
Overview

This standard identifies the competences you need to carry out maintenance activities on assistive technology systems and equipment, in accordance with approved procedures. This will involve dismantling, removing and replacing or repairing faulty components, in line with company procedures, on a variety of different types of assistive technology systems and equipment, such as manual and powered wheelchairs, buggies and scooters, postural support systems, hoists, personal communication aids, walking aids, adjustable beds, pressure relief and distribution equipment, telecare alarm systems, aids for daily living, environmental control systems, associated battery charging systems for assistive technology systems and equipment.

You will be expected to cover a range of maintenance activities, such as isolating equipment, labelling components, dismantling components to the required level, setting and adjusting components, replacing 'lived' items, replacing or repairing components, carrying out functional checks and safety checks before handing over to the end user.

Your responsibilities will require you to comply with organisational policy and procedures for the maintenance activities undertaken, and to report any problems with these activities, or with the tools and equipment used, that you cannot personally resolve or that are outside your permitted authority, to the relevant people (such as the reporting of any actual or potential safety related problems to the appropriate regulatory body).

You must ensure that all tools, equipment and materials used in the maintenance activities are removed from the work area on completion of the activities, and that all necessary job/task documentation is completed accurately and legibly. You will be expected to work to instructions, either alone or in conjunction with others, taking personal responsibility for your own actions, and for the quality and accuracy of the work that you carry out.

Your underpinning knowledge will be sufficient to provide a sound basis for your work, and will enable you to adopt an informed approach to applying maintenance procedures to assistive technology equipment. You will have an understanding of dismantling and reassembly methods and procedures, and their application. You will know how the equipment functions and the purpose of individual components, in adequate depth to provide a sound basis for carrying out any maintenance, repair or adjustment. In addition, you will have sufficient knowledge of these components to ensure that they are fit for purpose and meet the specifications, thus providing a sound basis for carrying out reassembly.

You will understand the safety precautions required when carrying out the maintenance activities, especially those for isolating the equipment. You will also understand your responsibilities for safety, and the importance of taking the necessary safeguards to

protect yourself and others in the workplace.

Performance criteria

You must be able to:

1. work safely at all times, complying with health and safety and other relevant regulations, directives and guidelines
2. follow the relevant maintenance schedules to carry out the required work
3. carry out the maintenance activities within the limits of your personal authority
4. carry out the maintenance activities in the specified sequence and in an agreed timescale
5. report any instances where the maintenance activities cannot be fully met or where there are identified defects outside the planned schedule
6. complete the relevant maintenance records accurately, and pass them on to the appropriate person
7. dispose of waste materials in accordance with safe working practices and approved procedures

Knowledge and understanding

You need to know and understand:

1. the health and safety, infection control and de-contamination requirements of the work area and equipment being maintained, and the responsibility these requirements place on you
2. the statutory and advisory documentation relating to medical devices (such as Medical Devices Regulations, British and European standards, regulatory agency guidance and safety warnings)
3. the statutory documentation relating to lifting equipment and electrical safety checks (such as the lifting operations and lifting regulations and portable appliance testing)
4. the appropriate working practices, and the need to respect the patient and carer in the patient environment, at home or in the community (where appropriate)
5. the importance of reporting any 'adverse incidents' with equipment, to the regulatory authority
6. the hazards associated with carrying out maintenance activities on assistive technology systems and equipment (such as handling oils, greases, misuse of tools, using damaged or badly maintained tools and equipment, not following laid-down maintenance procedures), and how to minimise them
7. the importance of wearing protective clothing and other appropriate safety equipment (PPE) during the maintenance process
8. how to obtain and interpret information from job instructions and other documentation used in the maintenance activities (such as drawings, specifications, manufacturers' manuals, regulations, symbols and terminology)
9. the isolation procedure that applies to the maintenance activities (such as electrical isolation, removal of fuses)
10. methods of checking that components are fit for purpose, how to identify defects and wear characteristics, and the need to replace 'lived' items (such as seals, sensors, batteries and belts)
11. the basic principles of how the equipment functions, its operating sequence, the working purpose of individual units/components and how they interact
12. the care and use of measuring or diagnostic equipment (such as mechanical measuring devices, electrical measuring instruments, and other specific measuring or testing devices)
13. the techniques used to dismantle/reassemble mechanical/electromechanical equipment (such as mechanical fittings, unplugging, de-soldering, removal of crimped connections)
14. methods of removing and replacing components without causing damage to the equipment or other components
15. how to make adjustments to components/assemblies to ensure that they function correctly

