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ICF Core Sets development for the acute hospital and early post-acute rehabilitation facilities

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Abstract

The goal of this paper is to report on the background and the methods used in the ICF Core Set development for patients in the acute hospital and early post-acute rehabilitation facilities. ICF Core Sets are sets of categories out of the International Classification of Functioning, Disability and Health (ICF) which can serve as minimal standards for the assessment, communication and reporting of functioning and health for clinical studies, clinical encounters and multi-professional comprehensive assessment and management. The ICF Core Sets were developed in a formal decision-making and consensus process, integrating evidence gathered from preliminary studies and expert opinion. The *Acute ICF Core Sets* for patients with neurological, musculoskeletal and cardiopulmonary conditions are intended for use by physicians, nurses, therapists and other health professionals working in the acute hospital on medical, surgical or other units not specialised in rehabilitation. The *Post-acute ICF Core Sets* for geriatric patients and patients with neurological, musculoskeletal or cardiopulmonary conditions are intended for use by physicians, nurses, therapists and other health professionals involved in early post-acute rehabilitation. The Acute and Post-acute ICF Core Sets are first versions and need to be tested and validated in the patient and professional perspective and in different countries, regions, health care and provider settings.

Keywords: *Health status measurements, rehabilitation, consensus development conferences, ICF, acute rehabilitation, post-acute rehabilitation, ICF Core Set*

Introduction

Patients with an acute illness or injury now have a high chance to survive if appropriate medical and surgical care is provided [1–3]. However, many patients experience a significant loss of functioning. Recovery may take a long time and may not be complete. Therefore, the outcome of an acute illness or injury depends not only on appropriate medical and surgical care, but also on the recognition of patients' needs for rehabilitation and appropriate rehabilitation management [4].

Optimal rehabilitation management requires a common understanding of functioning, disability and health which is shared by patients, physicians, nurses, therapists and other health professionals [5]. A common understanding of functioning and health

needs to be complemented by practical clinical assessment instruments. Such clinical assessment instruments should be useful across patient populations and clinical settings [5,6].

A common understanding of functioning and practical clinical assessment instruments are of particular importance and usefulness in the acute and early post-acute situation where medical and rehabilitation management goes hand in hand. In the acute situation, professionals who are generally not specialized in rehabilitation would recognise patients' rehabilitation needs and provide appropriate rehabilitation interventions. In the early post-acute situation professionals who are specialized in rehabilitation management rely on a common understanding and clinical assessment instruments to communicate within inter-disciplinary teams and to

communicate with other professionals and health-care providers.

Until recently, there was no generally accepted understanding of functioning, disability and health, and no generally accepted classification to serve as a basis for the development of measures for specific purposes, populations and settings. Therefore, the currently available and often competing measures to assess aspects of functioning vary greatly with respect to their underlying dimensions and constructs [5].

With the approval of the International Classification of Functioning, Disability and Health or ICF [7] by the 51st World Health Assembly in May 2001, we can now and for the first time rely on a worldwide accepted understanding of functioning, the ICF framework and a classification to describe and classify functioning, health and disability. Since the ICF is designed to record and organise a wide range of information about health and health-related states both for individuals and populations, it is applicable both for clinical practice and research.

It is likely that the ICF, with its components Body Functions and Structures, Activities and Participation and Environmental factors will become the universal framework in medicine and, particularly, in rehabilitation [5]. Instead, the classification, with more than 1400 categories to describe and classify health, has to be tailored to the needs of medicine, and particularly to rehabilitation, without forgoing the information needed for health statistics and health reporting. To address the issues of feasibility regarding the number of categories to be assessed and the user perspective in medicine which typically takes a condition and or situation perspective, the ICF Core Set project was initiated in 2001 [5].

The ICF Core Set project is a joint project of the ICF Research Branch of the WHO Collaboration Centre of the Family of International Classifications (DIMDI, Germany) at the Ludwig-Maximilians-University in Munich, Germany, together with the Classification, Assessment and Surveys (CAS) Team at WHO and partner organisations. The goal of the ICF Core Set project is to select sets of categories out of the whole classification, which can serve as minimal standards for the assessment, communication and reporting of functioning and health for clinical studies, clinical encounters and multi-professional comprehensive assessment and management purposes. In an initial project, ICF Core Sets were developed for 12 most burdensome chronic conditions [8–10].

