures and policies on safety precautions to be taken when operating radiological equipment KA3. Administrative policies and disciplinary procedures KA4. Mandatory regulations on safety and risk mitigation when operating radiological equipment KA5. Routine basic maintenance procedures for radiological equipment KA6. How to contact vendors and suppliers for maintenance and repair of radiological equipment KA7. Inventory policy of the organisation with regard to radiological supplies, contrast agents and other materials used in scans KA8. How to order new supplies KA9. Documentation required of medical history of patient, procedures undertaken and reports KA10. Medico-legal considerations for Radiology Technicians including clinical and ethical responsibilities, definitions of misconduct and malpractice and handling female patients KA11. Penalties for misconduct and malpractice</p>
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand: KB1. The various positioning techniques for taking X-ray scans: a. Erect b. Sitting c. Supine d. Prone</p>

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Prepare the patient and the room for the procedure

	<p>e. Lateral f. Oblique g. Decubitus etc. KB2. How to position a patient for taking a CT or MRI scan based on the prescription of the physician KB3. The supplies and materials required for taking an X-ray, CT scan or MRI scan KB4. How to operate apparatus required for taking an X-ray, CT scan or MRI scan KB5. The various contrast agents used for CT or MRI scans such as: a. Barium swallow b. Barium meal c. Barium enema (single and double contrast) KB6. Classification of radiological contrast media KB7. The need for radiological contrast media KB8. Various methods of administration of contrast media and dosage KB9. Symptoms of reactions to contrast media KB10. Role of the Radiology Technician in management of patient with contrast reaction KB11. How to manage a patient with contrast reaction KB12. How to protect self, patients, departmental staff and public from radiation exposure through use of protection instruments and monitoring personnel and the work area</p>
<p>A. Core Skills/ Generic Skills</p>	<p>Writing Skills</p>
	<p>The user/ individual on the job needs to know and understand how to: SA1. Write short notes to co-workers and clerical staff to compile information about particular patients, describe unusual pathologies or ask for on-site reference material SA2. Write brief observations about pathologies that may affect diagnoses on patients' charts SA3. Write detailed notes about scans done SA4. Write descriptions of accidents and incidents on reporting forms when something unusual occurs during patient exams or scanning procedures SA5. Write memos to advise, inform or direct staff working in other hospital or clinic departments or units SA6. Complete patients' medical history forms by entering the patients' names, treatments received to date and current medical conditions</p>
	<p>Reading Skills</p> <p>The user/individual on the job needs to know and understand how to: SA7. Read scan instructions in notes attached to patients' files SA8. Read communications about scheduling, training and updates to internal procedures from co-workers, supervisors or hospital administrators SA9. Read protocol updates and hospital policy changes SA10. Read and follow all specified procedures in the multi-page treatment prescriptions prepared by referring physicians SA11. Review protocols for scanning and identifying non-routine or atypical pathologies in procedure manuals SA12. Read reports of varying lengths completed by physicians, hospital or clinic</p>

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Prepare the patient and the room for the procedure

	<p>administrators and supervising technologists</p> <p>SA13. Read user manuals for various types of radiological equipment when troubleshooting faults with scanners or imaging computers</p>
	<p>Oral Communication (Listening and Speaking skills)</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA14. Speak to patients to explain protocols for procedures or examinations, obtain information about the patient's status and discuss current diagnoses and treatment options</p> <p>SA15. Speak with reception and clerical staff to determine and confirm the number of appointments for the day, request patient information from files and loggings of appointments for patients requiring additional testing or treatment</p> <p>SA16. Discuss scheduling, treatment room assignments and workload responsibilities with employees and co-workers</p> <p>SA17. Order supplies such as contrast media and radioactive pharmaceuticals from suppliers and hospital dispensaries</p> <p>SA18. Discuss procedural suggestions, equipment malfunctions and personnel problems with the senior technologists, unit or department supervisors or administrative staff</p> <p>SA19. Comfort patients who may be frightened or upset during scanning procedures</p> <p>SA20. Discuss patients' status with nurses, social workers, dieticians or other members of the extended health care team</p>
B. Professional Skills	<p>Decision Making</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. Decide the supplies and materials required for the procedure</p> <p>SB2. Choose the correct film size for the sizes of the areas to be scanned</p> <p>SB3. Decide on a course of action when physicians have requested types of radiographs or scans for patients who cannot be positioned in a typical way</p> <p>SB4. Decide which patients will be processed first when they receive multiple requisitions at the same time, or during emergencies</p> <p>SB5. Decide if examinations can be completed under contraindicative or complicating circumstances</p>
	<p>Plan and Organize</p> <p>The user/individual on the job needs to know and understand:</p> <p>SB6. How to determine the order and priority of work tasks subject to confirmation or approval from supervisors</p> <p>SB7. How to integrate work plans with those of the extended health care teams</p> <p>SB8. How to schedule daily work priorities based on the demands of the clinic, laboratory or hospital</p> <p>SB9. How to schedule patient-load based on emergency or appointment priority</p>
	<p>Customer Centricity</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB10. Comfort patients who may be frightened or upset during scanning procedures</p> <p>SB11. Liaise with members of the extended health care team to ensure the needs of the patient are taken care of</p>
	<p>Problem Solving</p>

HSS/N0202

Prepare the patient and the room for the procedure

	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB12. Indicate important scanning parameters on x-rays or scanned images, such as appropriate spatial or directional indicators when these have been neglected earlier in the process</p> <p>SB13. Recommend alternate scan types/ positions and discuss these with the radiologist when the scan recommended by the physician is not possible or is difficult for the patient</p> <p>SB14. Re-schedule appointments when patients arriving for exams are late or have not taken the necessary pre-appointment measures such as fasting or refraining from taking interfering medications</p> <p>SB15. Troubleshoot radiological equipment when a minor fault occurs</p>
	<p>Analytical Thinking</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB16. Analyse the prescription of the patient and decide on the best position to take the recommended scan</p> <p>SB17. Analyse the scan images to determine quality and clarity</p> <p>SB18. Analyse the inventory of supplies to decide when to place an order to replenish these</p>
	<p>Critical Thinking</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB19. Make preliminary judgements about the seriousness of patients' injuries</p> <p>SB20. Evaluate the quality of radiographs, digital images and scans</p>

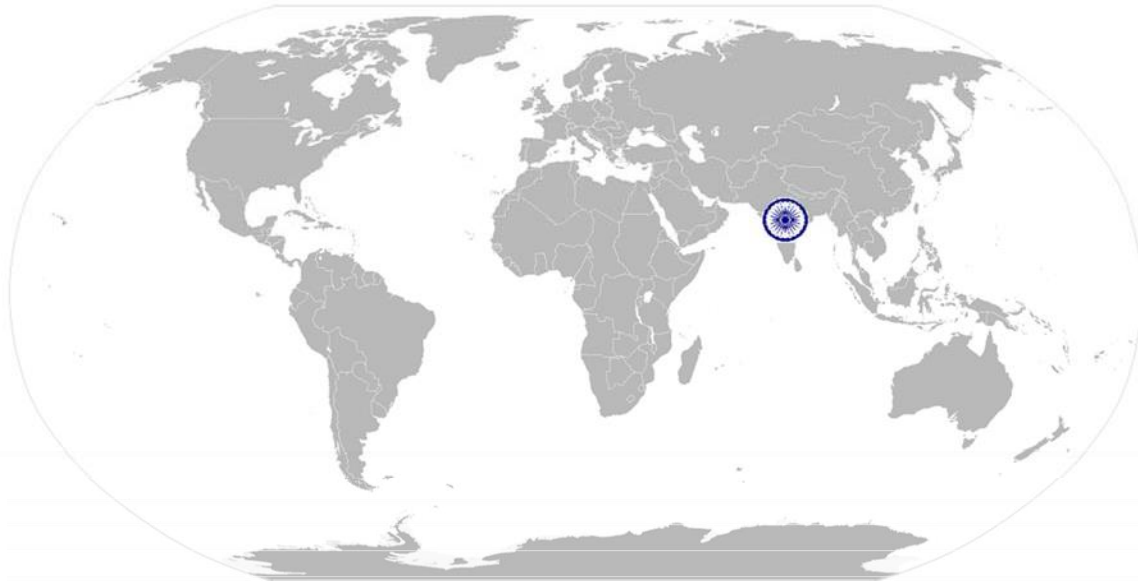
NOS Version Control

NOS Code	HSS/N0202		
Credits (NSQF)	TBD	Version number	1.0
Industry	Health	Drafted on	12/05/13
Industry Sub-sector	Allied Health and Paramedics	Last reviewed on	22/05/13
Occupation	Radiology Technician	Next review date	22/12/16

HSS/N0203

Operate and oversee operation of radiologic equipment

National Occupational Standard



Overview

This Occupational Standard describes the knowledge, understanding and skills required of a Radiology Technician to operate and oversee operation of radiologic equipment to perform scans prescribed for patients.

HSS/N0203

Operate and oversee operation of radiologic equipment

National Occupational Standard

Unit Code	HSS/N0203
Unit Title	Operate and oversee operation of radiologic equipment
(Task)	Operate and oversee operation of radiologic equipment
Description	This OS unit is about operating and overseeing operation of radiologic equipment to perform the scans required for the patient
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> Selecting and performing basic views (projections) and conventional contrast studies using appropriate radiographic parameters and equipment ,Carrying out routine procedures for troubleshooting and maintenance of imaging and processing systems
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Describe the construction and operation of general radiographic equipment</p> <p>PC2. Describe the construction and operation of advanced imaging equipment including CT and MRI</p> <p>PC3. Reliably perform all non-contrast plain Radiography, conventional contrast studies and non-contrast plain radiography in special situations</p> <p>PC4. Apply quality control procedures for all radiologic equipment</p> <p>PC5. Control and manipulate parameters associated with exposure and processing to produce a required image of desirable quality</p> <p>PC6. Practise the procedures employed in producing a radiographic image</p> <p>PC7. Describe methods of measuring exposure and doses of radiographic beams</p> <p>PC8. Help in administration of correct contrast dosage</p> <p>PC9. Discuss and apply radiation protection principles and codes of practice</p> <p>PC10. Demonstrate an understanding of processing of images in digital form and be familiar with recent advances in imaging</p> <p>PC11. Set up the X-ray machine, MRI machine or CT scan machine for the procedure</p> <p>PC12. Carry out routine procedures associated with maintenance of imaging and processing systems</p> <p>PC13. Ensure protection of patients, departmental staff and public from radiation through use of protection instruments and monitoring personnel and the work area</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. Internal procedures and policies with respect to radiological equipment and scans</p> <p>KA2. Internal procedures and policies on safety precautions to be taken when operating radiological equipment</p> <p>KA3. Administrative policies and disciplinary procedures</p> <p>KA4. Mandatory regulations on safety and risk mitigation when operating radiological equipment</p> <p>KA5. Routine basic maintenance procedures for radiological equipment</p> <p>KA6. How to contact vendors and suppliers for maintenance and repair of radiological equipment</p> <p>KA7. Inventory policy of the organisation with regard to radiological supplies,</p>

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Operate and oversee operation of radiologic equipment

	<p>contrast agents and other materials used in scans KA8. How to order new supplies KA9. Documentation required of medical history of patient, procedures undertaken and reports KA10. Medico-legal considerations for Radiology Technicians including clinical and ethical responsibilities, definitions of misconduct and malpractice and handling female patients KA11. Penalties for misconduct and malpractice</p>
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. The basic principles essential for operation of an X-ray machine:</p> <ol style="list-style-type: none"> X-Ray and related equipment Main electric supply and distribution Diagnostic X-Ray circuits/Exposure timers/AEC etc. Specialized X-Ray generators - high frequency/shared Cassettes/construction/types/care Grid/construction/types/uses Intensifying screens/construction/type/care/uses Film/construction/type Diagnostic X-Ray tubes (past/present/future) Tube rating and tube supports X-Ray tables/bucky/bucky stands X-Ray films and film processing Image characteristics Quality assurance Presentation and viewing of radiographs <p>KB2. The factors essential for operation of a CT machine:</p> <ol style="list-style-type: none"> Various generations of scanners Advancement in CT technology (helical/spiral and multi slice) Ultra-fast scanners Computerized Tomography equipment System components CT performance parameters Basic requirements and controls, attachments Types of movements and applications Effect on image of variation in focus object distance Object film distance, exposure angle, tube movement pattern Image quality and methods of image reconstruction Radiation dose measurements Technical aspects of quality assurance <p>KB3. The factors essential for operation of an MRI machine:</p> <ol style="list-style-type: none"> Advantage over other imaging modalities Equipment terminology Physical principles

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Operate and oversee operation of radiologic equipment

	<ul style="list-style-type: none"> d) NMR signals e) Pulse sequences f) Spectroscopy parameters g) Hardware h) Site selection and safety i) Image formation and storage devices <p>KB4. The pathology of various systems: cardiovascular system, respiratory system, central nervous system, musculoskeletal system, gastro-intestinal tract and reproductive system</p> <p>KB5. Basic principles and practical aspects of x-ray machines</p> <p>KB6. Basics of CT machines (basics of plain studies, contrast studies, special procedures)</p> <p>KB7. Basics of MRI machines (basic principles, imaging methods, plain & contrast studies, image contrast, factors affecting image quality)</p>
<p>A. Core Skills/ Generic Skills</p>	<p>Writing Skills</p>
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Write short notes to co-workers and clerical staff to compile information about particular patients, describe unusual pathologies or ask for on-site reference material</p> <p>SA2. Write brief observations about pathologies that may affect diagnoses on patients' charts</p> <p>SA3. Write detailed notes about scans done</p> <p>SA4. Write descriptions of accidents and incidents on reporting forms when something unusual occurs during patient exams or scanning procedures</p> <p>SA5. Write memos to advise, inform or direct staff working in other hospital or clinic departments or units</p> <p>SA6. Complete patients' medical history forms by entering the patients' names, treatments received to date and current medical conditions</p>
	<p>Reading Skills</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA7. Read scan instructions in notes attached to patients' files</p> <p>SA8. Read communications about scheduling, training and updates to internal procedures from co-workers, supervisors or hospital administrators</p> <p>SA9. Read protocol updates and hospital policy changes</p> <p>SA10. Read and follow all specified procedures in the multi-page treatment prescriptions prepared by referring physicians</p> <p>SA11. Review protocols for scanning and identifying non-routine or atypical pathologies in procedure manuals</p> <p>SA12. Read reports of varying lengths completed by physicians, hospital or clinic administrators and supervising technologists</p> <p>SA13. Read user manuals for various types of radiological equipment when troubleshooting faults with scanners or imaging computers</p>
	<p>Oral Communication (Listening and Speaking skills)</p> <p>The user/individual on the job needs to know and understand how to:</p>

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Operate and oversee operation of radiologic equipment

	<p>SA14. Speak to patients to explain protocols for procedures or examinations, obtain information about the patient's status and discuss current diagnoses and treatment options</p> <p>SA15. Speak with reception and clerical staff to determine and confirm the number of appointments for the day, request patient information from files and loggings of appointments for patients requiring additional testing or treatment</p> <p>SA16. Discuss scheduling, treatment room assignments and workload responsibilities with employees and co-workers</p> <p>SA17. Order supplies such as contrast media and radioactive pharmaceuticals from suppliers and hospital dispensaries</p> <p>SA18. Discuss procedural suggestions, equipment malfunctions and personnel problems with the senior technologists, unit or department supervisors or administrative staff</p> <p>SA19. Comfort patients who may be frightened or upset during scanning procedures</p> <p>SA20. Discuss patients' status with nurses, social workers, dieticians or other members of the extended health care team</p>
<p>B. Professional Skills</p>	<p>Decision Making</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. Choose the correct film size for the sizes of the areas to be scanned</p> <p>SB2. Decide on a course of action when physicians have requested types of radiographs or scans for patients who cannot be positioned in a typical way</p> <p>SB3. Decide which patients will be processed first when they receive multiple requisitions at the same time, or during emergencies</p> <p>SB4. Decide if examinations can be completed under contraindicative or complicating circumstances</p>
	<p>Plan and Organize</p>
	<p>The user/individual on the job needs to know and understand:</p> <p>SB5. How to determine the order and priority of work tasks subject to confirmation or approval from supervisors</p> <p>SB6. How to integrate work plans with those of the extended health care teams</p> <p>SB7. How to schedule daily work priorities based on the demands of the clinic, laboratory or hospital</p> <p>SB8. How to schedule patient-load based on emergency or appointment priority</p>
	<p>Customer Centricity</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB9. Comfort patients who may be frightened or upset during scanning procedures</p> <p>SB10. Liaise with members of the extended health care team to ensure the needs of the patient are taken care of</p>
	<p>Problem Solving</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB11. Indicate important scanning parameters on x-rays or scanned images, such as appropriate spatial or directional indicators when these have been neglected earlier in the process</p> <p>SB12. Recommend alternate scan types/ positions and discuss these with the radiologist when the scan recommended by the physician is not possible or is difficult for the patient</p>

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Operate and oversee operation of radiologic equipment

	SB13. Re-schedule appointments when patients arriving for exams are late or have not taken the necessary pre-appointment measures such as fasting or refraining from taking interfering medications
	SB14. Troubleshoot radiological equipment when a minor fault occurs
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB15. Analyse the prescription of the patient and decide on the best position to take the recommended scan SB16. Analyse the scan images to determine quality and clarity SB17. Analyse the inventory of supplies to decide when to place an order to replenish these
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB18. Make preliminary judgements about the seriousness of patients' injuries SB19. Evaluate the quality of radiographs, digital images and scans

