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Towards a global quality framework for assistive technology service delivery

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Abstract

Assistive technology supports maintenance or improvement of an individual's functioning and independence, though for people in need the access to assistive products is not always guaranteed. This paper presents a generic quality framework for assistive technology service delivery that can be used independent of the setting, context, legislative framework, or type of technology. Based on available literature and a series of discussions among the authors, a framework was developed. It consists of 7 general quality criteria and four indicators for each of these criteria. The criteria are: accessibility; competence; coordination; efficiency; flexibility; user centeredness, and infrastructure. This framework can be used at a micro level (processes around individual users), meso level (the service delivery scheme or programme) or at a macro level (the whole country). It aims to help identify in an easy way the main strengths and weaknesses of a system or process, and thus guide possible improvements. As a next step in the development of this quality framework the authors propose to organise a global consultancy process to obtain responses from stakeholders across the world and to plan a number of case studies in which the framework is applied to different service delivery systems and processes in different countries.

Keywords

AT service delivery; quality; standards

Introduction

Assistive Technology (AT) has a huge potential to support people with disabilities to live an independent and fulfilling life and to participate optimally in society. Realising this potential, however, is not easy and obvious. Many requirements must be met: the right technology,

training in its use, an environment that enables the technology to be used, services for maintenance and repairs, financial support, etc. And, first of all, people need to be aware that AT might be a solution for them and they must have access to it. As clearly demonstrated by the WHO in the GATE initiative there are great challenges worldwide to ensure that people have access, assistive products are available at an affordable price, training and support is available, and legislation and policies are in place to shoulder all this.

From a user perspective, all the above elements come together in the assistive technology service delivery process. That is the process through which an individual goes to obtain an AT solution that meets his or her needs and fits within the context in which it will be used. The service delivery process is embedded in a service delivery system, involving a whole set of legislation and policy, professionals and organisations. Many countries have public AT service delivery systems in place, and many others are in the process of developing such systems. However, these systems are very different, not only between countries but also within countries for different types of assistive devices, different age groups or for different living settings. This creates a very diverse landscape of AT service delivery systems and processes.

There is not a clear design of a 'perfect' system or process. This is logical because AT is just one of the elements of a country's healthcare and social support policy, which in turn relates to its geographical, historical, political and legislative context. Given this diversity, several authors have proposed to develop AT provision standards that would allow to compare services and to assess their impact in a systematic way, and that could support or guide countries, organisations and individual professionals to improve their systems and processes accordingly. This paper aims to contribute to this ambition by presenting a generic quality framework for assistive technology service delivery that is independent of the setting, context, legislative framework, type of technology or any other aspect. The aim is to present a truly generic framework with quality criteria and indicators that apply to all assistive technology service delivery systems and processes, whether looked at in a micro level (processes around the individual e.g. the practice of a rehabilitation centre of a community district), meso level (e.g. the service delivery scheme of a region or of an insurance company) or at a macro level (the whole country). It is intended to pinpoint at a glance the main strengths and weaknesses of the system or process, as well as the gaps that are worth a more detailed analysis for possible improvements.

Method

The quality framework was developed in three steps. First, a review of the literature on assistive technology service delivery quality was performed *(1-13),* in order to identify current or suggested best practices and ideas from previous research and theoretical perspectives. On the basis of this review, an initial set of quality criteria and indicators was produced. In the second step, this set was discussed in a series of meetings of the authors. Each author consulted colleagues and experts in his/her own country/region to get wider

input between the subsequent meetings. After three meetings the authors reached agreement on the completeness and relevance of the framework. In the third step the draft framework was sent to five experts in Brazil, Australia and India who had not previously been involved in the process. They were asked to comment on the framework and indicate whether they missed relevant aspects and whether the criteria and indicators would be applicable in their setting. Their comments were incorporated in a final version of the framework that is presented in this paper.

Findings

The resulting framework is presented below. It consists of seven criteria, each of which holds four indicators, formulated as questions. These criteria and indicators apply to the whole process that leads from the user's need identification to the provision and usage of the assistive solution.

This process usually consists of seven steps that can be recognised in most existing service delivery systems: 1) initiative; 2) assessment; 3) solution; 4) products; 5) authorization; 6) implementation; 7) management.

The term 'assistive solution' is used in a broad sense to indicate any assistive products, environmental adaptation and technological set up that – alone or in combination – provide a solution to the user's needs.

The term 'user' indicates the person who actually uses the assistive solution, e.g. the person with disabilities or the older person needing assistive technology to carry out activities of daily living tasks or to participate in education, work of social life (i.e. end-users). This also extends also to the broader sense of user, including family members and other informal or formal caregivers when they are involved in usage of the assistive solution.

The indicators for each criterion are formulated as questions, each to be answered in qualitative terms and on a 4-point rating scale: 1= adequate; 2=requiring improvement; 3=good; 4=outstanding. This relatively simple way of scoring was chosen because the intention is not to provide a detailed assessment or judgement of a system or process but to provide a framework to discuss strengths and weaknesses in a structured and systematic but also open way, allowing any professional or organisation, irrespective of the stage of development they are in, to identify points that might be improved. Thus, it can also become a framework for benchmarking and comparison and driving continuous improvement.

