Model Curriculum

Program Name: Biomedical Waste Management-Nursing and Paramedical Staff

Micro-credential Code: SGJ/MCr-0002

Micro-credential Version: 1.0

NSQF Level: 4.5

Model Curriculum Version: 1.0

Table of Contents

Training Parameters

Sector	Healthcare
Sub-Sector	Allied Health & Paramedics
Occupation/Area of field	Infection Control
Country	India
NSQF Level	4.5
Aligned to NCO/ISCO/ISIC Code	NCO-2015/2221.9900 Professional Nurses, Other

Minimum Educational Qualification and Experience	Completed 1st year of 3-year/4-year UG(Nursing/Paramedical/BSc (Science)) Or Pursuing 1st year of 3-year/4-year UG ((Nursing/Paramedical/BSc (Science)) and continuous education Or Completed 1st year of 2-year diploma (Medical Laboratory Technology/Nursing) (after 12th) Or Pursuing 2nd year of 2-year diploma (Medical Laboratory Technology/Nursing) after 12th and continuing education Or 12th Grade Pass with 1 year of relevant experience Or Previous relevant Qualification of NSQF Level 4 with 1.5 years of Relevant experience Or Previous relevant Qualification of NSQF Level 3.5 with 3 years of Relevant experience
Pre-Requisite License or Training	Not Applicable
Minimum Job Entry Age	18 years
Last Reviewed On	31.01.2024
Next Review Date	30.01.2027
NSQC Approval Date	31.01.2024
Micro-credential Version	1.0
Model Curriculum Creation Date	1.0
Model Curriculum Valid Up to Date	30.01.2027
Model Curriculum Version	1.0
Minimum Duration of the Course	4 days (30 Hours)
Maximum Duration of the Course	4 days (30 Hours)

Program Overview

This section summarizes the end objectives of the program along with its duration.

Training Outcomes

At the end of the program, the learner will be able to:
Outcome 1: Discuss about the Biomedical waste.
Outcome 2: Discuss about classification of Biomedical waste.
Outcome 3: Understand about Segregation and Collection of Biomedical Waste.
Outcome 4: Discuss about storage and transportation of biomedical waste.
Outcome 5: Discuss about Treatment and disposal of biomedical waste.
Outcome 6: Discuss about Health and Safety precautions to be taken while handling biomedical waste.
Outcome 7: Understanding Best Practices in biomedical waste Management.

Compulsory Modules

The table lists the modules, their duration and mode of delivery.

NOS and Module Details	Theory Duration	Practical Duration/Examination/Study material/Recorded videos	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
HSS/MCr-0010: Biomedical Waste Management Nursing and Paramedical Staff **MCr Version No.1** **NSQF Level 4.5** **Credits: 1**	**20:00**	**10:00**			**30:00**
Module 1: Introduction to Biomedical Waste	02:00				**02:00**
Module 2: Classification of Biomedical Waste	03:00	02:30			**05:30**
Module 3: Segregation and Collection of Biomedical waste	03:00	02:30			**05:30**
Module 4: Storage and Transportation of Biomedical waste	03:00	02:30			**05:30**
Module 5: Treatment and Disposal of Biomedical waste	03:00				**03:00**
Module 6: Health and Safety in Biomedical Waste Management	03:00	02:30			**05:30**

Module 7: Best Practices in Biomedical Waste Management	03:00				**03:00**
Total Duration	**20:00**	**10:00**			**30:00**

Module Details

Module 1: Introduction to Biological Waste Management

Mapped to: HSS/MCr-0010 Biomedical Waste Management Nursing and Paramedical Staff, v1.0

Terminal Outcomes:

- Definition of biomedical waste
- Importance of proper Biological waste management.