-
16. the importance of making visual checks before using or operating the equipment
 17. the importance of carrying out electrical safety tests on medical equipment, and the implications if this is not carried out
 18. how to check that tools and equipment are free from damage or defects, are in a safe and usable condition, and are configured correctly for the intended purpose
 19. the importance of completing maintenance documentation and/or reports following the maintenance activity, and how to generate them
 20. the equipment operating and control procedures to be applied during the maintenance activity
 21. how to use lifting and handling equipment in the maintenance activity
 22. the problems that can occur when carrying out routine maintenance, and what to do if they occur
 23. the organisational procedure(s) to be adopted for the safe disposal of waste of all types of materials
 24. the extent of your own authority and to whom you should report if you have a problem that you cannot resolve

Scope/range related to performance criteria

1. Carry out **all** of the following during the maintenance activities:

1. plan the maintenance activities so as to minimise disruption to normal working
2. use the correct issue of company and/or manufacturers' drawings and maintenance documentation
3. adhere to procedures or systems in place for risk assessment, COSHH, personal protective equipment and other relevant safety regulations
4. ensure the correct equipment decontamination procedure has been adhered to before and after the maintenance activity (where appropriate)
5. provide safe access and working arrangements for the maintenance area
6. ensure that the equipment is safe to work on before carrying out maintenance activities
7. carry out the maintenance activities, using appropriate techniques and procedures
8. return the equipment to service on completion of the maintenance activities
9. record the results of the scheduled servicing activity
10. report or take action with regard to any defects that require immediate attention (such as replacing non-'lived' components)
11. dispose of waste items in a safe and environmentally acceptable manner, and leave the work area in a safe condition

2. Carry out maintenance activities on **two** of the following types of assistive technology systems and equipment:

1. manual wheelchairs, buggies and wheeled commodes
2. powered wheelchairs and scooters
3. powered aids for daily living (such as bath lifts, riser and recliner chairs)
4. pressure redistribution and relief devices (such as alternating pressure cushions, mattresses and overlays)
5. environmental control systems (such as telephones, intercom systems, remote controlled equipment)
6. walking aids and other non powered aids for daily living (such as kitchen aids, grab rails and shower seats)
7. posture support systems (such as modular and custom made)
8. hoists
9. adjustable beds

-
10. personal communication aids
 11. telecare alarm systems
3. Carry out **twelve** of the following maintenance activities, as applicable to the equipment being maintained:
1. isolating the equipment
 2. replacing damaged/defective/missing components
 3. checking components for serviceability
 4. repairing damaged or defective components
 5. dismantling/disconnecting equipment to the appropriate level
 6. soldering and de-soldering
 7. replacing all 'lifer' items
 8. checking the condition of warning labels
 9. setting and adjusting components
 10. tightening fastenings to the required torque
 11. replacing or checking lubricants
 12. disconnecting and reconnecting wires and cables
 13. making visual checks before functional testing or powering up
 14. checking cable identification markers
 15. carrying out electrical safety tests using the appropriate equipment
 16. removing electrical/electronic units/components
 17. functionally testing the maintained equipment
 18. removing mechanical units/components
4. Replace or repair a range of components, to include **ten** of the following:
1. cables and connectors
 2. motors
 3. wheels
 4. electronic modules
 5. hydraulic units
 6. hoses/pipework
 7. overload protection devices
 8. drive belts
 9. battery chargers
 10. power supplies
 11. pulleys
 12. seating
 13. actuators
 14. seals
 15. posture supports
 16. timers
 17. valves

18. pressure relief covers, interlinings or mattresses
19. display/indication units
20. pumps
21. bulbs or LEDs
22. bearings
23. lifting slings
24. locking and retaining devices
25. gauges
26. structural components (such as bed or wheelchair frames)
27. posture belts
28. brake assemblies
29. switches
30. foot supports
31. guards or casings
32. sensors
33. control levers
34. upholstery
35. transformers
36. interface devices

* *

5. Service assistive technology equipment to **one** of the following quality and accuracy standards:

1. organisational guidelines and codes of practice
2. equipment manufacturer's instructions

* *

6. Complete **one** from the following, and pass it to the appropriate people:

1. job cards
2. servicing logs or reports
3. other specific documentation

Developed by	Enginuity
Version Number	2
Date Approved	28 Feb 2015
Indicative Review Date	30 Mar 2018
Validity	Current
Status	Original
Originating Organisation	Semta
Original URN	SEMEMI2-68
Relevant Occupations	Maintenance Fitter
Suite	Engineering Maintenance and Installation Suite 2
Keywords	Maintenance activities; assistive technology systems; assistive technology equipment; manual wheelchairs/buggies; powered wheelchairs and scooters; organisational guidelines and codes of practice; equipment manufacturer's servicing information; postural s