Criterion 1: Accessibility

To what extent is the system, scheme or process …

a) [Awareness] … known, communicated and clearly understood by the people who need AT?
b) [Eligibility] … accessible for anyone who needs AT?

c) [Reachability] … provided in locations that are easily reachable, physically accessible and at reasonable times available to the people who need AT ?
d) [Affordability] … financially affordable by the people who need AT ?

Criterion 2: Competence

To what extent is the system, scheme or process …

a) [Knowledge] … operated at each step by people who have adequate competencies and skills in relation to their duties or responsibilities?
b) [Transparency] … applied using clear procedures or evidence-based standards where all steps are tracked, objectives are declared, and meaningful outcomes are measured?
c) [Safety] … operated while ensuring that risks and safety issues are properly addressed and managed?
d) [Information] … making comprehensive and updated information on the available assistive solutions available to all actors involved?

Criterion 3: Coordination

To what extent does the system, scheme or process ensure that …

a) [Consistency] …all steps of the individual AT intervention are well coordinated with each other?
b) [Case managing] … the AT intervention is well coordinated with all other individual health, care, wellbeing, education and social interventions?
c) [Benefits] … immediate and wider benefits of AT provision are captured, such as e.g. access to education or employment or other life opportunities?
d) [Ethics] … the intervention is conducted in an ethical manner, in accordance with commonly accepted ethical principles of health, care and social interventions?

Criterion 4: Efficiency

To what extent is the system, scheme or process able to …

a) [Timeliness] … provide solutions to each individual's needs within reasonable time?
b) [Effectiveness] … make sure that the provided solution is effective in relation to the intended goals, and satisfactory from the user's viewpoint?
c) [Accountability] … keep track of the costs and the outcomes of each AT intervention?
d) [Optimization] … use costs and outcomes information to continuously improve the system (including products, processes, services) so as to maximize the outcome return on investment?

Criterion 5: Flexibility

To what extent does the system, scheme or process …

a) [Products range] … provide a range of assistive products which is wide enough to meet the varied individual needs of the served population, at an appropriate quality level?

b) [Customization] … ensure that the provided products are appropriately installed, fitted and customized to cater for each individual need?
c) [Responsiveness] … enable to quickly re-adjust the assistive solution to difficulties that may arise during usage, such as changes in clinical condition, in the person's life or in the lived environment?
d) [Innovation] … take advantage of new products or technologies appearing on the market that can meet the users' needs in a more satisfactory and cost-effective manner?

Criterion 6: User centeredness

To what extent does the system, scheme or process …

a) [Partnership] … ask for the user's view and takes it into account at each stage of the intervention?
b) [Empowerment] … provide users with all information and knowledge needed to actively participate and take responsibility for the choices, in an informed and responsible manner?
c) [Trials] … give users the possibility to try out the proposed solutions before the final choice?
d) [Freedom] … give users the possibility to appeal against decisions that don't meet their agreement, or to make different choices?

Criterion 7: Infrastructure

To what extent does the system, scheme or process …

a) [Data] … avail reliable figures and information on numbers and types of people to use services?
b) [Scoping] … ensure that the right structure, systems, processes and skills are in place to meet needs?
c) [Sustainability]… allocate adequate resources and adapt for growth in demand?
d) [Involvement] … involve user representatives in service planning, monitoring and assessment?

Discussion and Conclusion

The aim of this paper was to present a generic quality framework for AT service delivery that can be used to support or guide countries, organisations and individual professionals to improve their systems and processes accordingly, as well as to compare services and to assess their impact in a systematic way. The proposed framework covers all aspects mentioned in the literature about service delivery quality and aspects that were considered relevant by the authors. In a (limited) consultation of colleagues in Brazil, Australia and India no missing aspects were identified, which suggests the framework is rather complete. The authors believe that this framework is a good starting point for more systematic analysis and development of the quality of services delivery systems and processes.

A limitation of the procedure followed when developing this framework is that the main contributions as well as most of the publications used came from developed countries. This may have led to a bias in the resulting framework, although good input from colleagues working in a rural area in India was received. Another possible bias is caused by the fact that most of the authors are associated to the AAATE (Association for the Advancement of Assistive Technology in Europe) and thus likely share similar values. In a next phase it would be important to validate this framework for use in more low resource settings. It should be noted that the framework has not been tested in 'real life' to see whether it is indeed generic and applies to different settings. Considering these points, the proposed framework is not final. As a next step in the development of this quality framework we propose to organise a global consultancy process to obtain responses from stakeholders across the world, including users, and to plan a number of case studies in which the framework is applied to different service delivery systems and processes in different countries. On the basis of the result of such next steps a final version of the framework can be developed. Ideally that would be published by the WHO as a tool for countries, organisations and individual professionals to be used in developing and improving AT service delivery systems and processes.

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