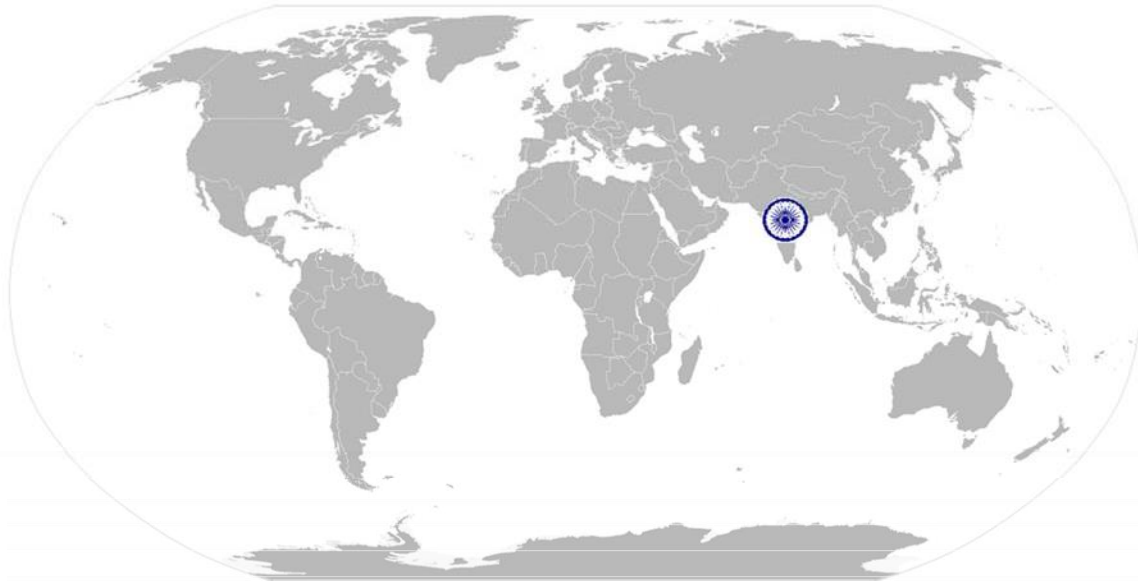
NOS Version Control

NOS Code	HSS/N0203		
Credits (NSQF)	TBD	Version number	1.0
Industry	Health	Drafted on	12/05/13
Industry Sub-sector	Allied Health and Paramedics	Last reviewed on	22/05/13
Occupation	Radiology Technician	Next review date	22/12/16

HSS/N0204

Process radiographic images

National Occupational Standard



Overview

This Occupational Standard describes the knowledge, understanding and skills required of a Radiology Technician to process radiographic images

HSS/N0204

Process radiographic images

National Occupational Standard

Unit Code	HSS/N0204
Unit Title	Process radiographic images
(Task)	Process radiographic images
Description	This OS unit is about processing radiographic images
Scope	This unit/task covers the following: <ul style="list-style-type: none"> Processing radiographic images , Carrying out quality control tests on images obtained
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Processing radiographic images , Carrying out quality control tests on images obtained	To be competent, the user/individual on the job must be able to: PC1. Explain the principles of radiographic imaging PC2. Apply knowledge of radiographic imaging to the production of radiographs and the assessment of image quality PC3. Understand the construction and operation of image processing equipment PC4. Control and manipulate parameters associated with exposure and processing to produce a required image of desirable quality PC5. Perform X-ray film / image processing techniques (including dark room techniques) PC6. Explain and implement the fundamentals, concepts and applications of processing of images in digital form using computer based systems PC7. Carry out quality control for automatic film processing, evaluate and act on results
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. Internal procedures and policies with respect to radiological equipment and scans KA2. Internal procedures and policies on safety precautions to be taken when operating radiological equipment KA3. Administrative policies and disciplinary procedures KA4. Mandatory regulations on safety and risk mitigation when operating radiological equipment KA5. Routine basic maintenance procedures for radiological equipment KA6. How to contact vendors and suppliers for maintenance and repair of radiological equipment KA7. Inventory policy of the organisation with regard to radiological supplies, contrast agents and other materials used in scans KA8. How to order new supplies KA9. Documentation required of medical history of patient, procedures undertaken and reports KA10. Medico-legal considerations for Radiology Technicians including clinical and ethical responsibilities, definitions of misconduct and malpractice and handling female patients KA11. Penalties for misconduct and malpractice

HSS/N0204

Process radiographic images

B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. The equipment for processing X-ray images:</p> <ol style="list-style-type: none"> a) X-ray Films and X-ray cassettes b) Intensifying screens c) X-ray films types structure & quality – choosing films for different studies d) Dry & wet processing e) film processing methods - manual and automatic processing of conventional & modern images f) types & maintenance of processing rooms and image processing equipment g) systems advantages & disadvantages of day light systems h) Typical processing faults i) Production of best quality images in glossy prints and paper prints etc. j) Uses of intensifying screen, fluorescence and structure of intensifying screens <p>KB2. Functions of equipment used for film processing:</p> <ol style="list-style-type: none"> a) Functions of various components b) Film roller transport - transport time, film feed system, c) Importance and relation to temp, fixed and variable time cycles. d) Care and maintenance (cleaning routine and methods of cleaning) <p>KB3. Functions and fundamentals of a Dark Room</p> <ol style="list-style-type: none"> a) Setting up the processing area b) Dark room design, construction, illumination, entrance safe lighting – types c) Storage, shelving of films d) Cleaning and maintenance <p>KB4. Techniques and principles of Film Processing</p> <ol style="list-style-type: none"> a) Principles of Acidity, alkalinity, pH, the processing cycle, development, developer solution b) Principles of Fixing, fixer solution, washing, drying replenishment, checking and adjusting c) Replenishment rates, manual and automatic processing d) Silver recovery e) Auto and manual chemicals <p>KB5. Fundamentals of X-Ray film and Image processing</p> <ol style="list-style-type: none"> a) Composition of single and double coated radiographic films, structure of emulsion, film characteristics (speed, base + fog, gamma, latitude) b) effect of grain size on film response to exposure, interpretation of characteristics curve c) Latent image formation ; process of film developing (composition of fixer, developer and other processing solution) d) common errors and faults while processing (densitometry), automatic processing (processing cycle), developer replenishment, silver e) recovery and economics
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Process radiographic images

	<ul style="list-style-type: none"> f) Image intensifiers and cassettes (structure and function) g) types of image intensifiers and relative advantage h) loading and unloading of cassettes and their care/maintenance i) effects of kV and mA on variation of emitted radiation intensity, determination of relative speeds, film contrast, film screen contact j) Film storage, handling <p>KB6. Factors affecting Image Quality</p> <ul style="list-style-type: none"> a.) Meaning of radiographic image contrast, density, resolution, sharpness, magnification and distortion of image, noise and blur b.) Radiographic illuminators and viewing conditions, visual acuity and resolution c.) Quality assurance of the related equipment and its benefits with respect to visual assessment
<p>A. Core Skills/ Generic Skills</p>	<p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Write short notes to co-workers and clerical staff to compile information about particular patients, describe unusual pathologies or ask for on-site reference material</p> <p>SA2. Write brief observations about pathologies that may affect diagnoses on patients' charts</p> <p>SA3. Write detailed notes about scans done</p> <p>SA4. Write descriptions of accidents and incidents on reporting forms when something unusual occurs during patient exams or scanning procedures</p> <p>SA5. Write memos to advise, inform or direct staff working in other hospital or clinic departments or units</p> <p>SA6. Complete patients' medical history forms by entering the patients' names, treatments received to date and current medical conditions</p> <p>Reading Skills</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA7. Read scan instructions in notes attached to patients' files</p> <p>SA8. Read communications about scheduling, training and updates to internal procedures from co-workers, supervisors or hospital administrators</p> <p>SA9. Read protocol updates and hospital policy changes</p> <p>SA10. Read and follow all specified procedures in the multi-page treatment prescriptions prepared by referring physicians</p> <p>SA11. Review protocols for scanning and identifying non-routine or atypical pathologies in procedure manuals</p> <p>SA12. Read reports of varying lengths completed by physicians, hospital or clinic administrators and supervising technologists</p> <p>SA13. Read user manuals for various types of radiological equipment when troubleshooting faults with scanners or imaging computers</p>
	<p>Oral Communication (Listening and Speaking skills)</p>

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Process radiographic images

	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA14. Speak to patients to explain protocols for procedures or examinations, obtain information about the patient's status and discuss current diagnoses and treatment options</p> <p>SA15. Speak with reception and clerical staff to determine and confirm the number of appointments for the day, request patient information from files and loggings of appointments for patients requiring additional testing or treatment</p> <p>SA16. Discuss scheduling, treatment room assignments and workload responsibilities with employees and co-workers</p> <p>SA17. Order supplies such as contrast media and radioactive pharmaceuticals from suppliers and hospital dispensaries</p> <p>SA18. Discuss procedural suggestions, equipment malfunctions and personnel problems with the senior technologists, unit or department supervisors or administrative staff</p> <p>SA19. Comfort patients who may be frightened or upset during scanning procedures</p> <p>SA20. Discuss patients' status with nurses, social workers, dieticians or other members of the extended health care team</p>
<p>B. Professional Skills</p>	<p>Decision Making</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. Decide the supplies and materials required for the procedure</p> <p>SB2. Choose the correct film size for the sizes of the areas to be scanned</p> <p>SB3. Decide on a course of action when physicians have requested types of radiographs or scans for patients who cannot be positioned in a typical way</p> <p>SB4. Decide which patients will be processed first when they receive multiple requisitions at the same time, or during emergencies</p> <p>SB5. Decide if examinations can be completed under contraindicative or complicating circumstances</p> <p>Plan and Organize</p> <p>The user/individual on the job needs to know and understand:</p> <p>SB6. How to determine the order and priority of work tasks subject to confirmation or approval from supervisors</p> <p>SB7. How to integrate work plans with those of the extended health care teams</p> <p>SB8. How to schedule daily work priorities based on the demands of the clinic, laboratory or hospital</p> <p>SB9. How to schedule patient-load based on emergency or appointment priority</p> <p>Customer Centricity</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB10. Comfort patients who may be frightened or upset during scanning procedures</p> <p>SB11. Liaise with members of the extended health care team to ensure the needs of the patient are taken care of</p> <p>Problem Solving</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB12. Indicate important scanning parameters on x-rays or scanned images, such as appropriate spatial or directional indicators when these have been neglected earlier in the process</p> <p>SB13. Recommend alternate scan types/ positions and discuss these with the</p>

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Process radiographic images

	radiologist when the scan recommended by the physician is not possible or is difficult for the patient SB14. Re-schedule appointments when patients arriving for exams are late or have not taken the necessary pre-appointment measures such as fasting or refraining from taking interfering medications SB15. Troubleshoot radiological equipment when a minor fault occurs
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB16. Analyse the prescription of the patient and decide on the best position to take the recommended scan SB17. Analyse the scan images to determine quality and clarity SB18. Analyse the inventory of supplies to decide when to place an order to replenish these
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB19. Make preliminary judgements about the seriousness of patients' injuries SB20. Evaluate the quality of radiographs, digital images and scans

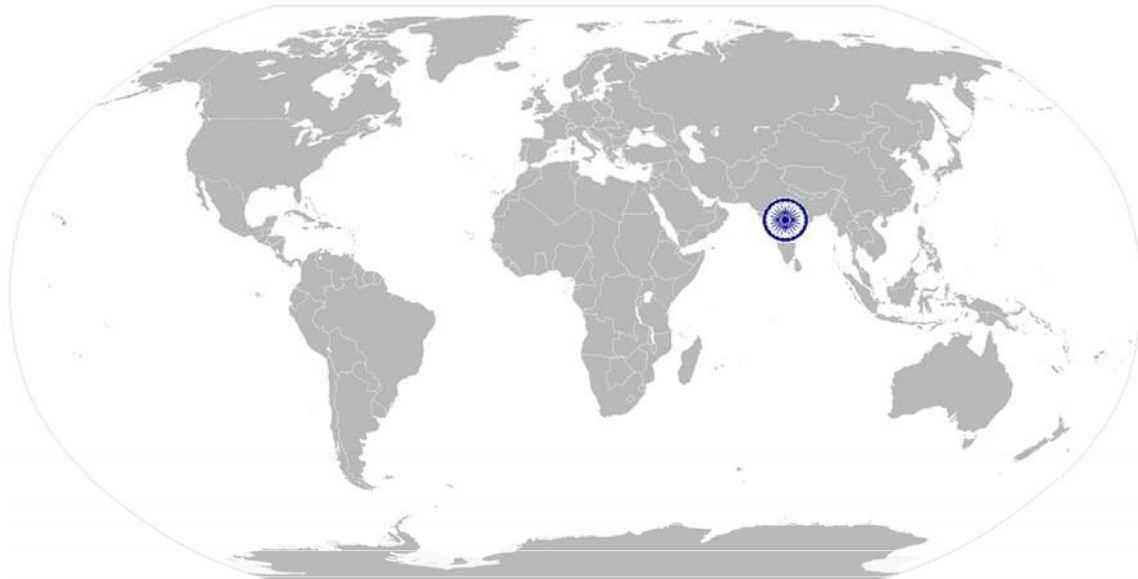
NOS Version Control

NOS Code	 HSS/N0204		
Credits (NSQF)	TBD	Version number	1.0
Industry	Health	Drafted on	12/05/13
Industry Sub-sector	Allied Health and Paramedics	Last reviewed on	22/05/13
Occupation	Radiology Technician	Next review date	22/12/16

HSS/N0205

Prepare and document reports

National Occupational Standard



Overview

This Occupational Standard describes the knowledge, understanding and skills required of a Radiology Technician to take the advice of a Radiologist and prepare and document reports based on scans performed.

HSS/N0205

Prepare and document reports

National Occupational Standard

Unit Code	HSS/N0205
Unit Title	Prepare and document reports
(Task)	Prepare and document reports
Description	This OS unit is about taking the advice of a Radiologist on images obtained from scans and preparing a report for the patient
Scope	This unit/task covers the following: <ul style="list-style-type: none"> Taking the advice of a radiologist on the scans performed , Documenting diagnosis and comments of the radiologist in a report for the patient
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Taking the advice of a radiologist on the scans performed , Documenting diagnosis and comments of the radiologist in a report for the patient	To be competent, the user/individual on the job must be able to: PC1. Correctly identify anatomical features on the radiographs and identify some major pathological and traumatic conditions PC2. Seek the advice of the Radiologist on conditions identified PC3. Document the comments and diagnosis of the Radiologist in a report for the patient PC4. Explain the diagnosis and comments in the report to the patient if required
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. Internal procedures and policies with respect to radiological equipment and scans KA2. Internal procedures and policies on safety precautions to be taken when operating radiological equipment KA3. Administrative policies and disciplinary procedures KA4. Mandatory regulations on safety and risk mitigation when operating radiological equipment KA5. Routine basic maintenance procedures for radiological equipment KA6. How to contact vendors and suppliers for maintenance and repair of radiological equipment KA7. Inventory policy of the organisation with regard to radiological supplies, contrast agents and other materials used in scans KA8. How to order new supplies KA9. Documentation required of medical history of patient, procedures undertaken and reports KA10. Medico-legal considerations for Radiology Technicians including clinical and ethical responsibilities, definitions of misconduct and malpractice and handling female patients KA11. Penalties for misconduct and malpractice
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. The anatomical features on the radiographs KB2. How to identify major pathological and traumatic conditions KB3. How to seek the opinion of the radiologist on the scan images/ radiographs produced KB4. How to document the comments and diagnosis of the radiologist in a report KB5. How to adhere to standards and formats prescribed for reports

HSS/N0205

Prepare and document reports

	KB6. How to explain the report contents to the patient if required
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. Write short notes to co-workers and clerical staff to compile information about particular patients, describe unusual pathologies or ask for on-site reference material SA2. Write brief observations about pathologies that may affect diagnoses on patients' charts SA3. Write detailed notes about scans done SA4. Write descriptions of accidents and incidents on reporting forms when something unusual occurs during patient exams or scanning procedures SA5. Write memos to advise, inform or direct staff working in other hospital or clinic departments or units SA6. Complete patients' medical history forms by entering the patients' names, treatments received to date and current medical conditions
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA7. Read scan instructions in notes attached to patients' files SA8. Read communications about scheduling, training and updates to internal procedures from co-workers, supervisors or hospital administrators SA9. Read protocol updates and hospital policy changes SA10. Read and follow all specified procedures in the multi-page treatment prescriptions prepared by referring physicians SA11. Review protocols for scanning and identifying non-routine or atypical pathologies in procedure manuals SA12. Read reports of varying lengths completed by physicians, hospital or clinic administrators and supervising technologists SA13. Read user manuals for various types of radiological equipment when troubleshooting faults with scanners or imaging computers
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA14. Speak to patients to explain protocols for procedures or examinations, obtain information about the patient's status and discuss current diagnoses and treatment options SA15. Speak with reception and clerical staff to determine and confirm the number of appointments for the day, request patient information from files and loggings of appointments for patients requiring additional testing or treatment SA16. Discuss scheduling, treatment room assignments and workload responsibilities with employees and co-workers SA17. Order supplies such as contrast media and radioactive pharmaceuticals from suppliers and hospital dispensaries SA18. Discuss procedural suggestions, equipment malfunctions and personnel problems with the senior technologists, unit or department supervisors or administrative staff

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Prepare and document reports