Duration: *02:00 hours*	**Duration**: *00:00 hours*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Define Biomedical waste. • Discuss the reasons why proper biomedical waste management is crucial in healthcare facilities. • Explain how nurses' actions can contribute to a safer healthcare environment and improved patient care. • Understanding the risk associated with improper biomedical waste management.	
Classroom Aids	
White boards, projectors, marker pens	
Tools, Equipment and Other Requirements	
Access to a computer or laptop with internet connectivity, Biomedical Waste Containers, Sharps Containers, Biohazard Bags, Biomedical Waste Labels, Personal Protective Equipment (PPE), spill kits, Waste Compactors and Shredders	

Module 2: Classification of Biomedical Waste

Mapped to: HSS/MCr-0010 Biomedical Waste Management Nursing and Paramedical Staff, v1.0

Terminal Outcomes:

- Categories of biomedical waste (infectious, hazardous, radioactive, etc.).
- Importance of Colour coding and segregation of waste.

Duration: *03:00 hours*	**Duration**: *02:30 hours*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss about Categories of biomedical waste (infectious, hazardous, radioactive, etc.). • Explain the potential health risks associated with each category of waste. • Discuss about characteristic of each type of waste. • Discuss about the importance of correct classification of biomedical waste. • Discuss the importance of labelling waste containers correctly. • Explain the color-coding system for biomedical waste containers. • Discuss the significance of consistent colour coding • Introduce relevant regulations and guidelines (e.g., BMW Rules 2016)	• Show pictures and videos of colour coding of each category of waste. • Demonstrate Biomedical waste through pictures and videos. • Provide an overview of BMWM Rules 2016.
Classroom Aids	
Laptop, white board, marker, projector, charts	
Tools, Equipment and Other Requirements	
Access to a computer or laptop with internet connectivity, Biomedical Waste Containers, Sharps Containers, Biohazard Bags, Biomedical Waste Labels, Personal Protective Equipment (PPE), spill kits, Waste Compactors and Shredders	

Module 3: Segregation and Collection of Biomedical waste

Mapped to: HSS/MCr-0010 Biomedical Waste Management Nursing and Paramedical Staff, v1.0

Terminal Outcomes:

- Colour coding system used for biomedical waste containers and the significance of each colour.
- Identification different types of biomedical waste.
- Separating different categories of waste.
- Selection of appropriate containers for collecting different types of biomedical waste

Duration: *03:00 hours*	**Duration**: *02:30 hours*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Emphasize the importance of separating different categories of waste. • Discuss the selection of appropriate containers for collecting different types of biomedical waste, considering factors such as size, material, and leak-proof design. • Discuss about proper placement of containers. • Describe the safe handling and collection of radiological waste, including the use of lead-lined containers. • Explain procedures for collecting and packaging infectious waste, including the use of biohazard bags and labels.	• Show how to identify different types of biomedical waste, including sharps, infectious waste, pharmaceutical waste, and hazardous waste • Show how to segregate waste at the point of generation. • Demonstrate safe handling practices when collecting biomedical waste, including the use of personal protective equipment (PPE), hand hygiene, and avoiding contamination. • Demonstrate how to label waste containers accurately. • Show how to safely collect and dispose of sharps waste, including the use of puncture-resistant containers and techniques for preventing needlestick injuries.
Classroom Aids	
Laptop, white board, marker, projector, charts	
Tools, Equipment and Other Requirements	
Access to a computer or laptop with internet connectivity, Biomedical Waste Containers, Sharps Containers, Biohazard Bags, Biomedical Waste Labels, Personal Protective Equipment (PPE), spill kits, Waste Compactors and Shredders	

Module 4: Storage and Transportation of Biomedical waste

Mapped to: HSS/MCr-0010 Biomedical Waste Management Nursing and Paramedical Staff, v1.0

Terminal Outcomes:

- Basics of safe storage practices and area for storing biomedical waste.
- Packaging and labelling of Biomedical waste.
- Guidelines for transportation of biomedical waste to treatment facilities.

