SFHCHS204
Design solutions to meet technical, scientific and/or engineering requirements for healthcare

Overview

This standard relates to the new development and risk assessment of solutions required to support clinical development and the delivery of specific services to meet the clinical needs of the individual.

It may involve designing a prototype to test out a proposal prior to construction or it may relate to the design of specific features of facilities and accommodation to house specialist medical equipment especially those related to safety.

Individuals undertaking this function will liaise closely with key stakeholders and relevant others to confirm accuracy of information and compliance with relevant legislation.

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 work within your level of competence, responsibility and accountability

P2 liaise and work with key stakeholders to ensure that all current influencing factors regarding the design have been taken into consideration

P3 discuss with key stakeholders any costs involved for developing the preferred solution and factor in any prototypes as required

P4 propose the relevant and realistic scientific, engineering or technical solutions and identify any feasible options

P5 carry out risk assessments to identify risk factors involved in the design process and take appropriate steps to minimise these

P6 review options generated with key stakeholders and reach agreement on optimum solution

P7 outline the design for the option using the appropriate methodologies at the required level of detail

P8 produce a design specification which meets the intended outcome/purpose

P9 ensure the specification has taken full account of any specific design features, requirements or additional accessories to meet its intended purpose and environment

P10 where appropriate develop a prototype and check it meets the clients needs

P11 identify defined timescales for the manufacture, adaptation and/or implementation of the approved design solution

P12 collate the appropriate technical, scientific or engineering information to produce a detailed report

P13 present approved solutions to key stakeholders, in the appropriate format, and at the required level of detail for the proposed manufacture

P14 maintain full, accurate and legible records of information collected and store in correct location in line with current legislation, guidelines, local policies and protocols

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Knowledge and understanding

You need to know and understand:

K1 your own level of competence, authority and specialist knowledge base related to the design process

K2 the range of stakeholders involved in the design process and their clinical and/or information needs

K3 the importance of and how to liaise with key stakeholders to select and agree options to meet the clinical need of individuals

K4 where, when and how to obtain specialist advice and support

K5 methods of risk analysis, risk benefit analysis and the risk factors associated with the design solution and how to apply them

K6 the range of design methodologies and how to design solutions or make adaptations to existing resource or facility to address the health condition of an individual or a healthcare group within your work practice

K7 the range of manual or computer assisted drawing and technical techniques used in the design process

K8 where applicable, how to apply your speciality knowledge into technical drawings and turn them into a specification for the manufacturing process for a prototype/bespoke model or for a adaptation to an existing resource or facility to meet the individual's clinical requirements

K9 the importance and role of ergonomics in the design process

K10 the types, range, properties and limitations of equipment and materials required to meet the intended solution and their interactions with the new design or existing facility

K11 when and how prototypes and/or adaptations are applicable for verification and validation within the design process

K12 the framework for intellectual property protection and exploitation related to the design

K13 the importance of and techniques used in safety test requirements for design prototypes/adaptations and/or products relevant to your work practice

K14 the current national legislation, guidelines, local policies and protocols which affect your work practice

K15 the policies and guidance that clarify your scope of practice, accountabilities and the working relationship between yourself and others

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Additional Information

External Links

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

Dimension: G2 Development and innovation

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Developed by	Skills for Health
Version number	1
Date approved	June 2010
Indicative review date	June 2012
Validity	Current
Status	Original
Originating organisation	Skills for Health
Original URN	CHS 204
Relevant occupations	Health, Public Services and Care; Nursing and Subjects and Vocations Allied; Health Professionals; Healthcare and Related Personal Services
Suite	Clinical Health Skills
Key words	adapt, assistive technology, rehabilitation, calibrate