	<p>SA19. Comfort patients who may be frightened or upset during scanning procedures</p> <p>SA20. Discuss patients' status with nurses, social workers, dieticians or other members of the extended health care team</p>
B. Professional Skills	Decision Making
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. Decide the supplies and materials required for the procedure</p> <p>SB2. Choose the correct film size for the sizes of the areas to be scanned</p> <p>SB3. Decide on a course of action when physicians have requested types of radiographs or scans for patients who cannot be positioned in a typical way</p> <p>SB4. Decide which patients will be processed first when they receive multiple requisitions at the same time, or during emergencies</p> <p>SB5. Decide if examinations can be completed under contraindicative or complicating circumstances</p>
	Plan and Organize
	<p>The user/individual on the job needs to know and understand:</p> <p>SB6. How to determine the order and priority of work tasks subject to confirmation or approval from supervisors</p> <p>SB7. How to integrate work plans with those of the extended health care teams</p> <p>SB8. How to schedule daily work priorities based on the demands of the clinic, laboratory or hospital</p> <p>SB9. How to schedule patient-load based on emergency or appointment priority</p>
	Customer Centricity
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB10. Comfort patients who may be frightened or upset during scanning procedures</p> <p>SB11. Liaise with members of the extended health care team to ensure the needs of the patient are taken care of</p>
	Problem Solving
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB12. Indicate important scanning parameters on x-rays or scanned images, such as appropriate spatial or directional indicators when these have been neglected earlier in the process</p> <p>SB13. Recommend alternate scan types/ positions and discuss these with the radiologist when the scan recommended by the physician is not possible or is difficult for the patient</p> <p>SB14. Re-schedule appointments when patients arriving for exams are late or have not taken the necessary pre-appointment measures such as fasting or refraining from taking interfering medications</p> <p>SB15. Troubleshoot radiological equipment when a minor fault occurs</p>
	Analytical Thinking
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB16. Analyse the prescription of the patient and decide on the best position to take the recommended scan</p> <p>SB17. Analyse the scan images to determine quality and clarity</p> <p>SB18. Analyse the inventory of supplies to decide when to place an order to replenish these</p>

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Prepare and document reports

	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB19. Make preliminary judgements about the seriousness of patients' injuries SB20. Evaluate the quality of radiographs, digital images and scans

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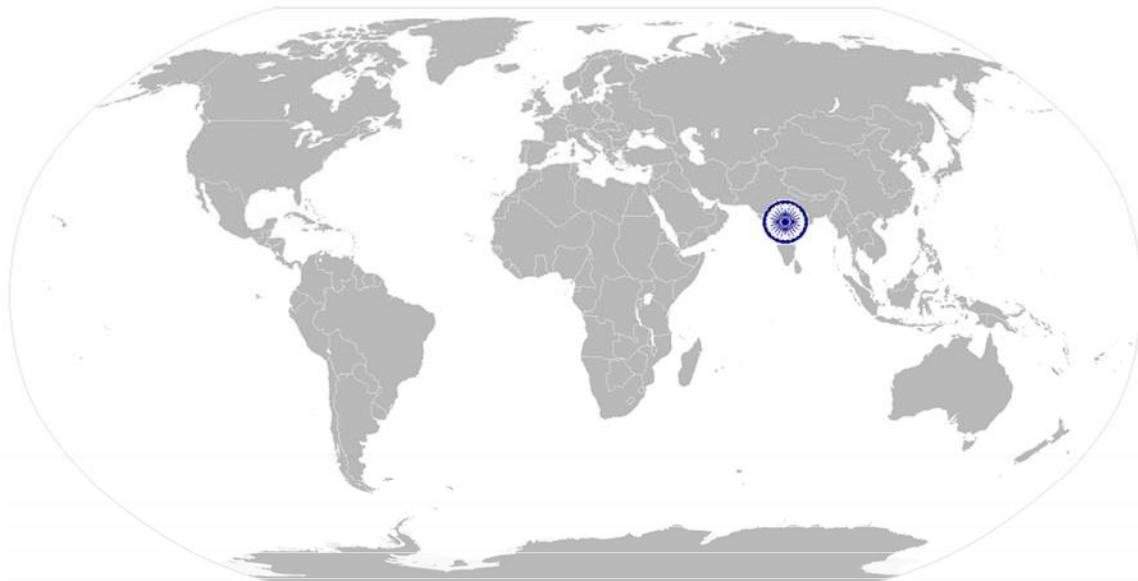
NOS Code	HSS/N0205		
Credits (NSQF)	TBD	Version number	1.0
Industry	Health	Drafted on	12/05/13
Industry Sub-sector	Allied Health and Paramedics	Last reviewed on	22/05/13
Occupation	Radiology Technician	Next review date	22/12/16



HSS/N0206

Recognise contrast induced adverse reactions

National Occupational Standard



Overview

This Occupational Standard describes the knowledge, understanding and skills required of a Radiology Technician to recognise the different types of contrast induced adverse reactions and take precautionary measures to avoid reactions.

HSS/N0206

Recognise contrast induced adverse reactions

National Occupational Standard

Unit Code	HSS/N0206
Unit Title (Task)	Recognise contrast induced adverse reactions
Description	This OS unit is about the Radiology Technician recognising the different types of contrast induced adverse reactions and taking precautionary measures to avoid reactions
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> Taking precautionary measures to avoid the reactions ,Recognising the contrast induced reaction
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Taking precautionary measures to avoid the reactions ,Recognising the contrast induced reaction	<p>To be competent, the user/individual on the job must:</p> <p>PC1. Know the patient’s medical history</p> <p>PC2. Select proper agent to be used</p> <p>PC3. Promptly recognise and assess the reactions</p> <p>PC4. Ensure immediate availability of necessary equipment and drugs in case of reaction</p> <p>PC5. Know the correct medications and other treatment options</p> <p>PC6. Know the different types of adverse reactions</p> <p>PC7. Recognise the contraindications of allergic reactions</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. Internal procedures and policies with respect to radiological equipment and scans</p> <p>KA2. Internal procedures and policies on safety precautions to be taken when operating radiological equipment</p> <p>KA3. Administrative policies and disciplinary procedures</p> <p>KA4. Mandatory regulations on safety and risk mitigation when operating radiological equipment</p> <p>KA5. Routine basic maintenance procedures for radiological equipment</p> <p>KA6. How to contact vendors and suppliers for maintenance and repair of radiological equipment</p> <p>KA7. Inventory policy of the organisation with regard to radiological supplies, contrast agents and other materials used in scans</p>
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB7. The different types of reaction based on severity and adverse effects</p> <p>KB8. When and how to seek the opinion of doctor or radiologist depending on reaction</p> <p>KB9. The different symptoms of adverse reactions</p> <p>KB10. How to take necessary precautions with patient who are suspected to have some prior reaction history</p>

HSS/N0206

Recognise contrast induced adverse reactions

A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA21. Write short notes to co-workers and clerical staff to compile information about particular patients SA22. Write detailed notes about the contrast agent used SA23. Write descriptions of accidents and incidents on reporting forms when something unusual occurs during the process SA24. Write memos to advise, inform or direct staff working in other hospital or clinic departments or units SA25. Complete patients' medical history forms by entering the patients' names, treatments received to date and current medical conditions
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA26. Read scan instructions in notes attached to patients' files SA27. Read communications about scheduling, training and updates to internal procedures from co-workers, supervisors or hospital administrators SA28. Read protocol updates and hospital policy changes
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA29. Speak to patients to explain protocols for procedures or examinations, obtain information about the patient's status and discuss current diagnoses and treatment options and any reactions or allergies SA30. Discuss scheduling, treatment room assignments and workload responsibilities with employees and co-workers SA31. Order supplies such as contrast media and radioactive pharmaceuticals from suppliers and hospital dispensaries SA32. Discuss patients' status with nurses, social workers, dieticians or other members of the extended health care team
B. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: SB21. Decide if process can be completed under contraindicative or complicating circumstances SB22. Choose the appropriate action in case of adverse reaction
	Plan and Organize
	The user/individual on the job needs to know and understand: SB23. How to determine the order and priority of work tasks subject to confirmation or approval from supervisors SB24. How to integrate work plans with those of the extended health care teams SB25. How to carry out other process in case of some adverse reactions
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB26. Comfort patients who may be frightened or upset during the process SB27. Liaise with members of the extended health care team to ensure the needs of the patient are taken care of

HSS/N0206

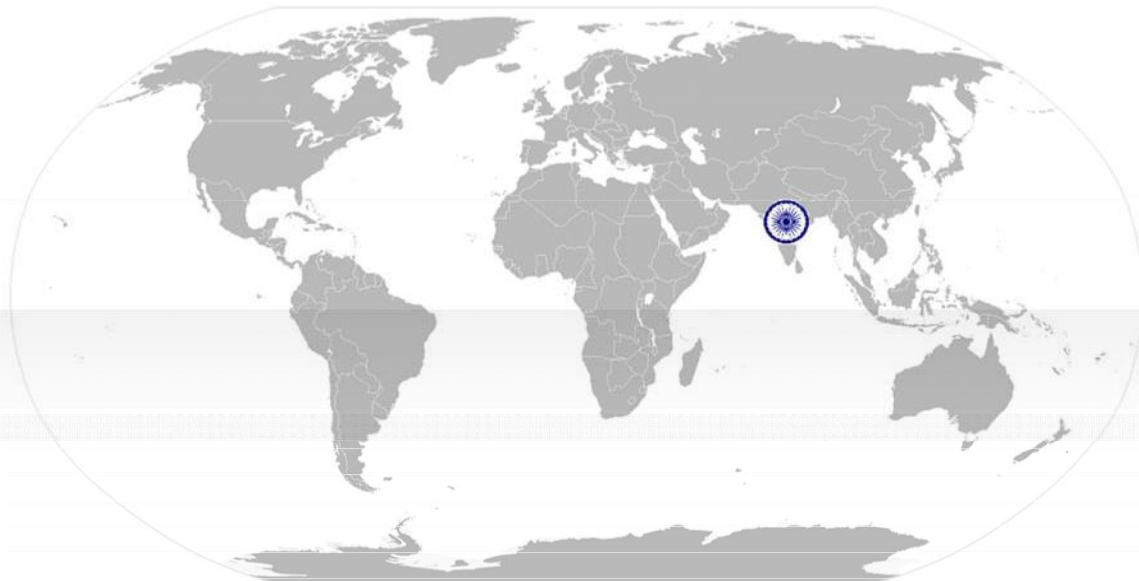
Recognise contrast induced adverse reactions

	Problem Solving
	The user/individual on the job needs to know and understand how to: SB28. Recommend alternate measures/ solutions and discuss these with the radiologist in case of reaction
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB29. Analyse the reaction symptoms and seek advice of radiologist
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB30. Make preliminary judgements about the seriousness of patient

NOS Version Control

NOS Code	HSS/N0206		
Credits (NSQF)	TBD	Version number	1.0
Industry	Health	Drafted on	12/05/13
Industry Sub-sector	Allied Health and Paramedics	Last reviewed on	22/05/13
Occupation	Radiology Technician	Next review date	22/12/16

National Occupational Standard



Overview

This Occupational Standard describes the knowledge, understanding and skills required of an Allied Health Professional to collate and communicate health related information.

HSS/N9601

Collate and Communicate Health Information

National Occupational Standard

Unit Code	HSS/N9601
Unit Title	Collate and Communicate Health Information
Description	This OS unit is about collating and communicating health information to community members, their family or others in response to queries or as part of health advice and Counselling. This OS unit applies to all allied health professionals required to communicate health related information to patients, individuals, families and others
Scope	This unit/task covers the following: <ul style="list-style-type: none"> Communicating with individuals, patients, their family and others about health issues
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Communicating with individuals, patients, their family and others about health issues	To be competent, the user/individual on the job must be able to: PC1. Respond to queries and information needs of all individuals PC2. Communicate effectively with all individuals regardless of age, caste, gender, community or other characteristics PC3. Communicate with individuals at a pace and level fitting their understanding, without using terminology unfamiliar to them PC4. Utilise all training and information at one's disposal to provide relevant information to the individual PC5. Confirm that the needs of the individual have been met PC6. Adhere to guidelines provided by one's organisation or regulatory body relating to confidentiality PC7. Respect the individual's need for privacy PC8. Maintain any records required at the end of the interaction
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. Guidelines on communicating with individuals KA2. Guidelines on maintaining confidentiality and respecting need for privacy KA3. Guidelines of the organisation/ health provider on communicating with individuals and patients
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. How to communicate effectively KB2. When to ask for assistance when situations are beyond one's competence and authority KB3. How to maintain confidentiality and to respect an individual's need for privacy KB4. How to ensure that all information provided to individuals is from reliable sources KB5. How to handle stressful or risky situations when communicating with individuals KB6. Difficulties that can occur when communicating with individuals and family members in stressful situations and how to manage these KB5. Disclosure of any information to unauthorized persons would subject to disciplinary action and possible termination
Skills (S)	

HSS/N9601

Collate and Communicate Health Information

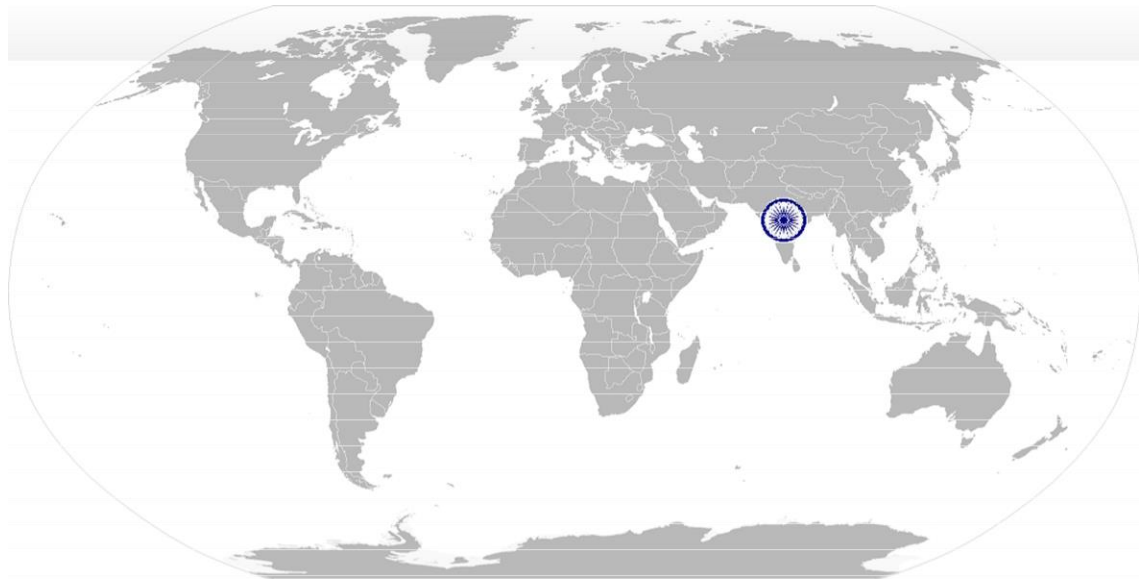
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. Write at least one local/ official language used in the local community SA2. Maintain any records required after the interaction
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA3. Read instructions and pamphlets provided as part of training
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA4. Speak at least one local language SA5. Communicate effectively with all individuals
B. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. Make decisions on information to be communicated based on needs of the individual and various regulations and guidelines
	Plan and Organize
	Not applicable
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB2. Be responsive to problems of the individuals SB3. Be available to guide, counsel and help individuals when required SB4. Be patient and non-judgemental at all times
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB5. Create work-around to overcome problems faced in carrying out roles and duties
	Analytical Thinking
	Not applicable
Critical Thinking	
Not applicable	

HSS/N9601

Collate and Communicate Health Information

NOS Version Control

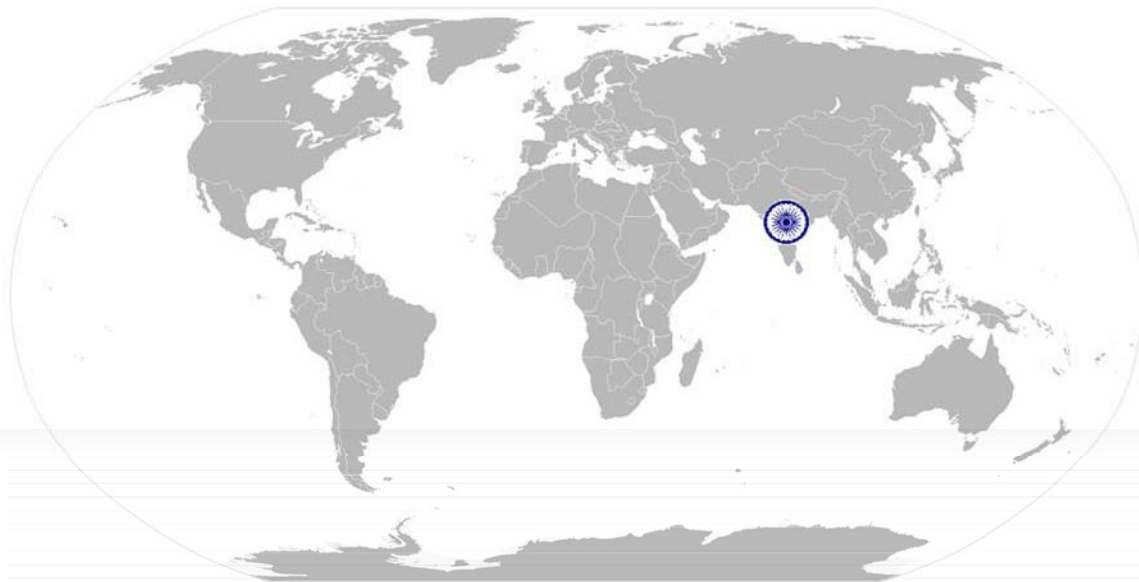
NOS Code	HSS/N9601		
Credits (NSQF)	TBD	Version number	1.0
Industry	Health	Drafted on	12/05/13
Industry Sub-sector	Allied Health and Paramedics	Last reviewed on	24/07/13
Occupation		Next review date	24/12/16



HSS/N9602

Ensure availability of medical and diagnostic supplies

National Occupational Standard



Overview

This Occupational Standard describes the knowledge, understanding and skills required of an allied health professional to ensure adequate availability of diagnostic kits, primary care medicines, treatment and other medical supplies at all times.