Duration: *03:00 hours*	**Duration**: *02:30 hours*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss about Safe storage practices and areas for storing Biomedical wastes. • Discuss about Packaging and labelling Requirement of Biomedical waste. • Discuss about Guidelines for transportation of biomedical waste to treatment facilities. • Explain Safe practices for transporting biomedical waste to the treatment facility. • Explain about Proper labeling and sealing of storage containers. • Discuss about importance of avoiding overfilling and contamination.	• Depict with the help of pictures and videos for safe storage of Biomedical waste. • List out the guidelines for safe transportation of Biomedical waste.
Classroom Aids	
Laptop, white board, marker, projector, charts	
Tools, Equipment and Other Requirements	
Access to a computer or laptop with internet connectivity, Biomedical Waste Containers, Sharps Containers, Biohazard Bags, Biomedical Waste Labels, Personal Protective Equipment (PPE), spill kits, Waste Compactors and Shredders	

Module 5: Treatment and Disposal of Biomedical waste

Mapped to: HSS/MCr-0010 Biomedical Waste Management Nursing and Paramedical Staff, v1.0

Terminal Outcomes:

- Understand different methods of treating biomedical waste.
- Understand different methods of disposing biomedical waste

Duration: *03:00 hours*	**Duration**: *00:00 hours*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss the various methods for treating Biomedical waste. • Discuss the purpose and effectiveness of each method. • Discuss various methods for disposing biomedical waste. • Discuss the environmental impact of different treatment methods and strategies for minimizing the environmental footprint of biomedical waste management.	
Classroom Aids	
Laptop, white board, marker, projector, charts	
Tools, Equipment and Other Requirements	
Access to a computer or laptop with internet connectivity, Biomedical Waste Containers, Sharps Containers, Biohazard Bags, Biomedical Waste Labels, Personal Protective Equipment (PPE), spill kits, Waste Compactors and Shredders	

Module 6: Health and Safety in Biomedical Waste Management

Mapped to: HSS/MCr-0010 Biomedical Waste Management Nursing and Paramedical Staff, v1.0

Terminal Outcomes:

- Understand use of PPEs in Biological waste Management.
- Importance of Hygiene in preventing infection.
- Safe Disposal of Used PPEs.
- Fire safety Measures in waste storage areas.

Duration: *03:00 hours*	**Duration**: *02:30 hours*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss about the Personnel Protective equipment's used in Biological Waste Management. • Discuss about the importance of hand hygiene in preventing infections. • Discuss about infection control measures. • Explain the safe handling practices of biomedical waste. • Discuss about Safe lifting and carrying of heavy waste containers. • Discuss about Fire safety measures in waste storage and treatment areas. • Discuss about Emergency response procedures in case of fires related to biomedical waste	• Showcase the complete PPEs used in biological waste management. • Demonstrating effective handwashing techniques and the use of hand sanitizers. • Show how to do Safe disposal of used PPE. • Show the techniques for safely handling sharps, including needles and scalpels.
Classroom Aids	
Laptop, white board, marker, projector, charts	
Tools, Equipment and Other Requirements	
Access to a computer or laptop with internet connectivity, Biomedical Waste Containers, Sharps Containers, Biohazard Bags, Biomedical Waste Labels, Personal Protective Equipment (PPE), spill kits, Waste Compactors and Shredders	

Module 7: Best Practices in Biomedical Waste Management

Mapped to: HSS/MCr-0010 Biomedical Waste Management Nursing and Paramedical Staff, v1.0

Terminal Outcomes:

- Understanding role of Nurses in Biomedical waste Management.
- Continuous improvement methods and monitoring techniques in Biomedical waste management

Duration: *03:00 hours*	**Duration**: *00:00 hours*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss ways to incorporate recycling and reuse where possible • Discuss about Continuous improvement methods and monitoring techniques in Biomedical waste management. • Discuss about Strategies for reducing the generation of biomedical waste. • Suggest ways to Promote sustainability in healthcare facilities. • Show case Hands-on demonstration of best practices in biomedical waste management. • Share case studies of healthcare facilities that have successfully implemented best practices in biomedical waste management.	
Classroom Aids	
Laptop, white board, marker, projector, charts	
Tools, Equipment and Other Requirements	
Access to a computer or laptop with internet connectivity, Biomedical Waste Containers, Sharps Containers, Biohazard Bags, Biomedical Waste Labels, Personal Protective Equipment (PPE), spill kits, Waste Compactors and Shredders	

