

SFHRT15

Prepare non-routine components for custom made devices



Overview

This standard is about determining from the job sheet/card supplied by the prescribing clinician what non-routine components will be needed to manufacture the custom made device. The standard depends on you being able to understand the format and information supplied and being able to interpret it correctly. 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 analyse the prescription and model and identify:
 - P1.1 the materials that will be needed to produce the components
 - P1.2 the components that will be needed to achieve the required function
 - P1.3 the manufacturing process(es) that will be required to produce the components
 - P1.4 the optimum position and form of components
 - P1.5 the need for any non-routine components
 - P2 design a device that:
 - P2.1 has the potential to achieve the required function for the service user
 - P2.2 incorporates sufficient retention and support
 - P2.3 achieves the best possible balance between function, aesthetics and cost
 - P3 contact the relevant person without delay if it is not feasible to produce the components and propose alternative options for the design of the components and the device
 - P4 evaluate whether the model needs to be modified to design and manufacture the required components
 - P5 evaluate the model and design and decide on the basis of the prescription, cost, time and function:
 - P5.1 where pre-formed components can be used within the device
 - P5.2 which components will need to be custom-made
 - P6 identify and select any pre-formed components which are required, make any modifications to them that are allowable and necessary to ensure that they will perform the correct function, and confirm that they are fit for purpose
 - P7 select material for and form the custom made components to the required design and size
 - P8 check components during preparation to confirm that:
 - P8.1 they fit to the model
 - P8.2 they will not damage surrounding tissues
 - P8.3 they comply with the prescription and design
 - P8.4 make any adjustments which are required
 - P9 use working methods and systems throughout the process which:
 - P9.1 promote health and safety
 - P9.2 reduce the risk of infection and contamination
 - P10 are consistent with the assessed risks

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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

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- K10.7 workshop layout
- K10.8 health and safety regulations and practice
- K10.9 computers, including CAD/CAM
- K11 the roles and responsibilities of the interdisciplinary team
- K12 ethical considerations in rehabilitation technical services
- K13 prosthetics/orthotics/special seating care systems in the UK
- K14 prosthetic/orthotic/special seating measurement techniques
- K15 prosthetic/orthotic/special seating components and their application
- K16 prostheses/orthoses/special seating for a range of conditions
- K17 wheelchair systems and seating alignment
- K18 the musculo-skeletal system
- K19 anatomical terminology in relation to prosthetics/orthotics/special seating
- K20 the anatomical planes and reference points of the body
- K21 the pathological conditions giving rise to prosthetic/orthotic/special seating provision and the relevant terminology
- K22 the following in order to fabricate prosthetic/orthotic devices:
 - K22.1 the interaction of anatomical joints and prosthetic/orthotic joints in relation to centre of joint rotation, ground reaction forces, alignment and forces applied to tissue
- K23 or
 - K23.1 an in-depth understanding of the relationship of the pelvis, spine and knee, including tissue mechanics, in order to fabricate special seating systems
- K24 the following elementary mathematics and their application in relation to rehabilitation technical services:
 - K24.1 arithmetic;
 - K24.2 geometry;
- K25 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: HWB9 Equipment and devices to meet health and wellbeing needs

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