HSS/N9602

Ensure availability of medical and diagnostic supplies

National Occupational Standard

Unit Code	HSS/N9602
Unit Title (Task)	Ensure availability of medical and diagnostic supplies
Description	This OS unit is about ensuring availability of medical and diagnostic supplies to meet actual and anticipated demand. This OS unit is applicable to all allied health professionals required to maintain a supply of medical or diagnostic materials
Scope	This unit/task covers the following : <ul style="list-style-type: none"> Anticipating demand and ensuring availability of adequate medical and diagnosticsupplies
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
	To be competent, the user/individual on the job must be able to: PC1. Maintain adequate supplies of medical and diagnostic supplies PC2. Arrive at actual demand as accurately as possible PC3. Anticipate future demand based on internal, external and other contributing factors as accurately as possible PC4. Handle situations of stock-outs or unavailability of stocks without compromising health needs of patients/ individuals
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. Centres for restocking supplies KA2. Guidelines on anticipating demand for medical and diagnostic supplies KA3. Contents of all diagnostic and medical kits KA4. Guidelines on procurement and storage of medical and diagnostic kits
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. How to arrive at actual demand for medical and diagnostic supplies KB2. How to anticipate demand KB3. How to maintain/ safely store existing supplies KB4. How to maintain records of available supplies KB5. How to request additional supplies
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. Write at least one local/ official language used in the local community SA2. Write well enough to be classified as literate SA3. Record availability of supplies SA4. Provide written requests for additional supplies when required
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA5. Read well enough to be classified as literate SA6. Read records and registers for medical supplies SA7. Read instructions and pamphlets provided as part of training for ordering or

HSS/N9602

Ensure availability of medical and diagnostic supplies

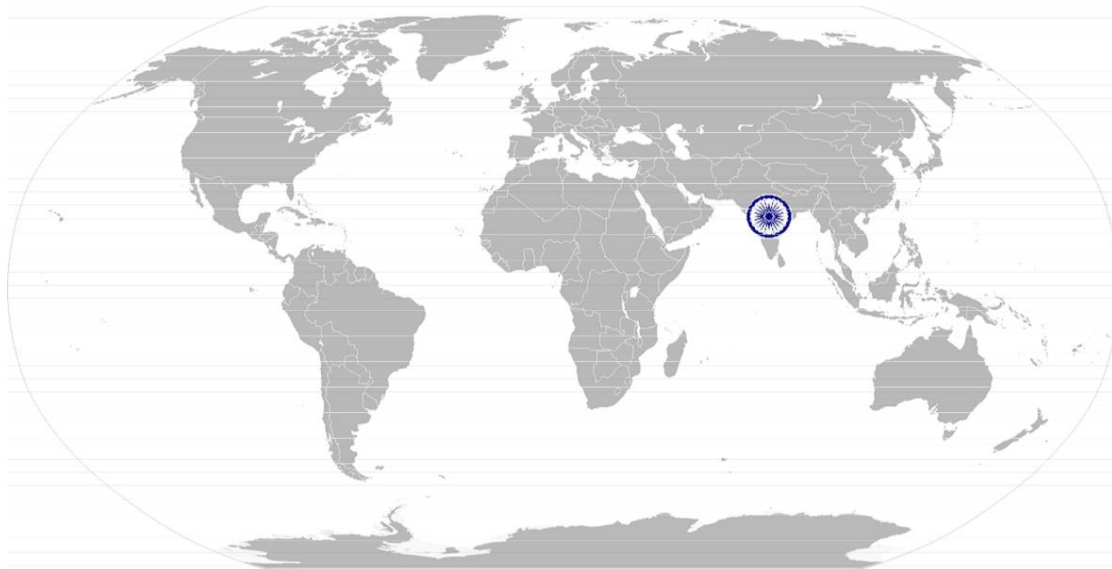
	maintaining
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA8. Speak at least one local language SA9. Communicate effectively to request additional supplies when required
B. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. Decide on the level of anticipated demand SB2. Decide when to procure additional supplies SB3. Decide quantities of medical supplies to request
	Plan and Organize
	The user/individual on the job needs to know and understand: SB4. How to plan availability of medical supplies SB5. How to place requests for supplies ahead of time in order to have adequate supplies at all times
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB6. Cater to the need of patients/ individuals for specific medical supplies
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB7. Handle non-availability of medical supplies or diagnostic kits when required
	Analytical Thinking
	Not applicable
Critical Thinking	
Not applicable	

NOS Version Control

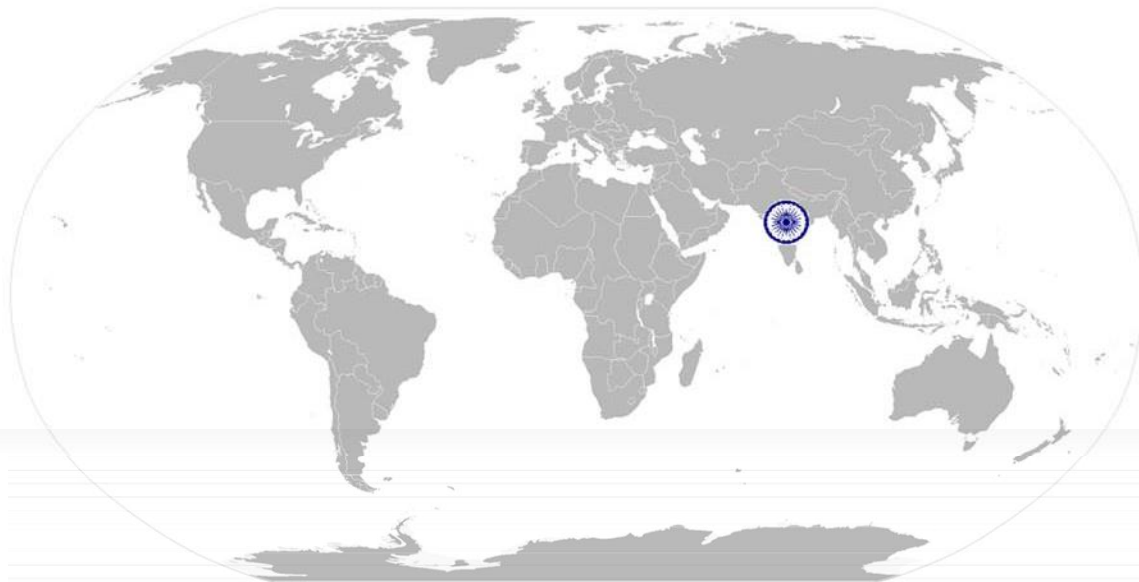
NOS Code	HSS/N9602		
Credits (NSQF)	TBD	Version number	1.0
Industry	Health	Drafted on	12/05/13
Industry Sub-sector	Allied Health and Paramedics	Last reviewed on	24/07/13
Occupation	Cardiac Care Technician	Next review date	24/12/16

HSS/N9602

Ensure availability of medical and diagnostic supplies



National Occupational Standard



Overview

This Occupational Standard describes the knowledge, understanding, skills required of an Allied Health Professional to recognise the boundaries of the role and responsibilities and working within the level of competence in accordance with legislation, protocols and guidelines.

HSS/N9603

Act within the limits of one's competence and authority

National Occupational Standard

Unit Code	HSS/N9603
Unit Title	Act within the limits of one's competence and authority
Description	<p>This OS unit is about recognizing the boundaries of the role and responsibilities and working within the level of competence in accordance with legislation, protocols and guidelines</p> <p>This is applicable to all Allied Health Professionals working in an organised, regulated environment</p>
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Acting within the limit of one's competence and authority; <ul style="list-style-type: none"> ○ Knowing one's job role ○ Knowing one's job responsibility ○ Recognizing the job role and responsibilities of co workers <p>Reference: 'This National Occupational Standard is from the UK Skills for Health suite [SFHGEN63, Act within the limits of your competence and authority] It has been tailored to apply to healthcare in India and has been reproduced with their Permission'.</p>
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Adhere to legislation, protocols and guidelines relevant to one's role and field of practice</p> <p>PC2. Work within organisational systems and requirements as appropriate to one's role</p> <p>PC3. Recognise the boundary of one's role and responsibility and seek supervision when situations are beyond one's competence and authority</p> <p>PC4. Maintain competence within one's role and field of practice</p> <p>PC5. Use relevant research based protocols and guidelines as evidence to inform one's practice</p> <p>PC6. Promote and demonstrate good practice as an individual and as a team member at all times</p> <p>PC7. Identify and manage potential and actual risks to the quality and safety of practice</p> <p>PC8. Evaluate and reflect on the quality of one's work and make continuing improvements</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. The relevant legislation, standards, policies, and procedures followed in the organization</p> <p>KA2. The medical procedures and functioning of required medical equipment</p> <p>KA3. Role and importance of assisting other healthcare providers in delivering care</p>

HSS/N9603

Act within the limits of one's competence and authority

<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. The boundaries of one's role and responsibilities and other team members KB2. The reasons for working within the limits of one's competence and authority KB3. The importance of personally promoting and demonstrating good practice KB4. The legislation, protocols and guidelines effecting one's work KB5. The organisational systems and requirements relevant to one's role KB6. The sources of information that can be accessed to maintain an awareness of research and developments in one's area of work KB7. The difference between direct and indirect supervision and autonomous practice, and which combination is most applicable in different circumstances KB8. The risks to quality and safety arising from:</p> <ul style="list-style-type: none"> ○ Working outside the boundaries of competence and authority ○ Not keeping up to date with best practice ○ Poor communication ○ Insufficient support ○ Lack of resources <p>KB9. The importance of individual or team compliance with legislation, protocols, and guidelines and organisational systems and requirements KB10. How to Report and minimise risks KB11. The principle of meeting the organisation's needs, and how this should enable one to recognise one's own limitations and when one should seek support from others KB12. The processes by which improvements to protocols/guidelines and organisational systems/requirements should be reported KB13. The procedure for accessing training, learning and development needs for oneself and/or others within one's organisation KB14. The actions that can be taken to ensure a current, clear and accurate understanding of roles and responsibilities is maintained, and how this affects the way one work as an individual or part of a team</p>
<p>Skills (S)</p>	
<p>A. Core Skills/ Generic Skills</p>	<p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Document reports, task lists, and schedules SA2. Prepare status and progress reports SA3. Record daily activities SA4. Update other co-workers</p> <p>Reading Skills</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA5. Read about changes in legislations and organizational policies SA6. Keep updated with the latest knowledge</p> <p>Oral Communication (Listening and Speaking skills)</p>

HSS/N9603

Act within the limits of one's competence and authority

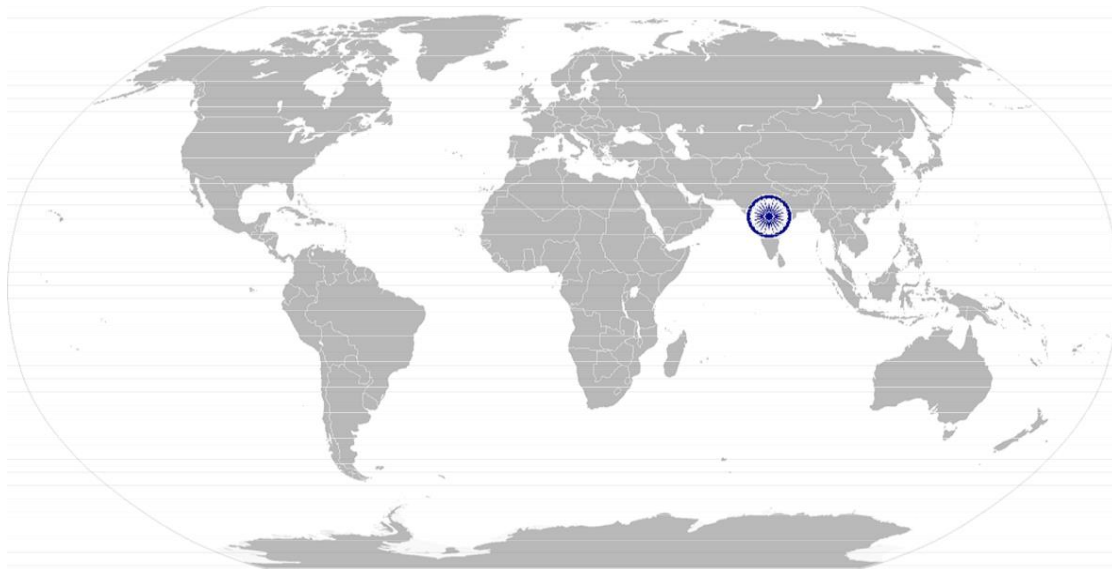
	The user/individual on the job needs to know and understand how to: SA7. Discuss task lists, schedules, and work-loads with co-workers SA8. Give clear instructions to patients and co-workers SA9. Keep patient informed about progress SA10. Avoid using jargon, slang or acronyms when communicating with a patient
B. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. Make decisions pertaining to the concerned area of work in relation to job role
	Plan and Organize
	Not applicable
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB2. Communicate effectively with patients and their family, physicians, and other members of the health care team SB3. Be responsive and listen empathetically to establish rapport in a way that promotes openness on issues of concern SB4. Be sensitive to potential cultural differences SB5. Maintain patient confidentiality SB6. Respect the rights of the patient(s)
	Problem Solving
	Not applicable
	Analytical Thinking
	Not applicable
Critical Thinking	
Not applicable	

HSS/N9603

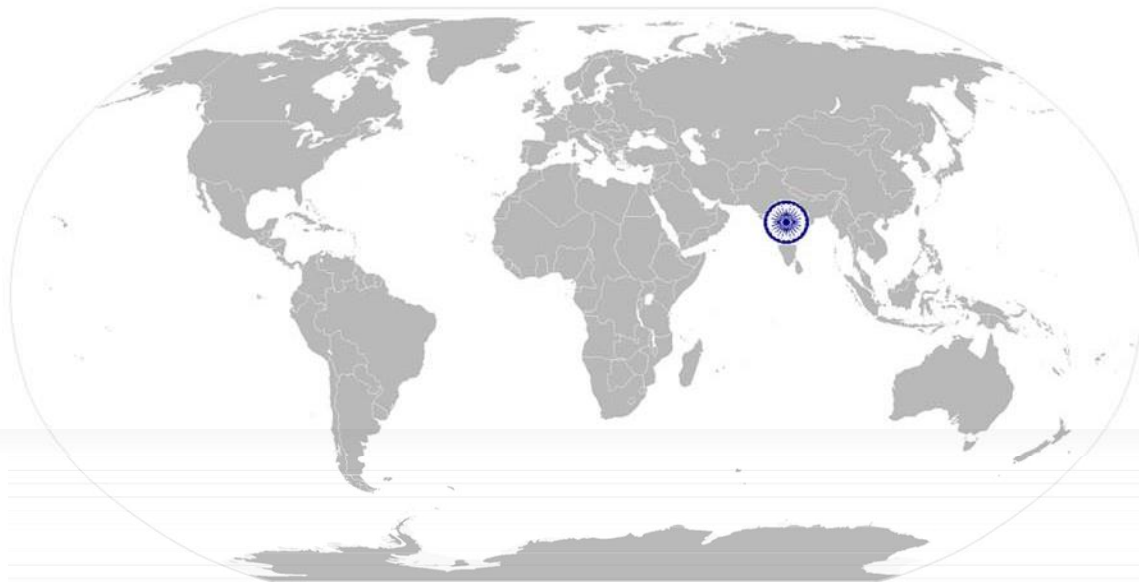
Act within the limits of one's competence and authority

NOS Version Control

NOS Code	HSS/N9603		
Credits (NSQF)	TBD	Version number	1.0
Industry	Health	Drafted on	12/05/13
IndustrySub-sector	Allied Health and Paramedics	Last reviewed on	24/07/13
Occupation		Next review date	24/12/16



National Occupational Standard



Overview

This Occupational Standard describes the knowledge, understanding, skills required of an Allied Health Professional to monitor the working environment, and making sure it meets health, safety and security requirements.