In this special issue, we report on the development of the ICF Core Sets for the acute hospital and early post-acute rehabilitation facilities.

In the acute hospital, medical management dominates and is typically complemented by functioning

interventions provided by nurses and optionally by physical therapists and other health professionals. A rehabilitation physician may act as consultant to the medical staff on request. Accordingly, ICF Core Sets for the acute hospital should be tailored to the needs of physicians, nurses, and health professionals not specialised in rehabilitation management and for use in any general or specialised acute hospital [4]. For example, ICF Core Sets for the acute hospital should address the spectrum of problems encountered in different patient groups typically hospitalized according to their main diagnosis.

After the initial acute care provided by the staff in the acute hospital, some patients require specialized rehabilitation care. In addition to their rehabilitation needs, these patients may also have needs for ongoing medical and nursing care. Early post-acute rehabilitation may be provided either in the acute hospital or in a rehabilitation or nursing setting. In the acute hospital, early post-acute rehabilitation may be provided in dedicated early post-acute rehabilitation units or by mobile rehabilitation teams caring for patients on medical and surgical wards. In some countries like Germany, there are early post-acute rehabilitation units which care for patients with any underlying ICD-based diagnosis, and units caring exclusively for geriatric or neurological patients [4]. The professions work with a formal coordination or communication and typically work towards agreed specific goals, often by protocol. Accordingly, ICF Core Sets for early post-acute rehabilitation facilities should be practical and useful for professionals working in interdisciplinary rehabilitation teams and should be developed based on the experience of patients in need of medical, nurse and therapeutical management. For practical reasons, ICF Core Sets for early post-acute rehabilitation facilities should address the spectrum encountered in geriatric, neurological, cardiopulmonary or musculoskeletal patients.

The objective of this ICF Core Set project was therefore to develop ICF Core Sets for acute hospitals and early post-acute rehabilitation facilities.

The *Acute ICF Core Sets* for patients with neurological [11], musculoskeletal [12] and cardiopulmonary conditions [13] are intended for use by physicians, nurses, therapists and other health professionals working in the acute hospital and who are not specialised in rehabilitation.

The *Post-acute ICF Core Sets* for geriatric patients [14] and patients with neurological [15], musculoskeletal [16] or cardiopulmonary conditions [17] are intended for use by physicians, nurses, therapists and other health professionals specialised in rehabilitation and involved in early post-acute rehabilitation programs.

Methods

The methods to develop the ICF Core Sets involved a formal decision-making and consensus process, integrating evidence gathered from preliminary studies and expert opinion. The preliminary studies were designed to provide the conference participants with information from the patients' perspective through empirical studies using the ICF and a list of nursing interventions as assessment tools [18–20], from the researcher perspective through systematic reviews examining the outcomes used in clinical studies [21] and the expert perspective through focus groups and a Delphi process with physicians and health professionals [22]. For the participating institutions of the preliminary studies see Appendix I.

The preliminary studies provided all participants with the same information, which they could then integrate with their own experience and which formed the basis for a scientifically sound consensus. Based on these preliminary studies, relevant ICF categories were identified. The lists of these identified categories represented the starting point of the decision-making and consensus process.

In line with the literature on consensus building and team work [23], the ICF Core Set Consensus Conference was organised at a quiet monastery situated in a pleasant landscape, distant from cities and distractions. The ICF Core Set Consensus Conference took place from 28 November–1 December, 2003.

For practical reasons, it was decided that, in contrast to the development process of the ICF Core Sets for chronic conditions, the first version of the ICF Core Sets for the acute and post-acute situations would be developed in a German-speaking context involving experts from Austria, Germany and Switzerland. The main reason was that a consensus process requires excellent language skills. While it would have been possible to recruit physicians with appropriate English language skills from all regions of the world, this would have been difficult for nurses and health professionals. However, if participants do not feel comfortable to express themselves in English their view may not be taken into account. Since we expected the language barrier to be greater for the nurses and health professionals, this could have led to a bias against the nurse and health professional perspective. We therefore decided to develop the first version of the ICF Core Sets in a German-speaking context. As a consequence of this approach, the ICF Core Sets reported in this supplement need to be tested and validated in the different WHO regions.