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
Post Graduate in Science **Or** **Completed 4 year of UG(Preferably nursing/MBBS)**		2 years				Trainers having either of the experience will be preferred
Certified under relevant Craft Instructor Training Scheme (CITS) course						

Trainer Certification	
Domain Certification	**Platform Certification**
"Biomedical Waste Management Nursing and Paramedical Staff", "HSS/MCr-0010, v1.0", Minimum accepted score is 80%	"Recommended that the Trainer is certified for the Job Role: "Trainer (VET and Skills)", mapped to the Qualification Pack: "MEP/Q2601, v2.0". Minimum accepted score is 80%"

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training/Assessment Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
Post Graduate in Science **Or** **Completed 4 year of UG(Preferably nursing/MBBS)**		3 years				Trainers having either of the experience will be preferred
Certified under relevant Craft Instructor Training Scheme (CITS) course						

Assessor Certification	
Domain Certification	**Platform Certification**
"Biomedical Waste Management Nursing and Paramedical Staff", "HSS/MCr-0010, v1.0", Minimum accepted score is 80%	"Recommended that the Assessor is certified for the Job Role: "Assessor (VET and Skills)", mapped to the Qualification Pack: "MEP/Q2701, v2.0". Minimum accepted score is 80%"

Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

1. Assessment System Overview:

    - Batches assigned to the assessment agencies for conducting the assessment on SDSM/SID or email

- Assessment agencies send the assessment confirmation to VTP/TC looping SCGJ
- Assessment agency deploys the ToA certified Assessor for executing the assessment
- SCGJ monitors the assessment process & records

2. Testing Environment:

- Confirm that the centre is available at the same address as mentioned on SDMS or SIP
- Check the duration of the training.
- Check the Assessment Start and End time to be as 10 a.m. and 5 p.m.
- Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.
- Check the mode of assessment—Online (TAB/Computer) or Offline (OMR/PP).
- Confirm the number of TABs on the ground are correct to execute the Assessment smoothly.
- Check the availability of the Lab Equipment for the particular Job Role.

3. Assessment Quality Assurance levels / Framework:

- Question papers created by the Subject Matter Experts (SME)
- Question papers created by the SME verified by the other subject Matter Experts
- Questions are mapped with NOS and PC
- Question papers are prepared considering that level 1 to 3 are for the unskilled & semi-skilled individuals, and level 4 and above are for the skilled, supervisor & higher management
- Assessor must be ToA certified & trainer must be ToT Certified
- Assessment agency must follow the assessment guidelines to conduct the assessment

4. Types of evidence or evidence-gathering protocol:
   - Time-stamped & geotagged reporting of the assessor from assessment location
   - Center photographs with signboards and scheme specific branding
   - Biometric or manual attendance sheet (stamped by TP) of the trainees during the training period
   - Time-stamped & geotagged assessment (Theory + Viva + Practical) photographs & videos

5. Method of verification or validation:
   - Surprise visit to the assessment location
   - Random audit of the batch

- Random audit of any candidate

6. Method for assessment documentation, archiving, and access
    - Hard copies of the documents are stored
    - Soft copies of the documents & photographs of the assessment are uploaded / accessed from Cloud Storage
    - Soft copies of the documents & photographs of the assessment are stored in the Hard

References

Glossary

Term	Description
Declarative Knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
Key Learning Outcome	Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
OJT (M)	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site
OJT (R)	On-the-job training (Recommended); trainees are recommended the specified hours of training on site
Procedural Knowledge	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work, or produce a tangible work output by applying cognitive, affective or psychomotor skills.
Training Outcome	Training outcome is a statement of what a learner will know, understand and be able to do **upon the completion of the training**.
Terminal Outcome	Terminal outcome is a statement of what a learner will know, understand and be able to do **upon the completion of a module.** A set of terminal outcomes help to achieve the training outcome.

Acronyms and Abbreviations

Term	Description
QP	Qualification Pack
NSQF	National Skills Qualification Framework
NSQC	National Skills Qualification Committee
NOS	National Occupational Standards