HSS/N9606

Maintain a safe, healthy, and secure working environment

National Occupational Standard

Unit Code	HSS/N9606
Unit Title	Maintain a safe, healthy, and secure working environment
(Task)	
Description	This OS unit is about monitoring the working environment and ensuring a safe, healthy, secure and effective working conditions This OS unit applies to all Allied Health professionals working within an organised workplace
Scope	This unit covers the following: <ul style="list-style-type: none"> Complying the health, safety and security requirements and procedures for Workplace Handling any hazardous situation with safely, competently and within the limits of authority Reporting any hazardous situation and breach in procedures to ensure a safe, healthy, secure working environment
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
	To be competent, the user/ individual on the job must be able to: PC1. Identify individual responsibilities in relation to maintaining workplace health safety and security requirements PC2. Comply with health, safety and security procedures for the workplace PC3. Report any identified breaches in health, safety, and security procedures to the designated person PC4. Identify potential hazards and breaches of safe work practices PC5. Correct any hazards that individual can deal with safely, competently and within the limits of authority PC6. Promptly and accurately report the hazards that individual is not allowed to deal with, to the relevant person and warn other people who may get affected PC7. Follow the organisation’s emergency procedures promptly, calmly, and efficiently PC8. Identify and recommend opportunities for improving health, safety, and security to the designated person PC9. Complete any health and safety records legibly and accurately
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	To be competent, the user/ individual on the job needs to know and understand: KA1. The importance of health, safety, and security in the workplace KA2. The basic requirements of the health and safety and other legislations and regulations that apply to the workplace KA3. The person(s) responsible for maintaining healthy, safe, and secure workplace KA4. The relevant up-to-date information on health, safety, and security that applies to the workplace KA5. How to report the hazard KA6. The responsibilities of individual to maintain safe, healthy and secure workplace

HSS/N9606

Maintain a safe, healthy, and secure working environment

<p>B. Technical Knowledge</p>	<p>To be competent, the user / individual on the job needs to know and understand:</p> <p>KB1. Requirements of health, safety and security in workplace</p> <p>KB2. How to create safety records and maintaining them</p> <p>KB3. The importance of being alert to health, safety, and security hazards in the work environment</p> <p>KB4. The common health, safety, and security hazards that affect people working in an administrative role</p> <p>KB5. How to identify health, safety, and security hazards</p> <p>KB6. The importance of warning others about hazards and how to do so until the hazard is dealt with</p>
<p>Skills (S)</p>	
<p>A. Core Skills/ Generic Skills</p>	<p>Writing Skills</p> <p>To be competent, the user/ individual on the job needs to know and understand how to:</p> <p>SA1. Report and record incidents</p> <p>Reading Skills</p> <p>To be competent, the user/ individual on the job needs to know and understand how to:</p> <p>SA2. Read and understand company policies and procedures</p>
	<p>Oral Communication (Listening and Speaking skills)</p> <p>To be competent, the user/ individual on the job needs to know and understand how to:</p> <p>SA3. Clearly report hazards and incidents with the appropriate level of urgency</p>
<p>B. Professional Skills</p>	<p>Decision Making</p> <p>To be competent, the user/ individual on the job needs to know and understand how to:</p> <p>SB1. Make decisions pertaining to the area of work</p> <p>Plan and Organize</p> <p>To be competent, the user / individual on the job needs to know and understand how to:</p> <p>SB2. Plan for safety of the work environment</p> <p>Customer Centricity</p> <p>To be competent, the user / individual on the job needs to know and understand:</p> <p>SB3. Communicate effectively with patients and their family, physicians, and other members of the health care team</p> <p>SB4. Be capable of being responsive, listen empathetically to establish rapport in a way that promotes openness on issues of concern</p> <p>Problem Solving</p> <p>To be competent, the user/ individual on the job needs to know and understand how to:</p> <p>SB8. Identify hazards, evaluate possible solutions and suggest effective solutions</p>

HSS/N9606

Maintain a safe, healthy, and secure working environment

	Analytical Thinking
	To be competent, the user needs to know and understand how to: SB9. Analyse the seriousness of hazards
	Critical Thinking
	To be competent, the user needs to know and understand how to: SB10. Analyse, evaluate and apply the information gathered from observation, experience, reasoning, or communication to act efficiently

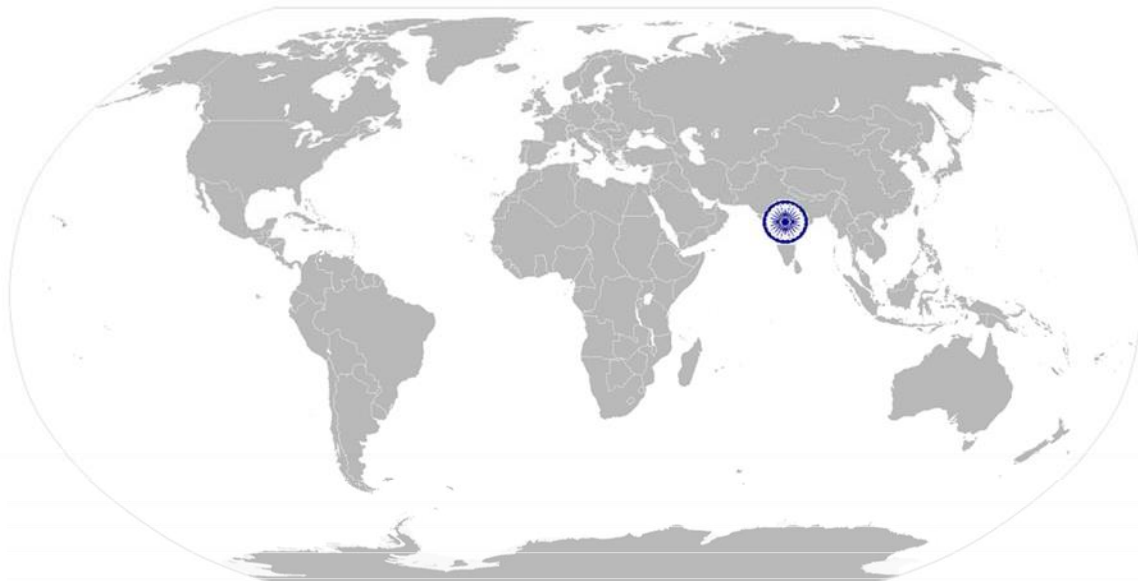
NOS Version Control

NOS Code	HSS/N9606		
Credits (NSQF)	TBD	Version number	1.0
Industry	Health	Drafted on	12/05/13
Industry Sub-sector	Allied Health and Paramedics	Last reviewed on	24/07/13
Occupation		Next review date	24/12/16

HSS/N9608

Follow radiation safety guidelines

National Occupational Standard



Overview

This Occupational Standard describes the knowledge, understanding and skills required of an allied health professional to follow radiation safety guidelines and provide safe environment to individuals

HSS/N9608

Follow radiation safety guidelines

National Occupational Standard

Unit Code	HSS/N9608
Unit Title	Follow radiation safety guidelines
(Task)	Follow radiation safety guidelines
Description	This OS unit is about following radiation safety guidelines and to provide safe environment to individuals. These individuals include staff working and individuals undergoing treatment or diagnostic procedures. This is applicable to all Allied Health Professionals.
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> Following and complying with radiation safety guidelines <p>Reference : 'The content of this National Occupational Standard is drawn from the UK Skills for Health NOS [SFHHCS3 Ensure the safety of individuals exposed to radiation within healthcare and SFHHCS4 Measure an individual's healthcare radiation exposure to minimise risk]'</p>
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Following and complying with radiation safety guidelines	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Confirm sources of radiation and likely type of exposure for all individuals within the work area</p> <p>PC2. Apply appropriate assessment methodology suitable for source, type of exposure, dose, level of risk and the recipients' exposure time</p> <p>PC3. Confirm that all required procedures and associated safety measures are compliant with current and relevant legislation requirements</p> <p>PC4. Determine and assess the appropriateness of the projected radiation dose over a suitable period of time for an individual or key staff and other personnel</p> <p>PC5. Record the results of the assessment accurately and in correct format, referencing any monitoring measurements taken to accepted published values to indicate conformance within accepted safety guidance limits for the procedures undertaken within the work practice</p> <p>PC6. Communicate and provide information, advice and guidance effectively in the appropriate medium to meet the individuals needs and preferences</p> <p>PC7. Report actual and potential risks from radiation, in context, to other healthcare professionals and where appropriate seek assistance and advice</p> <p>PC8. Maintain full, accurate and legible records of information and store in correct location in line with current legislation, guidelines, policies and protocols</p> <p>PC9. Confirm that all required procedures and associated safety measures are current and compliant with relevant legislation</p> <p>PC10. Maintain full, accurate and legible records of information and store in correct location in line with current legislation, guidelines, local policies and protocols</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company /	<p>The user/individual on the job needs to know and understand:</p> <p>KA5. Basic requirements of the health and safety and other legislations and regulations that apply to the organisation</p> <p>KA6. Person(s) responsible for health, safety, and security in the organisation</p> <p>KA7. Relevant up-to-date information on health, safety, and security that applies to</p>

HSS/N9608

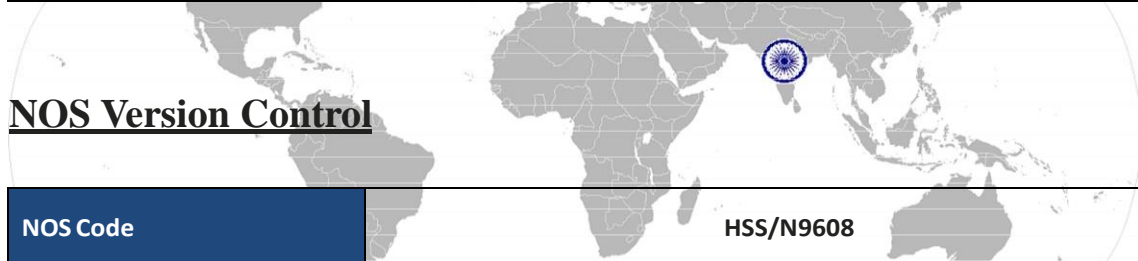
Follow radiation safety guidelines

organization and its processes)	the organisation KA8. Organisation's emergency procedures and responsibilities for handling hazardous situations
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. How to communicate effectively in the appropriate medium to meet all recipients' needs in relation to radiation safety KB2. The safety principles for radiation physics including therapy and diagnostic procedures KB3. The range, type and nature of radiation and associated equipment and/or medical devices used within the relevant specialist areas and their work practices KB4. The importance of quality assuring the facilities, equipment and other resources for operational safety and monitoring each operational procedure for radiation safety in accordance with legislation and organisational requirements KB5. The range of permissible exposure limits applicable to diagnostic investigations or therapeutic interventions with radiation and/or radioactive substances within the organisation KB6. The importance and appropriate methodologies for radiation safety assessments within the organisation KB7. The importance and requirements for radiation safety requirements KB8. The importance of environmental monitoring to minimise the risk of accidental exposure to radiation and to identify if an adverse event occurs KB9. How to communicate and provide advice, guidance and information effectively in the appropriate medium to meet individual's needs and preferences for the measurement of radiation exposure KB10. The range, type and dose of radiation used within diagnostic or therapeutic activities KB11. The factors and circumstances of the working environment that contribute to radiation exposure and the importance of environmental monitoring KB12. How to undertake environmental monitoring of controlled work areas and the surrounding area, the acceptable limits and the implications and consequences of adverse results and who to inform
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. Report and record incidents
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA2. Read and understand company policies and procedures
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA3. Report hazards and incidents clearly with the appropriate level of urgency
B. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. Make decisions pertaining to the organisation SB2. Exhibit commitment to the organisation and exert effort and perseverance

HSS/N9608

Follow radiation safety guidelines

	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB3. Organise files and documents SB4. Plan for safety of the work environment SB5. Recommend and implement plan of action
	Customer Centricity
	The user/individual on the job needs to know and understand: SB6. How to make exceptional effort to keep the environment and work place safe
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB7. Identify hazards and suggest effective solutions to identified problems
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB8. Analyse the seriousness of hazards
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB9. Evaluate opportunities to improve health, safety and security SB10. Show understanding and empathy for others



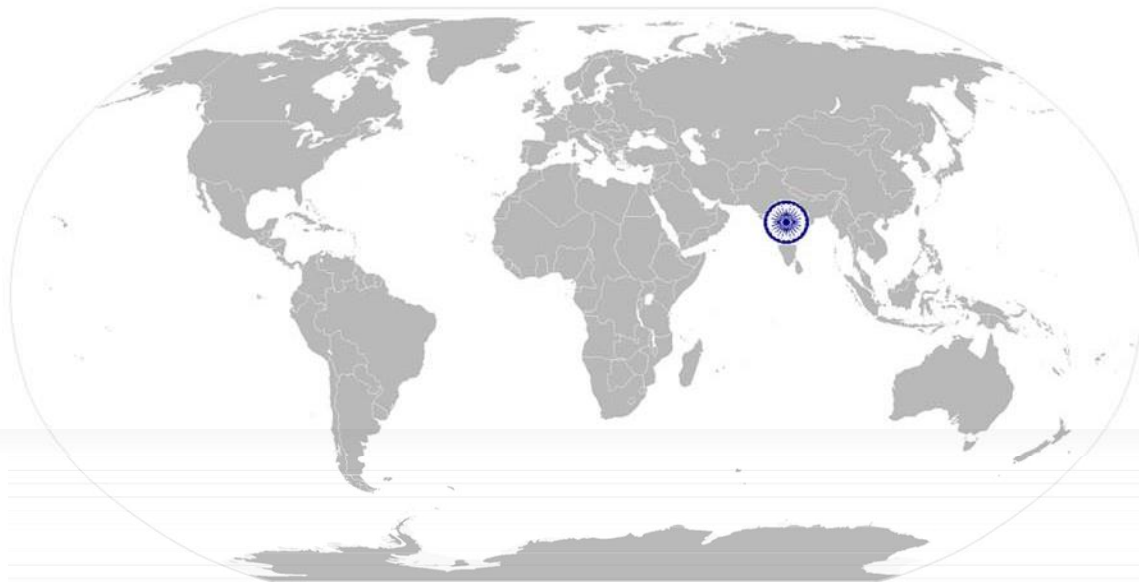
NOS Version Control

NOS Code	HSS/N9608		
Credits (NSQF)	TBD	Version number	1.0
Industry	Health	Drafted on	12/05/13
Industry Sub-sector	Allied Health and Paramedics	Last reviewed on	24/07/13
		Next review date	24/12/16

HSS/N9609

Follow biomedical waste disposal protocols

National Occupational Standard



Overview

This Occupational Standard describes the knowledge, understanding and skills required of an Allied Health professional to manage biomedical waste

HSS/N9609

Follow biomedical waste disposal protocols

National Occupational Standard

Unit Code	HSS/N9609
Unit Title (Task)	Follow biomedical waste disposal protocols
Description	This OS unit is about the safe handling and management of health care waste. This unit applies to all Allied Health professionals.
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> Classification of the Waste Generated, Segregation of Biomedical Waste ,Proper collection and storage of Waste <p>Reference : 'The content of this National Occupational Standard is drawn from the UK Skills for Health NOS [SFHCHS212 Disposal of clinical and non-clinical waste within healthcare and SFHCHS213 Implement an audit trail for managing waste within healthcare]'</p>
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Follow the appropriate procedures, policies and protocols for the method of collection and containment level according to the waste type</p> <p>PC2. Apply appropriate health and safety measures and standard precautions for infection prevention and control and personal protective equipment relevant to the type and category of waste</p> <p>PC3. Segregate the waste material from work areas in line with current legislation and organisational requirements</p> <p>PC4. Segregation should happen at source with proper containment, by using different color coded bins for different categories of waste</p> <p>PC5. Check the accuracy of the labelling that identifies the type and content of waste</p> <p>PC6. Confirm suitability of containers for any required course of action appropriate to the type of waste disposal</p> <p>PC7. Check the waste has undergone the required processes to make it safe for transport and disposal</p> <p>PC8. Transport the waste to the disposal site, taking into consideration its associated risks</p> <p>PC9. Report and deal with spillages and contamination in accordance with current legislation and procedures</p> <p>PC10. Maintain full, accurate and legible records of information and store in correct location in line with current legislation, guidelines, local policies and protocols</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. Basic requirements of the health and safety and other legislations and regulations that apply to the organization</p> <p>KA2. Person(s) responsible for health, safety, and security in the organization</p> <p>KA3. Relevant up-to-date information on health, safety, and security that applies to the organization</p> <p>KA4. Organization's emergency procedures and responsibilities for handling</p>

HSS/N9609

Follow biomedical waste disposal protocols

its processes)	hazardous situations
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. How to categorise waste according to national, local and organisational guidelines</p> <p>KB2. The appropriate approved disposal routes for waste</p> <p>KB3. The appropriate containment or dismantling requirements for waste and how to make the waste safe for disposal</p> <p>KB4. The importance to adhere to the organisational and national waste management principles and procedures</p> <p>KB5. The hazards and risks associated with the disposal and the importance of risk assessments and how to provide these</p> <p>KB6. The personal protective equipment required to manage the different types of waste generated by different work activities</p> <p>KB7. The importance of working in a safe manner when carrying out procedures for biomedical waste management in line with local and national policies and legislation</p> <p>KB8. The required actions and reporting procedures for any accidents, spillages and contamination involving waste</p> <p>KB9. The requirements of the relevant external agencies involved in the transport and receipt of your waste</p> <p>KB10. The importance of segregating different types of waste and how to do this</p> <p>KB11. The safe methods of storage and maintaining security of waste and the permitted accumulation times</p> <p>KB12. The methods for transporting and monitoring waste disposal and the appropriateness of each method to a given scenario</p> <p>KB13. How to report any problems or delays in waste collection and whereto seek advice and guidance</p> <p>KB14. The importance of the organisation monitoring and obtaining an assessment of the impact the waste has on the environment</p> <p>KB15. The current national legislation, guidelines, local policies and protocols which affect work practice</p> <p>KB16. The policies and guidance that clarify your scope of practice, accountabilities and the working relationship between yourself and others</p>
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. Report and record incidents
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA2. Read and understand company policies and procedures for managing biomedical waste
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA3. Report hazards and incidents clearly with the appropriate level of urgency
B. Professional Skills	Decision Making