To ensure expertise within the context of a feasible and affordable decision-making process we recruited the participants as follows. First we identified Ger-

man-speaking medical, nursing and therapeutic societies presently involved in rehabilitation care in acute and post-acute situations. We then asked these societies to nominate experts. A list of all societies associated with the conference is shown in Appendix II. Secondly, we asked each institution involved in the preliminary studies to nominate a physician, a nurse and other health professionals. Thirdly, we identified and invited experts known for their specific expertise in a condition area.

All participants received a compilation of the second level of the ICF, a complete manual and information about the consensus process two weeks prior to the consensus conference. They were asked to make themselves familiar with the major features of the classification and the process. During the conference, the first meeting consisted of a half-day training workshop, in which all participants were familiarized with the ICF framework and classification [7]. They were then provided with the evidence from the preliminary studies. The information included summary sheets of the individual preliminary studies and a list of the ICF categories identified by any study. Methods and results of the preliminary studies were also presented orally and on posters.

The following decision-making process consisted of two parts taking each one day. In the first part, the participants decided about the categories to be included in the three ICF Core Sets for patients with neurological, musculoskeletal or cardiopulmonary conditions in acute hospitals. In the second part the participants decided about the categories to be included in the four ICF Core Sets for geriatric patients, neurological, musculoskeletal or cardiopulmonary conditions in early post-acute rehabilitation facilities.

The participants joined the assigned working group (WG). There were three WGs for each of the three indications of the acute hospital and the four indications for early post-acute rehabilitation facilities. The three WGs consisted of a group with physicians, a group with nurses and social workers, and a group with therapists (physical therapists, occupational therapists, speech therapists). Each WG was guided by a WG leader. A coordinator for each indication advised the WG leaders and coordinated the discussion and voting in the plenary sessions with all experts from the three WGs.

Prior to the following three step voting process the experts of each indication were asked to agree on the spectrum of relevant and typical diagnoses of their indication. The participants were also informed that problems related to comorbidities and complications as well as problems related to drug-side effects should not be considered. Comorbidities and complications refer to other conditions and are therefore

addressed by ICF Core Sets defined by the other indications. Drug-side effects are specific to the drug and not to the indication or the acute and post-acute situation. Therefore, they should not be included in an ICF Core Set.

In the first step of the consensus process, the experts discussed, and made their decisions for all 362 second-level ICF categories (Vote A). Votes pro and con, as well as the key arguments, were recorded online within an Access database by a group assistant. The results of all three WGs of each indication were then summarised and presented to a plenary session. Categories which received less than 40% of all votes in the plenary session were eliminated at this stage. Categories which received 75% or more of all votes were included in the ICF Core Set. These decision rules were set according to probabilistic considerations: If all the participants in one group made their decision on a specific category by chance, the probability that this category would have to be reconsidered in the next vote needed to be high. Calculations according to the Bernoulli process showed that the probability that a category would receive between 40% and 75% of the votes was approximately $\frac{3}{4}$ if all the participants of a group decided by chance. The cut-off at 40% and 75% of votes was therefore chosen.

After discussions in the plenary session, there were further discussions and a second decision was made in the WGs (vote B). The results of vote B were again presented and discussed in a second plenary session. The final decision (vote C), on the undecided 2nd level ICF categories (40–74% in the vote A), was then made in this plenary session. A category was included in the ICF Core Set if it reached at least 50% of votes. Group assistants and coordinators were not allowed to vote. WG leaders were asked to cast their vote after the group in order to avoid any influential voting.

Group assistants observed the discussions and voting process and data recording for quality assurance. Votes were counted by two persons. Group leaders and group assistants were trained in use and application of the ICF and in conducting group processes prior to the beginning of the conference. The Coordinators made random checks during the voting in all groups and were available for questions, help and clarification for the rest of the time. In order to avoid bias by recording or typing errors data registration was carried out online in prepared structured formats with predefined plausibility ranges. Data were combined online via a local intranet solution.

