SFHRT22
Determine the suitability of new and emerging technology and materials for custom made devices

Overview

This standard is concerned with trialling and checking new and emerging technology and materials for use in orthotics, prosthetics and special seating. Trials will be conducted to establish if the materials will bond, are sufficiently flexible, are non-allergic etc and if the technology is compatible with existing materials, components, systems and with the service user. Users of this standard will need to ensure that practice reflects up to date information and policies.

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Performance criteria

You must be able to:

P1 identify new and emerging technology and materials which may meet a specific need in the area of rehabilitation technical services

P2 inform the appropriate people that you intend to carry out an evaluation of new and emerging technology and materials for use in prosthetics/orthotics/special seating

P3 establish the criteria and parameters of the evaluation in agreement with the appropriate people

P4 make a sample custom made device using the technology and materials to be evaluated

P5 conduct workshop tests and trials in accordance with the criteria and parameters agreed

P6 contribute to risk assessment procedures, as required

P7 obtain and record accurate test and trial results and prepare technical notes of the processes involved

P8 obtain feedback from appropriate people on the outcomes of the test and trials carried out

P9 modify the device in light of feedback received

P10 carry out further tests and trials of the modified device

P11 establish the suitability of the technology and materials in agreement with appropriate people

P12 recommend the use of the technology and materials with reasoned argument and supporting documentation to the appropriate people

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Knowledge and understanding

You need to know and understand:

K1 the reasons for maintaining records throughout the process and of clearly identifying the products during the manufacturing process

K2 the organisational procedures and requirements for the recording of information about incoming work, work in progress and work delivered, and the purpose of this

K3 quality audit systems, their purpose, nature and procedures, impact of the relevant regulatory body, currently the Medicine and Healthcare Regulatory Authority, on the recording of incoming work, the detailed design and manufacturing specification and the recording of materials and processes

K4 the principles of quality assurance, processes and procedures for quality assurance in your workplace

K5 the methods used for setting and calibrating equipment and of testing that this is correct

K6 the effects of modifying manufacturers' components and products to meet production/usage requirements on the physical properties of the components/products and the legal implications

K7 the relevant regulatory body, currently the Medicine and Healthcare Regulatory Authority, in monitoring the progress of devices through the production process

K8 health and safety at work legislation and related procedures and liability, principles of, and how to apply legislation and regulations

K9 the characteristics, properties and the processing of the following commonly used materials:

- K9.1 metals
- K9.2 plastics: thermoforming, thermosetting, composites
- K9.3 wood
- K9.4 leather
- K9.5 plaster of Paris
- K9.6 adhesives
- K9.7 fabrics
- K9.8 foams
- K9.9 other materials

K10 the following:

- K10.1 hand tools: their selection, use and maintenance
- K10.2 measuring instruments: use and methods of application
- K10.3 machine tools: selection, installation, use and maintenance
- K10.4 welding processes and equipment for metals and plastics
- K10.5 sewing machines: selection, use and maintenance

K10.6 general equipment: ovens, compressors, vacuum formers, fume and dust extraction apparatus
K10.7 workshop layout
K10.8 health and safety regulations and practice
K10.9 computers, including CAD/CAM

K11 the musculo-skeletal system
K12 anatomical terminology in relation to prosthetics/orthotics/special seating
K13 the pathological conditions giving rise to prosthetic/orthotic/special seating provision and the relevant terminology
K14 communication methods and techniques and how to achieve effective communication with enquirers
K15 the roles and responsibilities of the interdisciplinary team
K16 ethical considerations in rehabilitation technical services
K17 the legal considerations in providing rehabilitation technical services
K18 prosthetics/orthotics/special seating care systems in the UK
K19 forces and their effects on the human body including tissue mechanics
K20 the following elementary mathematics and their application in relation to rehabilitation technical services:
K20.1 arithmetic
K20.2 geometry
K21 use of calculators and mathematical tables

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Additional Information

External links

This National Occupational Standard was developed by Skills for Health.

This standard links with the following dimension within the NHS Knowledge and Skills Framework (October 2004):

Dimension: Core 1 Communication

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