HSS/N9609

Follow biomedical waste disposal protocols

	The user/individual on the job needs to know and understand how to: SB1. Make decisions pertaining to the area of work SB2. Exhibit commitment to the organization and exert effort and perseverance
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB3. Organize files and documents SB4. Plan for safety of the work environment SB5. Recommend and implement plan of action
	Customer Centricity
	The user/individual on the job needs to know and understand: SB6. How to make exceptional effort to keep the environment and work place clean
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB7. Identify hazards and suggest effective solutions to identified problems of waste management
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB8. Analyse the seriousness of hazards and proper waste management
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB9. Evaluate opportunities to improve health, safety and security SB10. Show understanding and empathy for others

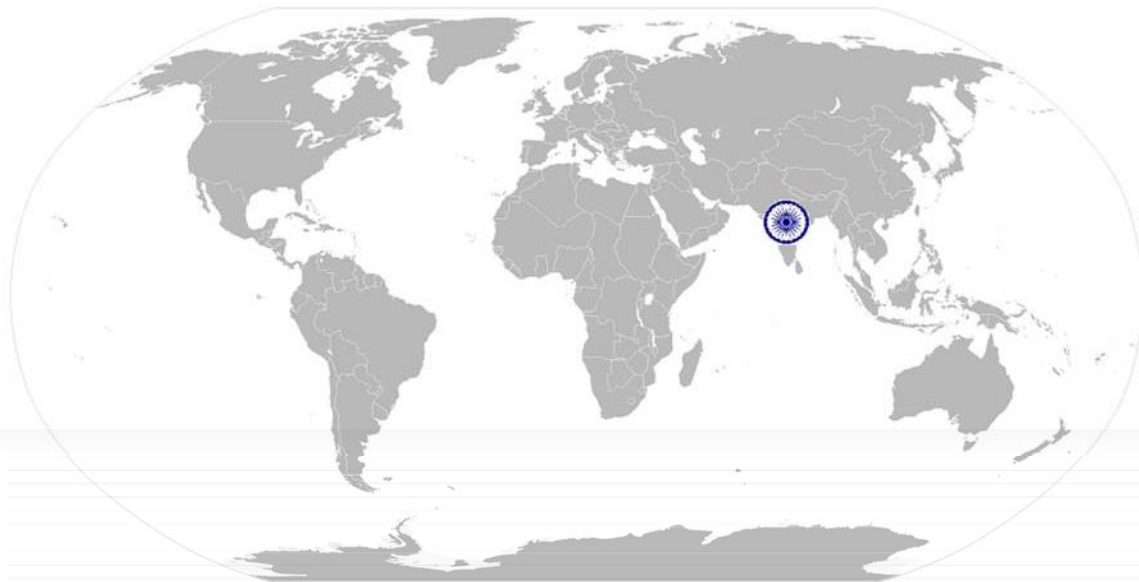
NOS Version Control

NOS Code	HSS/N9609		
Credits (NSQF)	TBD	Version number	1.0
Industry	Health	Drafted on	12/05/13
Industry Sub-sector	Allied Health and Paramedics	Last reviewed on	24/07/13
Occupation		Next review date	24/12/16

HSS/N9610

Follow infection control policies and procedures

National Occupational Standard



Overview

This Occupational Standard describes the knowledge, understanding, skills required of an Allied Health professional to comply with infection control policies and procedures

HSS/N9610

Follow infection control policies and procedures

National Occupational Standard

Unit Code	HSS/N9610
Unit Title	Follow infection control policies and procedures
Description	This OS unit is about complying with infection control policies and procedures. It is applicable to workers who are responsible for workplace procedures to maintain Infection control. This unit applies to all Allied Health professionals.
Scope	This unit/task covers the following: <ul style="list-style-type: none"> Complying with an effective infection control protocols that ensures the safety of the patient (or end-user of health-related products/services) Maintaining personal protection and preventing the transmission of infections from person to person
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Perform the standard precautions to prevent the spread of infection in accordance with organisation requirements</p> <p>PC2. Perform the additional precautions when standard precautions alone may not be sufficient to prevent transmission of infection</p> <p>PC3. Minimise contamination of materials, equipment and instruments by aerosols and splatter</p> <p>PC4. Identify infection risks and implement an appropriate response within own role and responsibility</p> <p>PC5. Document and report activities and tasks that put patients and/or other workers at risk</p> <p>PC6. Respond appropriately to situations that pose an infection risk in accordance with the policies and procedures of the organization</p> <p>PC7. Follow procedures for risk control and risk containment for specific risks</p> <p>PC8. Follow protocols for care following exposure to blood or other body fluids as required</p> <p>PC9. Place appropriate signs when and where appropriate</p> <p>PC10. Remove spills in accordance with the policies and procedures of the organization</p> <p>PC11. Maintain hand hygiene by washing hands before and after patient contact and/or after any activity likely to cause contamination</p> <p>PC12. Follow hand washing procedures</p> <p>PC13. Implement hand care procedures</p> <p>PC14. Cover cuts and abrasions with water-proof dressings and change as necessary</p> <p>PC15. Wear personal protective clothing and equipment that complies with Indian Standards, and is appropriate for the intended use</p> <p>PC16. Change protective clothing and gowns/aprons daily, more frequently if soiled and where appropriate, after each patient contact</p> <p>PC17. Demarcate and maintain clean and contaminated zones in all aspects of health care work</p> <p>PC18. Confine records, materials and medicaments to a well-designated clean zone</p>

HSS/N9610

Follow infection control policies and procedures

	<p>PC19. Confine contaminated instruments and equipment to a well-designated contaminated zone</p> <p>PC20. Wear appropriate personal protective clothing and equipment in accordance with occupational health and safety policies and procedures when handling waste</p> <p>PC21. Separate waste at the point where it has been generated and dispose of into waste containers that are colour coded and identified</p> <p>PC22. Store clinical or related waste in an area that is accessible only to authorised persons</p> <p>PC23. Handle, package, label, store, transport and dispose of waste appropriately to minimise potential for contact with the waste and to reduce the risk to the environment from accidental release</p> <p>PC24. Dispose of waste safely in accordance with policies and procedures of the organisation and legislative requirements</p> <p>PC25. Wear personal protective clothing and equipment during cleaning procedures</p> <p>PC26. Remove all dust, dirt and physical debris from work surfaces</p> <p>PC27. Clean all work surfaces with a neutral detergent and warm water solution before and after each session or when visibly soiled</p> <p>PC28. Decontaminate equipment requiring special processing in accordance with quality management systems to ensure full compliance with cleaning, disinfection and sterilisation protocols</p> <p>PC29. Dry all work surfaces before and after use</p> <p>PC30. Replace surface covers where applicable</p> <p>PC31. Maintain and store cleaning equipment</p>
<p>Knowledge and Understanding (K)</p>	
<p>A. Organizational Context (Knowledge of the company / organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. The organization’s infection control policies and procedures</p> <p>KA2. Organization requirements relating to immunization, where applicable</p> <p>KA3. Standard precautions</p> <p>KA4. Good personal hygiene practice including hand care</p>
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Additional precautions</p> <p>KB2. Aspects of infectious diseases including:</p> <ul style="list-style-type: none"> - opportunistic organisms - pathogens <p>KB3. Basic microbiology including:</p> <ul style="list-style-type: none"> - bacteria and bacterial spores - fungi - viruses <p>KB8. The required actions and reporting procedures for any accidents, spillages and contamination involving waste</p> <p>KB9. The requirements of the relevant external agencies involved in the transport and receipt of your waste</p> <p>KB10. The importance of segregating different types of waste and how to do this</p>

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Follow infection control policies and procedures

	<p>KB4. How to clean and sterile techniques</p> <p>KB5. The path of disease transmission:</p> <ul style="list-style-type: none"> - paths of transmission including direct contact and penetrating injuries - risk of acquisition - sources of infecting microorganisms including persons who are carriers, in the incubation phase of the disease or those who are acutely ill <p>KB6. Effective hand hygiene:</p> <ul style="list-style-type: none"> - procedures for routine hand wash - procedures for surgical hand wash - when hands must be washed <p>KB7. Good personal hygiene practice including hand care</p> <p>KB8. Identification and management of infectious risks in the workplace</p> <p>KB9. How to use personal protective equipment such as:</p> <ul style="list-style-type: none"> - guidelines for glove use - guidelines for wearing gowns and waterproof aprons - guidelines for wearing masks as required - guidelines for wearing protective glasses <p>KB10. Susceptible hosts including persons who are immune suppressed, have chronic diseases such as diabetes and the very young or very old</p> <p>KB11. Surface cleaning:</p> <ul style="list-style-type: none"> - cleaning procedures at the start and end of the day - managing a blood or body fluid spill - routine surface cleaning <p>KB12. Sharps handling and disposal techniques</p> <p>KB13. The following:</p> <ul style="list-style-type: none"> - Follow infection control guidelines - Identify and respond to infection risks - Maintain personal hygiene - Use personal protective equipment - Limit contamination - Handle, package, label, store transport and dispose of clinical and other waste - Clean environmental surfaces
Skills (S)	
A. Core Skills/ Generic Skills	<p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Consistently apply hand washing, personal hygiene and personal protection protocols</p> <p>SA2. Consistently apply clean and sterile techniques</p> <p>SA3. Consistently apply protocols to limit contamination</p> <p>Reading Skills</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA4. Follow instructions as specified in the protocols</p>
	<p>Oral Communication (Listening and Speaking skills)</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA5. Listen patiently</p> <p>SA6. Provide feedback (verbal and non-verbal) to encourage smooth flow of</p>

HSS/N9610

Follow infection control policies and procedures

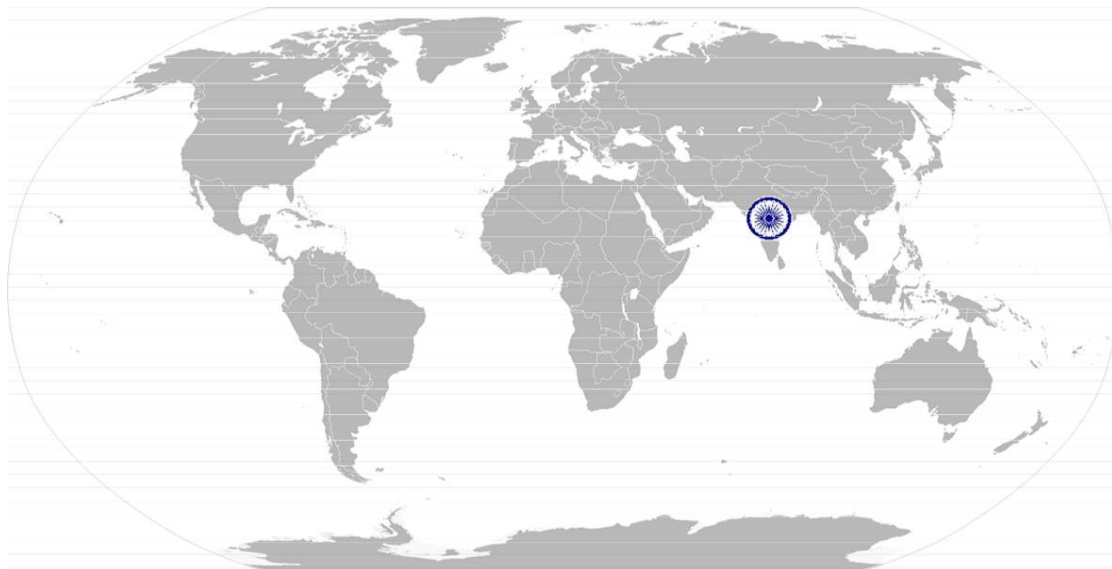
	information
B. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. Take into account opportunities to address waste minimization, environmental responsibility and sustainable practice issues SB2. Apply additional precautions when standard precautions are not sufficient
	Plan and Organize
	The user/individual on the job needs to: SB3. Consistently ensure instruments used for invasive procedures are sterile at time of use (where appropriate) SB4. Consistently follow the procedure for washing and drying hands SB5. Consistently limit contamination SB6. Consistently maintain clean surfaces and manage blood and body fluid spills
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB7. Be a good listener and be sensitive to patient SB8. Avoid unwanted and unnecessary communication with patients SB9. Maintain eye contact and non-verbal communication
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB10. Communicate only facts and not opinions SB11. Give feedback when required
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB12. Coordinate required processes effectively
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB13. Apply, analyse, and evaluate the information gathered from observation, experience, reasoning, or communication, as a guide to belief and action SB14. Take into account opportunities to address waste minimisation, environmental responsibility and sustainable practice issues

HSS/N9610

Follow infection control policies and procedures

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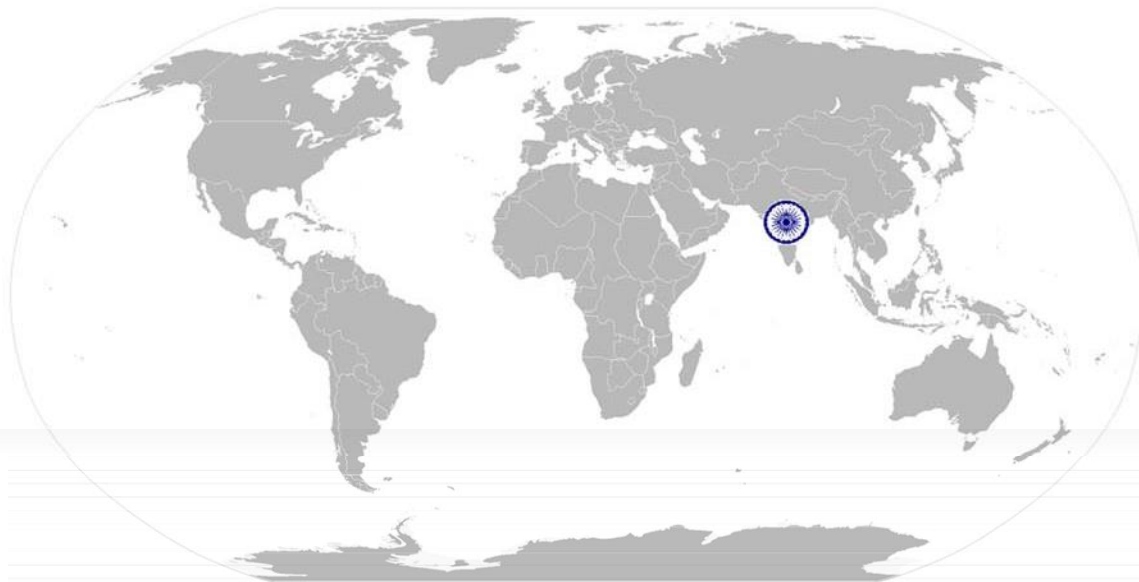
NOS Code	HSS/N9610		
Credits (NSQF)	TBD	Version number	1.0
Industry	Health	Drafted on	12/05/13
Industry Sub-sector	Allied Health and Paramedics	Last reviewed on	24/07/13
Occupation		Next review date	24/12/16



HSS/N9611

Monitor and assure quality

National Occupational Standard



Overview

This Occupational Standard describes the knowledge, understanding, skills required of an Allied Health professional to monitor and assure quality

HSS/N9611

Monitor and assure quality

National Occupational Standard

Unit Code	HSS/N9611
Unit Title	Monitor and assure quality
(Task)	
Description	This OS unit is about Assuring quality in all procedures. This unit applies to all Allied Health professionals.
Scope	This unit/task covers the following: <ul style="list-style-type: none"> Monitor treatment process/outcomes , Identify problems in treatment process/outcomes , Solve treatment process/outcome problems , Attend class/read publications to continue industry education , Identify needs and expectations of patient/health care professionals
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
	To be competent, the user/individual on the job must be able to: PC1. Conduct appropriate research and analysis PC2. Evaluate potential solutions thoroughly PC3. Participate in education programs which include current techniques, technology and trends pertaining to the dental industry PC4. Read Dental hygiene, dental and medical publications related to quality consistently and thoroughly PC5. Report any identified breaches in health, safety, and security procedures to the designated person PC6. Identify and correct any hazards that he/she can deal with safely, competently and within the limits of his/her authority PC7. Promptly and accurately report any hazards that he/she is not allowed to deal with to the relevant person and warn other people who may be affected PC8. Follow the organisation's emergency procedures promptly, calmly, and efficiently PC9. Identify and recommend opportunities for improving health, safety, and security to the designated person PC10. Complete any health and safety records legibly and accurately
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. Basic requirements of the health and safety and other legislations and regulations that apply to the organisation KA2. Person(s) responsible for health, safety, and security in the organisation KA3. Relevant up-to-date information on health, safety, and security that applies to the organisation KA4. Organisation's emergency procedures and responsibilities for handling hazardous situations
B. Technical Knowledge	The user/individual on the job needs to know and understand how to: KB1. Evaluate treatment goals, process and outcomes KB2. Identify problems/deficiencies in dental hygiene treatment goals, processes and outcomes KB3. Accurately identify problems in dental hygiene care KB4. Conduct research KB5. Select and implement proper hygiene interventions KB6. Obtain informed consent KB7. Conduct an honest self-evaluation to identify personal and professional

