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Ageing societies—Accessibility and usability considerations for home-based healthcare products, related services and environments

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This document was prepared by Technical Committee ~~*[or Project Committee]*~~ ISO/TC 314, *Ageing societies*.

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Introduction

With the increasing need for community-based integrated care to meet rapidly ageing societies, medical activities and healthcare services carried out at a home or a domestic environment have become commonplace. These activities and services can be referred to as home healthcare ~~and the~~, whose aim ~~of which~~ is to provide quality of life that includes independence, autonomy, safety and security for older persons.

Various types of products, medical or non-medical, and their related services and environments are being used in home healthcare. Many older persons and non-professional caregivers are now users of these products. The variety of products and users can create challenges that are unseen in professional healthcare facilities. The biggest challenge of them all is that it is difficult to find relevant information from the existing design fields to accommodate, apply and use home healthcare products.

There is much information on accessibility and usability in existing international standards and guidelines involving major products' fields including medical products. However, these documents do not fully cover the home healthcare products and related services and environments. The problem, in particular, is that it is difficult and time consuming to locate relevant information from those design fields to accommodate and to apply home healthcare products.

This document summarizes and catalogues this information into one document for practical use. The information was obtained from existing International Standards, regional or global guidelines for products and medical equipment, and also is based on empirical feedback from home healthcare product users.

This document also provides caregivers and care recipients and those who develop and distribute home healthcare products with information useful for:

— solving problems regarding the use of these products by caregivers and care recipients who might lack sufficient expertise and skills in handling medical products and activities, and

— solving problems regarding the use of home healthcare products outside of medical facilities.

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Ageing societies—Accessibility and usability considerations for home healthcare products, related services and environments

1 Scope

This document provides a collection of design considerations from existing international standards as well as best practices and observations obtained from the home healthcare field. This document is intended to be used as a reference for designing accessibility and usability of home healthcare products and associated services, and environments designed for non-professional users.

This document does not provide information on the use of home healthcare products by healthcare professionals regardless of the place and facility of use.

2 Normative references

There are no normative references in this document.

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3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain ~~terminological~~terminology databases for use in standardization at the following addresses:

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— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at ~~https://www.electropedia.org~~https://www.electropedia.org/

3.1
accessibility
extent to which products, systems, services, environments and facilities can be used by people from a population with the widest range of user needs, characteristics and capabilities to achieve identified goals in identified contexts of use

Note 1 to entry: Context of use includes direct use or use supported by assistive technologies.

[SOURCE: ISO 9241-112~~, definition~~:2017, 3.15]

3.2
caregiver
person who provides physical and mental healthcare

3.3
care recipient
person who receives physical and mental healthcare

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3.4
home healthcare
healthcare provided in a dwelling place in which a care recipient lives or other places where care recipients are present, excluding professional healthcare facility environments where operators with medical training are continually available when care recipients are present

Note 1 to entry: Professional healthcare facilities include hospitals, physician offices, freestanding surgical centres, dental office, freestanding birthing centres, limited care facilities, first aid rooms or rescue rooms, multiple treatment facilities and emergency medical services.

Note 2 to entry: For the purpose of this document, nursing homes are considered dwelling places for home healthcare.

Note 3 to entry: Other places where a care recipient is present include the outdoor environments while working and in vehicles.

[SOURCE: IEC 60601-1-11:2015+AMD1:2020, 3.1, modified —"— The term "home healthcare environment" was replaced with "home healthcare", "healthcare provided in a" was added at the beginning, "patient" was replaced with "care recipients", EXAMPLE is deleted, Note to entry 2 "collateral standard" was replaced with "document" and "home healthcare environments" was replaced with "dwelling places for home healthcare".]

3.5
home healthcare product
product used in *home healthcare* (3.4), related to services and environments

Note 1 to entry: Major home healthcare products are listed and classified in Annex A together with their users and places of use.

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3.6
healthcare professional

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person who has a professional qualification for providing healthcare

3.7
~~**3.6**~~
medical product
product and its accessory intended to use for medical activity

~~**3.7**~~
~~**non-medical product**~~
~~product and its accessory not intended to use for medical activity~~

3.8
~~**selfcare**~~
~~care which is provided by a *care recipient* (3.3) oneself~~

~~**3.9**~~
usability
extent to which a product can be used by specified *users* (3.~~10~~9) to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use

[SOURCE: ISO 9241-11:~~1998, 3.1~~]2018, 3.1.1, 3.1, modified —Notes to entry deleted.]

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3.~~10~~9
user
person who uses ~~the~~ home healthcare products

Note 1 to entry: User includes *healthcare professional* (3.~~5~~6), *caregiver* (3.2) *and care recipient* (3.3).

4 General considerations for increasing accessibility and usability

4.1 Safety and security

Safety and security of home healthcare products, related services and environments are of primary importance in their use by the widest range of caregivers and care recipients, some of whom lack expert knowledge and skills in handling medical products, equipment and activities. Safety and security are also important for the widest range of use environments of home healthcare products where professional healthcare facilities are not available.

4.2 Cleanness, disinfection and sterilization

Cleanness, disinfection and sterilization of home healthcare products, related services and environments have been identified as essential to avoid any risk of disease for the widest range of users and context of use of them.

The following practices have proven particularly effective in handling home healthcare products.

a) Avoidance of multiple uses of the products among different care recipients and caregivers is effective to reduce the risk of infection, in particular for some care recipients who are apt to be infected ~~.~~[25].

b) Zoning or partitioning of a space or a room for environments for use of home healthcare products and for related services is effective to reduce the risks of infection ~~.~~[25].

NOTE There are some care recipients who are apt to be infected with diseases.

4.3 Independence and autonomy of care recipients

To support the independence and autonomy of care recipients is ~~deemed~~ as important as providing means of self-use, on-demand-use, and consent-use of home healthcare products by care recipients.

4.4 Accessibility in general

Accessibility guidance in ISO/IEC Guide 71:2014 ~~[~~.[1]~~]~~ when applied, increases accessibility of home healthcare products, related services and environments. Among the guidance, the following have proven particularly effective in using home healthcare products in general.

a) Suitability for the widest range of users and diverse contexts of use

Designing home healthcare products, related services and environments usable by diverse users as caregivers and care recipients and in diverse environments, except in professional healthcare facilities increases accessibility. See ISO/IEC Guide 71:2014, 6.2.1 ~~.~~[1].

b) Providing multiple means of information presentation and user interaction

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