HSS/N9611

Monitor and assure quality

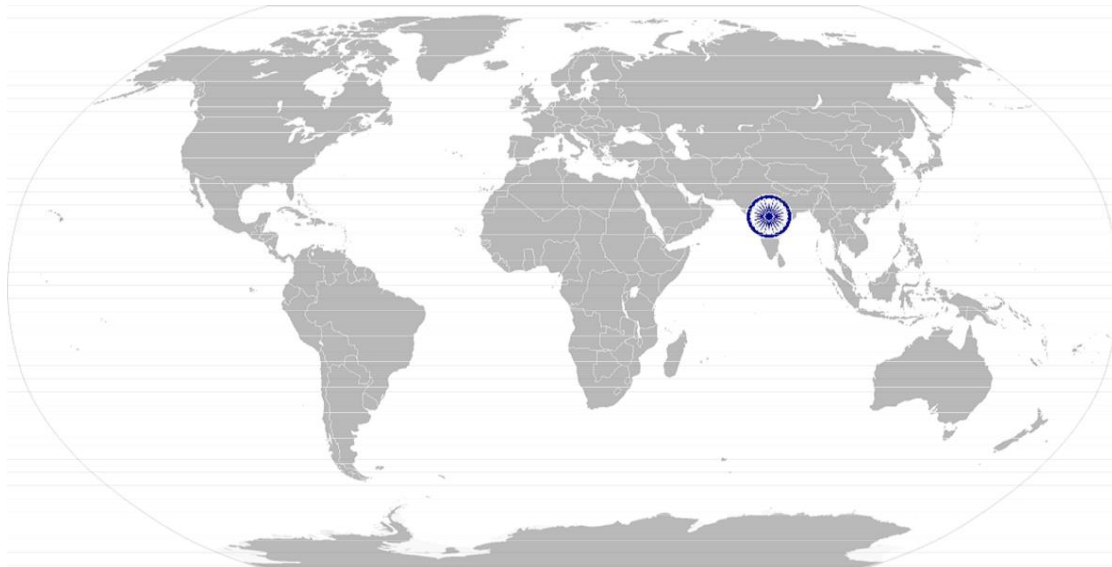
	<p>strengths and weaknesses</p> <p>KB8. Access and interpret medical, and scientific literature</p> <p>KB9. Apply human needs/motivational theory</p> <p>KB10. Provide thorough and efficient individualised care</p> <p>KB11. Employ methods to measure satisfaction</p>
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. Report and record incidents
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA2. Read and understand company policies and procedures
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA3. Report hazards and incidents clearly with the appropriate level of urgency
B. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. Make decisions pertaining to the area of work SB2. Exhibit commitment to the organisation and exert effort and perseverance
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB3. Organise files and documents SB4. Plan for safety of the work environment SB1. Recommend and implement plan of action
	Customer Centricity
	The user/individual on the job needs to know and understand: SB2. How to make exceptional effort to meet patient needs and resolve conflict to patients satisfaction
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB3. Identify hazards and suggest effective solutions to identified problems
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB4. Analyse the seriousness of hazards
Critical Thinking	
The user/individual on the job needs to know and understand how to: SB5. Evaluate opportunities to improve health, safety and security SB6. Show understanding and empathy for others	

HSS/N9611

Monitor and assure quality

NOS Version Control

NOS Code	HSS/N9611		
Credits (NSQF)	TBD	Version number	1.0
Industry	Health	Drafted on	12/05/13
Industry Sub-sector	Allied Health and Paramedics	Last reviewed on	24/07/13
Occupation		Next review date	24/12/16



CRITERIA FOR ASSESSMENT OF TRAINEES
Job Role Radiology Technician
Qualification Pack HSS/Q0201
Sector Skill Council Healthcare Sector Skill Council
<p>Guidelines for Assessment</p> <ol style="list-style-type: none"> 1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC 2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC 3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below) 4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria 5. To pass the Qualification Pack, every trainee should score as per assessment grid. 6. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack

Skills Practical and Viva (80% weightage)	
	Marks Allotted
Grand Total-1 (Subject Domain)	400
Grand Total-2 (Soft Skills and Communication)	100
Grand Total-(Skills Practical and Viva)	500
Passing Marks (80% of Max. Marks)	400
Theory (20% weightage)	
	Marks Allotted
Grand Total-1 (Subject Domain)	80
Grand Total-2 (Soft Skills and Communication)	20
Grand Total-(Theory)	100
Passing Marks (50% of Max. Marks)	50
Grand Total-(Skills Practical and Viva + Theory)	600

Overall Result		Criteria is to pass in both theory and practical individually. If fail in any one of them, then candidate is fail			
Detailed Break Up of Marks		Skills Practical & Viva			
Subject Domain		Pick any 2 NOS (2 elements from each NOS each of 100 marks) each of 200 marks totaling 400			
Assessable Outcomes	Assessment Criteria for the Assessable Outcomes	Total Marks (400)	Out Of	Marks Allocation	
				Viva	Skills Practical
1. HSS/ N 0201: Follow radiological diagnostic needs of patients	PC1. Explain the subdivisions of anatomy, terms of location and position, fundamental planes, vertebrate structure of man, organisation of the body cells and tissues	200	50	20	30
	PC2. Explain the pathology of various systems: cardiovascular system, respiratory system, central nervous system, musculoskeletal system, GIT, GUT and reproductive system		20	40	20
	PC3. Explain the pathology of radiation injury and malignancies		20	20	0
	PC4. Understand specific requests of physicians with respect to the scans required		20	10	10
	PC5. Take medical history of the patient and document it as required		30	15	15
	PC6. Understand and interpret instructions and requirements documented by the physician in the patient's prescription		30	20	10
	PC7. Determine the radiological diagnostic tests required for the patient based on the physician's prescription and the medical history		30	20	10
		200	145	95	
2.HSS/ N 0202: Prepare the patient and the room for the procedure	PC1. Prepare the room, apparatus and instruments for an x-ray, CT scan or MRI scan	200	10	3	7
	PC2. Set up the X-ray machine, MRI machine or CT scan machine for the procedure		10	4	6
	PC3. Position the patient correctly for an x-ray in the following positions: a. Erect b. Sitting c. Supine		10	3	7

d. Prone e. Lateral f. Oblique g. Decubitus			
PC4. Explain relative positions of x-ray tube and patient and the relevant exposure factors related to these	10	5	5
PC5. Explain the use of accessories such as Radiographic cones, grid and positioning aids	10	6	4
PC6. Explain the anatomic and physiological basis of the procedure to be undertaken	10	5	5
PC7. Explain the radiographic appearances of both normal and common abnormal conditions where elementary knowledge of the pathology involved would ensure application of the appropriate radiographic technique	10	5	5
PC8. Position the patient correctly for a Computed Tomography scan	15	5	10
PC9. Position the patient correctly for an MRI scan	15	7	8
PC10. Apply modifications in positioning technique for various disabilities and types of subject	10	3	7
PC11. Explain the use of contrast materials for a CT scan and how to administer them under supervision of a radiologist	10	7	3
PC12. Explain the use of MRI Contrast agents and how to administer them under supervision of a radiologist	10	6	4
PC13. Manage a patient with contrast reaction	10	5	5
PC14. Explain the principles of radiation physics detection and measurement	10	6	4
PC15. Explain the biological effects of radiation	10	7	3
PC16. Explain the principles of radiation protection: a. Maximum permissible exposure concept b. Annual dose equivalent limits (ADEL) ALARA concept c. International recommendations and current code of practice for the protection of persons against ionising radiation from medical and dental use	10	6	4

	PC17. Explain the use of protective materials: a. Lead b. Lead – impregnated substances c. Building materials d. Concept of barriers e. Lead equivalents and variations f. Design of x-ray tubes related to protection. g. Structural shielding design (work-load, use factor, occupancy factor, distance)		10	8	2
	PC18. Explain the instruments of radiation protection, use of gonad shield and practical methods for reducing radiation dose to the patient		10	6	4
	PC19. Ensure protection of self, patients, departmental staff and public from radiation through use of protection instruments and monitoring personnel and the work area		10	6	4
			200	103	97
3. HSS/ N 0203: Operate and oversee operation of radiologic equipment	PC1. Describe the construction and operation of general radiographic equipment	200	20	8	12
	PC2. Describe the construction and operation of advanced imaging equipment including CT and MRI		20	15	5
	PC3. Reliably perform all non-contrast plain Radiography, conventional contrast studies and non-contrast plain radiography in special situations		10	2	8
	PC4. Apply quality control procedures for all radiologic equipment		20	15	5
	PC5. Control and manipulate parameters associated with exposure and processing to produce a required image of desirable quality		20	10	10
	PC6. Practise the procedures employed in producing a radiographic image		10	0	10
	PC7. Describe methods of measuring exposure and doses of radiographic beams		20	15	5
	PC8. Help in administration of correct contrast dosage		20	5	15
	PC9. Discuss and apply radiation protection principles and codes of practice		20	15	5

	PC10. Demonstrate an understanding of processing of images in digital form and be familiar with recent advances in imaging		10	4	6
	PC11. Set up the X-ray machine, MRI machine or CT scan machine for the procedure		10	2	8
	PC12. Carry out routine procedures associated with maintenance of imaging and processing systems		10	2	8
	PC13. Ensure protection of patients, departmental staff and public from radiation through use of protection instruments and monitoring personnel and the work area		10	5	5
			200	98	102
4.HSS/ N 0204: Process radiographic images	PC1. Explain the principles of radiographic imaging	200	30	30	0
	PC2. Apply knowledge of radiographic imaging to the production of radiographs and the assessment of image quality		30	10	20
	PC3. Understand the construction and operation of image processing equipment		20	10	10
	PC4. Control and manipulate parameters associated with exposure and processing to produce a required image of desirable quality		30	15	15
	PC5. Perform X-ray film / image processing techniques (including dark room techniques)		40	10	30
	PC6. Explain and implement the fundamentals, concepts and applications of processing of images in digital form using computer based systems		30	10	20
	PC7. Carry out quality control for automatic film processing, evaluate and act on results		20	5	15
			200	90	110
5.HSS/ N 0205: Prepare and document reports.	PC1. Correctly identify anatomical features on the radiographs and identify some major pathological and traumatic conditions	200	70	30	40
	PC2. Seek the advice of the Radiologist on conditions identified		70	40	30
	PC3. Document the comments and diagnosis of the Radiologist in a report for the patient		60	40	20
			200	110	90
6.HSS/ N 0206: Recognise contrast induced adverse reactions	PC1. Know the patient's medical history	200	40	10	30
	PC2. Select proper agent to be used		30	10	20
	PC3. Promptly recognise and assess the reactions		25	5	20

	PC4. Ensure immediate availability of necessary equipment and drugs in case of reaction		30	10	20
	PC5. Know the correct medications and other treatment options		25	5	20
	PC6. Know the different types of adverse reactions		25	5	20
	PC7. Recognise the contraindications of allergic reactions		25	5	20
			200	50	150
7. HSS/ N 9608: Follow radiation safety guidelines	PC1. Confirm sources of radiation and likely type of exposure for all individuals within the work area	200	20	15	5
	PC2. Apply appropriate assessment methodology suitable for source, type of exposure, dose, level of risk and the recipients' exposure time		30	20	10
	PC3. Confirm that all required procedures and associated safety measures are compliant with current and relevant legislation requirements		20	15	5
	PC4. Determine and assess the appropriateness of the projected radiation dose over a suitable period of time for an individual or key staff and other personnel		30	20	10
	PC5. Record the results of the assessment accurately and in correct format, referencing any monitoring measurements taken to accepted published values to indicate conformance within accepted safety guidance limits for the procedures undertaken within the work practice		20	10	10
	PC6. Communicate and provide information, advice and guidance effectively in the appropriate medium to meet the individuals needs and preferences		20	0	10
	PC7. Report actual and potential risks from radiation, in context, to other healthcare professionals and where appropriate seek assistance and advice		10	5	5
	PC8. Maintain full, accurate and legible records of information and store in correct location in line with current legislation, guidelines, policies and protocols		10	5	5
	PC9. Confirm that all required procedures and associated safety measures are current and compliant with relevant legislation		20	5	15

	PC10. Maintain full, accurate and legible records of information and store in correct location in line with current legislation, guidelines, local policies and protocols		20	10	10
			200	105	85
8. HSS/ N 9610 (Follow infection control policies and procedures)	PC1. Perform the standard precautions to prevent the spread of infection in accordance with organisation requirements	200	5	0	5
	PC2. Perform the additional precautions when standard precautions alone may not be sufficient to prevent transmission of infection		5	0	5
	PC3. Minimise contamination of materials, equipment and instruments by aerosols and splatter		5	5	0
	PC4. Identify infection risks and implement an appropriate response within own role and responsibility		20	10	10
	PC5. Document and report activities and tasks that put patients and/or other workers at risk		5	0	5
	PC6. Respond appropriately to situations that pose an infection risk in accordance with the policies and procedures of the organization		5	0	5
	PC7. Follow procedures for risk control and risk containment for specific risks		10	0	10
	PC8. Follow protocols for care following exposure to blood or other body fluids as required		10	0	10
	PC9. Place appropriate signs when and where appropriate		20	10	10
	PC10. Remove spills in accordance with the policies and procedures of the organization		5	0	5
	PC11. Maintain hand hygiene by washing hands before and after patient contact and/or after any activity likely to cause contamination		5	0	5
	PC12. Follow hand washing procedures		5	0	5
	PC13. Implement hand care procedures		5	0	5
	PC14. Cover cuts and abrasions with water-proof dressings and change as necessary		5	5	0
	PC15. Wear personal protective clothing and equipment that complies with Indian Standards, and is appropriate for the intended use		5	0	5
	PC16. Change protective clothing and gowns/aprons daily, more frequently if soiled and where appropriate, after each patient contact		5	0	5
	PC17. Demarcate and maintain clean and contaminated zones in all aspects of health care work		20	10	10
	PC18. Confine records, materials and medicaments to a well-designated clean zone				

	PC19. Confine contaminated instruments and equipment to a well-designated contaminated zone				
	PC20. Wear appropriate personal protective clothing and equipment in accordance with occupational health and safety policies and procedures when handling waste		5	0	5
	PC21. Separate waste at the point where it has been generated and dispose of into waste containers that are colour coded and identified		5	0	5
	PC22. Store clinical or related waste in an area that is accessible only to authorised persons		5	5	0
	PC23. Handle, package, label, store, transport and dispose of waste appropriately to minimise potential for contact with the waste and to reduce the risk to the environment from accidental release		5	0	5
	PC24. Dispose of waste safely in accordance with policies and procedures of the organisation and legislative requirements		5	5	0
	PC25. Wear personal protective clothing and equipment during cleaning procedures		5	0	5
	PC26. Remove all dust, dirt and physical debris from work surfaces		5	0	5
	PC27. Clean all work surfaces with a neutral detergent and warm water solution before and after each session or when visibly soiled		5	0	5
	PC28. Decontaminate equipment requiring special processing in accordance with quality management systems to ensure full compliance with cleaning, disinfection and sterilisation protocols		5	0	5
	PC29. Dry all work surfaces before and after use		5	0	5
	PC30. Replace surface covers where applicable		5	0	5
	PC31. Maintain and store cleaning equipment		5	5	0
			200	55	145
Grand Total-1 (Subject Domain)		400			
Soft Skills and Communication		Pick one field from part 1 randomly and pick one field from part 2 as per NOS of subject domain picked each carrying 50 marks totalling 100			
Assessable Outcomes	Assessment Criteria for the Assessable Outcomes	Total Marks (100)	Out Of	Marks Allocation	
				Viva	Observation/ Role Play
Part 1 (Pick one field randomly carrying 50 marks)					
1. Attitude					
HSS/ N 9603 (Act within the limits of one's competence and	PC1. Adhere to legislation, protocols and guidelines relevant to one's role and field of practice	50	5	1	4

authority)	PC2. Work within organisational systems and requirements as appropriate to one's role	50	5	2	3
	PC3. Recognise the boundary of one's role and responsibility and seek supervision when situations are beyond one's competence and authority		10	5	5
	PC4. Maintain competence within one's role and field of practice		5	2	3
	PC5. Use relevant research based protocols and guidelines as evidence to inform one's practice		5	2	3
	PC6. Promote and demonstrate good practice as an individual and as a team member at all times		5	3	2
	PC7. Identify and manage potential and actual risks to the quality and safety of practice		10	5	5
	PC8. Evaluate and reflect on the quality of one's work and make continuing improvements		5	2	3
			50	22	28
Attitude Total		50			
2. Work Management					
HSS/ N 9602 (Ensure availability of medical and diagnostic supplies)	PC1. Maintain adequate supplies of medical and diagnostic supplies	50	10	10	0
	PC2. Arrive at actual demand as accurately as possible		10	6	4
	PC3. Anticipate future demand based on internal, external and other contributing factors as accurately as possible		20	10	10
	PC4. Handle situations of stock-outs or unavailability of stocks without compromising health needs of patients/ individuals		10	10	0
			50	36	14
3. Attitude					
HSS/ N 9601 (Collate and Communicate Health Information)	PC1. Respond to queries and information needs of all individuals	50	4	4	0
	PC2. Communicate effectively with all individuals regardless of age, caste, gender, community or other characteristics		10	0	10
	PC3. Communicate with individuals at a pace and level fitting their understanding, without using terminology unfamiliar to them		10	0	10
	PC4. Utilise all training and information at one's disposal to provide relevant information to the individual		10	10	0
	PC5. Confirm that the needs of the individual have been met		4	4	0

	PC6. Adhere to guidelines provided by one's organisation or regulatory body relating to confidentiality		4	4	0
	PC7. Respect the individual's need for privacy		4	4	0
	PC8. Maintain any records required at the end of the interaction		4	4	0
			50	30	20
Work Management Total		50			
Part 2 (Pick one field as per NOS marked carrying 50 marks)					
1. Safety management					
HSS/ N 9606 (Maintain a safe, healthy, and secure working environment)	PC1. Identify individual responsibilities in relation to maintaining workplace health safety and security requirements	50	6	2	4
	PC2. Comply with health, safety and security procedures for the workplace		4	0	4
	PC3. Report any identified breaches in health, safety, and security procedures to the designated person		4	3	1
	PC4. Identify potential hazards and breaches of safe work practices		6	4	2
	PC5. Correct any hazards that individual can deal with safely, competently and within the limits of authority		6	4	2
	PC6. Promptly and accurately report the hazards that individual is not allowed to deal with, to the relevant person and warn other people who may get affected		6	4	2
	PC7. Follow the organisation's emergency procedures promptly, calmly, and efficiently		6	2	4
	PC8. Identify and recommend opportunities for improving health, safety, and security to the designated person		6	4	2
	PC9. Complete any health and safety records legibly and accurately		6	2	4
				50	25
2. Waste Management					
HSS/ N 9609 (Follow biomedical waste disposal protocols)	PC1. Follow the appropriate procedures, policies and protocols for the method of collection and containment level according to the waste type	50	6	2	4

	PC2. Apply appropriate health and safety measures and standard precautions for infection prevention and control and personal protective equipment relevant to the type and category of waste		8	4	4
	PC3. Segregate the waste material from work areas in line with current legislation and organisational requirements		4	0	4
	PC4. Segregation should happen at source with proper containment, by using different colour coded bins for different categories of waste		8	4	4
	PC5. Check the accuracy of the labelling that identifies the type and content of waste		4	2	2
	PC6. Confirm suitability of containers for any required course of action appropriate to the type of waste disposal		4	4	0
	PC7. Check the waste has undergone the required processes to make it safe for transport and disposal		4	4	0
	PC8. Transport the waste to the disposal site, taking into consideration its associated risks		4	4	0
	PC9. Report and deal with spillages and contamination in accordance with current legislation and procedures		4	4	0
	PC10. Maintain full, accurate and legible records of information and store in correct location in line with current legislation, guidelines, local policies and protocols		4	4	0
			50	32	18
HSS/ N 9611: Monitor and assure quality	PC1. Conduct appropriate research and analysis	50	6	2	4
	PC2. Evaluate potential solutions thoroughly		8	4	4
	PC3. Participate in education programs which include current techniques, technology and trends pertaining to the dental industry		4	0	4

	PC4. Read Dental hygiene, dental and medical publications related to quality consistently and thoroughly		8	4	4
	PC5. Report any identified breaches in health, safety, and security procedures to the designated person		4	2	2
	PC6. Identify and correct any hazards that he/she can deal with safely, competently and within the limits of his/her authority		4	4	0
	PC7. Promptly and accurately report any hazards that he/she is not allowed to deal with to the relevant person and warn other people who may be affected		4	4	0
	PC8. Follow the organisation's emergency procedures promptly, calmly, and efficiently		4	4	0
	PC9. Identify and recommend opportunities for improving health, safety, and security to the designated person		4	4	0
	PC10. Complete any health and safety records legibly and accurately		4	4	0
			50	32	18
Grand Total-2 (Soft Skills and Comunication)		100			
Detailed Break Up of Marks			Theory		
Subject Domain			Select each NOS each carrying different marks totalling 80		
Assessable Outcomes	Assessment Criteria for the Assessable Outcomes		Total Marks (80)		
1. HSS/ N 0201: Follow radiological diagnostic needs of patients	PC1. Explain the subdivisions of anatomy, terms of location and position, fundamental planes, vertebrate structure of man, organisation of the body cells and tissues		12		
	PC2. Explain the pathology of various systems: cardiovascular system, respiratory system, central nervous system, musculoskeletal system, GIT, GUT and reproductive system				
	PC3. Explain the pathology of radiation injury and malignancies				
	PC4. Understand specific requests of physicians with respect to the scans required				

	PC5. Take medical history of the patient and document it as required	
	PC6. Understand and interpret instructions and requirements documented by the physician in the patient’s prescription	
	PC7. Determine the radiological diagnostic tests required for the patient based on the physician’s prescription and the medical history	
2.HSS/ N 0202: Prepare the patient and the room for the procedure	PC1. Prepare the room, apparatus and instruments for an x-ray, CT scan or MRI scan	10
	PC2. Set up the X-ray machine, MRI machine or CT scan machine for the procedure	
	PC3. Position the patient correctly for an x-ray in the following positions: a. Erect b. Sitting c. Supine d. Prone e. Lateral f. Oblique g. Decubitus	
	PC4. Explain relative positions of x-ray tube and patient and the relevant exposure factors related to these	
	PC5. Explain the use of accessories such as Radiographic cones, grid and positioning aids	
	PC6. Explain the anatomic and physiological basis of the procedure to be undertaken	
	PC7. Explain the radiographic appearances of both normal and common abnormal conditions where elementary knowledge of the pathology involved would ensure application of the appropriate radiographic technique	
	PC8. Position the patient correctly for a Computed Tomography scan	
	PC9. Position the patient correctly for an MRI scan	
	PC10. Apply modifications in positioning technique for various disabilities and types of subject	
	PC11. Explain the use of contrast materials for a CT scan and how to administer them under supervision of a radiologist	
	PC12. Explain the use of MRI Contrast agents and how to administer them under supervision of a radiologist	

	PC13. Manage a patient with contrast reaction	
	PC14. Explain the principles of radiation physics detection and measurement	
	PC15. Explain the biological effects of radiation	
	PC16. Explain the principles of radiation protection: a. Maximum permissible exposure concept b. Annual dose equivalent limits (ADEL) ALARA concept c. International recommendations and current code of practice for the protection of persons against ionising radiation from medical and dental use	
	PC17. Explain the use of protective materials: a. Lead b. Lead – impregnated substances c. Building materials d. Concept of barriers e. Lead equivalents and variations f. Design of x-ray tubes related to protection. g. Structural shielding design (work-load, use factor, occupancy factor, distance	
	PC18. Explain the instruments of radiation protection, use of gonad shield and practical methods for reducing radiation dose to the patient	
	PC19. Ensure protection of self, patients, departmental staff and public from radiation through use of protection instruments and monitoring personnel and the work area	
3. HSS/ N 0203: Operate and oversee operation of radiologic equipment	PC1. Describe the construction and operation of general radiographic equipment	10
	PC2. Describe the construction and operation of advanced imaging equipment including CT and MRI	
	PC3. Reliably perform all non-contrast plain Radiography, conventional contrast studies and non-contrast plain radiography in special situations	
	PC4. Apply quality control procedures for all radiologic equipment	
	PC5. Control and manipulate parameters associated with exposure and processing to produce a required image of desirable quality	
	PC6. Practise the procedures employed in producing a radiographic image	
	PC7. Describe methods of measuring exposure and doses of radiographic beams	

	PC8. Help in administration of correct contrast dosage	
	PC9. Discuss and apply radiation protection principles and codes of practice	
	PC10. Demonstrate an understanding of processing of images in digital form and be familiar with recent advances in imaging	
	PC11. Set up the X-ray machine, MRI machine or CT scan machine for the procedure	
	PC12. Carry out routine procedures associated with maintenance of imaging and processing systems	
	PC13. Ensure protection of patients, departmental staff and public from radiation through use of protection instruments and monitoring personnel and the work area	
4.HSS/ N 0204: Process radiographic images	PC1. Explain the principles of radiographic imaging	
	PC2. Apply knowledge of radiographic imaging to the production of radiographs and the assessment of image quality	
	PC3. Understand the construction and operation of image processing equipment	
	PC4. Control and manipulate parameters associated with exposure and processing to produce a required image of desirable quality	
	PC5. Perform X-ray film / image processing techniques (including dark room techniques)	10
	PC6. Explain and implement the fundamentals, concepts and applications of processing of images in digital form using computer based systems	
	PC7. Carry out quality control for automatic film processing, evaluate and act on results	
5.HSS/ N 0205: Prepare and document reports	PC1. Correctly identify anatomical features on the radiographs and identify some major pathological and traumatic conditions	
	PC2. Seek the advice of the Radiologist on conditions identified	10
	PC3. Document the comments and diagnosis of the Radiologist in a report for the patient	
6.HSS/ N 0206: Recognise contrast induced adverse reactions	PC1. Know the patient's medical history	
	PC2. Select proper agent to be used	10
	PC3. Promptly recognise and assess the reactions	

	PC4. Ensure immediate availability of necessary equipment and drugs in case of reaction	
	PC5. Know the correct medications and other treatment options	
	PC6. Know the different types of adverse reactions	
	PC7. Recognise the contraindications of allergic reactions	
7. HSS/ N 9608: Follow radiation safety guidelines	PC1. Confirm sources of radiation and likely type of exposure for all individuals within the work area	12
	PC2. Apply appropriate assessment methodology suitable for source, type of exposure, dose, level of risk and the recipients' exposure time	
	PC3. Confirm that all required procedures and associated safety measures are compliant with current and relevant legislation requirements	
	PC4. Determine and assess the appropriateness of the projected radiation dose over a suitable period of time for an individual or key staff and other personnel	
	PC5. Record the results of the assessment accurately and in correct format, referencing any monitoring measurements taken to accepted published values to indicate conformance within accepted safety guidance limits for the procedures undertaken within the work practice	
	PC6. Communicate and provide information, advice and guidance effectively in the appropriate medium to meet the individuals needs and preferences	
	PC7. Report actual and potential risks from radiation, in context, to other healthcare professionals and where appropriate seek assistance and advice	
	PC8. Maintain full, accurate and legible records of information and store in correct location in line with current legislation, guidelines, policies and protocols	
	PC9. Confirm that all required procedures and associated safety measures are current and compliant with relevant legislation	
	PC10. Maintain full, accurate and legible records of information and store in correct location in line with current legislation, guidelines, local policies and protocols	
8. HSS/ N 9610 (Follow infection)	PC1. Perform the standard precautions to prevent the spread of infection in accordance with organisation requirements	6

control policies and procedures)	PC2. Perform the additional precautions when standard precautions alone may not be sufficient to prevent transmission of infection	
	PC3. Minimise contamination of materials, equipment and instruments by aerosols and splatter	
	PC4. Identify infection risks and implement an appropriate response within own role and responsibility	
	PC5. Document and report activities and tasks that put patients and/or other workers at risk	
	PC6. Respond appropriately to situations that pose an infection risk in accordance with the policies and procedures of the organization	
	PC7. Follow procedures for risk control and risk containment for specific risks	
	PC8. Follow protocols for care following exposure to blood or other body fluids as required	
	PC9. Place appropriate signs when and where appropriate	
	PC10. Remove spills in accordance with the policies and procedures of the organization	
	PC11. Maintain hand hygiene by washing hands before and after patient contact and/or after any activity likely to cause contamination	
	PC12. Follow hand washing procedures	
	PC13. Implement hand care procedures	
	PC14. Cover cuts and abrasions with water-proof dressings and change as necessary	
	PC15. Wear personal protective clothing and equipment that complies with Indian Standards, and is appropriate for the intended use	
	PC16. Change protective clothing and gowns/aprons daily, more frequently if soiled and where appropriate, after each patient contact	
	PC17. Demarcate and maintain clean and contaminated zones in all aspects of health care work	
	PC18. Confine records, materials and medicaments to a well-designated clean zone	
	PC19. Confine contaminated instruments and equipment to a well-designated contaminated zone	
	PC20. Wear appropriate personal protective clothing and equipment in accordance with occupational health and safety policies and procedures when handling waste	

	PC21. Separate waste at the point where it has been generated and dispose of into waste containers that are colour coded and identified	
	PC22. Store clinical or related waste in an area that is accessible only to authorised persons	
	PC23. Handle, package, label, store, transport and dispose of waste appropriately to minimise potential for contact with the waste and to reduce the risk to the environment from accidental release	
	PC24. Dispose of waste safely in accordance with policies and procedures of the organisation and legislative requirements	
	PC25. Wear personal protective clothing and equipment during cleaning procedures	
	PC26. Remove all dust, dirt and physical debris from work surfaces	
	PC27. Clean all work surfaces with a neutral detergent and warm water solution before and after each session or when visibly soiled	
	PC28. Decontaminate equipment requiring special processing in accordance with quality management systems to ensure full compliance with cleaning, disinfection and sterilisation protocols	
	PC29. Dry all work surfaces before and after use	
	PC30. Replace surface covers where applicable	
	PC31. Maintain and store cleaning equipment	
Grand Total-1 (Subject Domain)		80
Soft Skills and Communication		Select each part each carrying 10 marks totalling 20
National Occupational Standards (NOS)	Performance Criteria (PC)	Total Marks (20)
Part 1 (Pick one field randomly carrying 50 marks)		
1. Attitude		
HSS/ N 9603 (Act within the limits of one's competence and authority)	PC1. Adhere to legislation, protocols and guidelines relevant to one's role and field of practice	3
	PC2. Work within organisational systems and requirements as appropriate to one's role	
	PC3. Recognise the boundary of one's role and responsibility and seek supervision when situations are beyond one's competence and authority	

	PC4. Maintain competence within one’s role and field of practice	
	PC5. Use relevant research based protocols and guidelines as evidence to inform one’s practice	
	PC6. Promote and demonstrate good practice as an individual and as a team member at all times	
	PC7. Identify and manage potential and actual risks to the quality and safety of practice	
	PC8. Evaluate and reflect on the quality of one’s work and make continuing improvements	
Total		
2. Work Management		
HSS/ N 9602 (Ensure availability of medical and diagnostic supplies)	PC1. Maintain adequate supplies of medical and diagnostic supplies	4
	PC2. Arrive at actual demand as accurately as possible	
	PC3. Anticipate future demand based on internal, external and other contributing factors as accurately as possible	
	PC4. Handle situations of stock-outs or unavailability of stocks without compromising health needs of patients/ individuals	
Total		
3. Attiquete		
HSS/ N 9601 (Collate and Communicate Health Information)	PC1. Respond to queries and information needs of all individuals	3
	PC2. Communicate effectively with all individuals regardless of age, caste, gender, community or other characteristics	
	PC3. Communicate with individuals at a pace and level fitting their understanding, without using terminology unfamiliar to them	
	PC4. Utilise all training and information at one’s disposal to provide relevant information to the individual	
	PC5. Confirm that the needs of the individual have been met	
	PC6. Adhere to guidelines provided by one’s organisation or regulatory body relating to confidentiality	
	PC7. Respect the individual’s need for privacy	
	PC8. Maintain any records required at the end of the interaction	
Total		
Part 1 Total		
Part 2 (Pick one field as per NOS marked carrying 50 marks)		
1. Team Work (Evaluate with NOS: HSS/N/0304, 0305, 0306, 0307)		
2. Safety management (Evaluate with NOS: HSS/N/0301, 0302, 0303, 0409, 9610)		
HSS/ N 9606 (Maintain a safe,	PC1. Identify individual responsibilities in relation to maintaining workplace health safety and security requirements	3

healthy, and secure working environment)	PC2. Comply with health, safety and security procedures for the workplace	
	PC3. Report any identified breaches in health, safety, and security procedures to the designated person	
	PC4. Identify potential hazards and breaches of safe work practices	
	PC5. Correct any hazards that individual can deal with safely, competently and within the limits of authority	
	PC6. Promptly and accurately report the hazards that individual is not allowed to deal with, to the relevant person and warn other people who may get affected	
	PC7. Follow the organisation’s emergency procedures promptly, calmly, and efficiently	
	PC8. Identify and recommend opportunities for improving health, safety, and security to the designated person	
	PC9. Complete any health and safety records legibly and accurately	
	Total	
3. Waste Management (Evaluate with NOS: HSS/N/5105, 5108, 5114, 5115)		
HSS/ N 9609 (Follow biomedical waste disposal protocols)	PC1. Follow the appropriate procedures, policies and protocols for the method of collection and containment level according to the waste type	4
	PC2. Apply appropriate health and safety measures and standard precautions for infection prevention and control and personal protective equipment relevant to the type and category of waste	
	PC3. Segregate the waste material from work areas in line with current legislation and organisational requirements	
	PC4. Segregation should happen at source with proper containment, by using different colour coded bins for different categories of waste	
	PC5. Check the accuracy of the labelling that identifies the type and content of waste	
	PC6. Confirm suitability of containers for any required course of action appropriate to the type of waste disposal	
	PC7. Check the waste has undergone the required processes to make it safe for transport and disposal	
	PC8. Transport the waste to the disposal site, taking into consideration its associated risks	
	PC9. Report and deal with spillages and contamination in accordance with current legislation and procedures	
	PC10. Maintain full, accurate and legible records of information and store in correct location in line with current legislation, guidelines, local policies and protocols	

	Total	
4. Quality Assurance		
HSS/ N 9611: Monitor and assure quality	PC1. Conduct appropriate research and analysis	3
	PC2. Evaluate potential solutions thoroughly	
	PC3. Participate in education programs which include current techniques, technology and trends pertaining to the dental industry	
	PC4. Read Dental hygiene, dental and medical publications related to quality consistently and thoroughly	
	PC5. Report any identified breaches in health, safety, and security procedures to the designated person	
	PC6. Identify and correct any hazards that he/she can deal with safely, competently and within the limits of his/her authority	
	PC7. Promptly and accurately report any hazards that he/she is not allowed to deal with to the relevant person and warn other people who may be affected	
	PC8. Follow the organisation’s emergency procedures promptly, calmly, and efficiently	
	PC9. Identify and recommend opportunities for improving health, safety, and security to the designated person	
	PC10. Complete any health and safety records legibly and accurately	
Part 2 Total	10	
Grand Total-2 (Soft Skills and Communication)	20	20