Descriptive statistics were used to examine the frequency with which the experts endorsed the different ICF categories for inclusion in the ICF

Core Sets. The results are presented in seven conference reports in this special issue [11–17].

Discussion

The Acute and Post-acute ICF Core Sets are first versions and need to be tested and validated in the coming years in the patient and professional perspective and in different countries, regions and health care settings. The testing will be based on a standardized protocol developed by the ICF Research Branch of the WHO FIC CC (DIMDI) in Munich in cooperation with the CAS team at WHO.

The Acute and Post-acute ICF Core Sets can serve as standard for describing patients functioning in clinical practice, research and health statistics. In clinical practice, they can be used for assessment, assigning interventions and evaluation [5]. The use of the ICF Core Sets can facilitate the communication between professionals in the acute hospital and early post-acute rehabilitation facilities. They can also facilitate the reporting and hence communication of patients' problems and interventions among provider settings. The Acute and Post-acute ICF Core Sets also provide a common basis for the development of measures of functioning and classifications of interventions e.g., for nurses or therapists.

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References

1. Hunink MG, Goldman L, Tosteson AN, et al. The recent decline in mortality from coronary heart disease, 1980–1990. The effect of secular trends in risk factors and treatment. *JAMA* 1997;277:535–542.
2. Tunstall-Pedoe H, Vanuzzo D, Hobbs M, et al. Estimation of contribution of changes in coronary care to improving survival, event rates, and coronary heart disease mortality across the WHO MONICA Project populations. *Lancet* 2000;355(9205):688–700.
3. Barker W, Mullooly J. Stroke in a defined elderly population, 1967–1985: A less lethal and disabling but no less common disease. *Stroke* 1997;28(2):284–290.
4. Stucki G, Stier-Jarmer M, Grill E, Melvin J. Rationale and principles of early rehabilitation care provision after an acute injury or illness. *Dis Rehab* 2005;27(7/8):353–359.
5. Stucki G, Ewert T, Cieza A. Value and application of the ICF in rehabilitation medicine. *Dis Rehab* 2002;24(17):932–938.
6. Cohen ME, Marino RJ. The tools of disability outcomes research functional status measures. *Arch Physic Med Rehab* 2000;81(12, Part 2):S21–S29.

7. World Health Organisation (WHO). International Classification of Functioning, Disability and Health: ICF. Geneva: WHO; 2001.
8. Cieza A, Ewert T, Üstün TB, Chatterji S, Kostanjsek N, Stucki G. Development of ICF Core Sets for patients with chronic conditions. *J Rehab Med* 2004;36(Suppl. 44):9S–11S.
9. Stucki G, Grimby G. Applying the ICF in Medicine. *J Rehab Med* 2004;36(Suppl. 44):5S–6S.
10. Üstün B, Chatterji S, Kostanjsek N. Comments from WHO for the Journal of Rehabilitation Medicine special supplement on ICF Core Sets. *J Rehab Med* 2004;36(Suppl. 44):7S–8S.
11. Ewert T, Grill E, Bartholomeyczik S, et al. ICF Core Set for patients with neurological conditions in the acute hospital. *Dis Rehab* 2005;27(7/8):367–373.
12. Stoll T, Brach M, Huber EO, et al. ICF Core Set for patients with musculoskeletal conditions in the acute hospital. *Dis Rehab* 2005;27(7/8):381–387.
13. Boldt C, Grill E, Wildner M, et al. ICF Core Set for patients with cardiopulmonary conditions in the acute hospital. *Dis Rehab* 2005;27(7/8):375–380.
14. Grill E, Hermes R, Swoboda W, Uzarewicz C, Kostanjsek N, Stucki G. ICF Core Set for geriatric patients in early post-acute rehabilitation facilities. *Dis Rehab* 2005;27(7/8):411–417.
15. Stier-Jarmer M, Grill E, Ewert T, et al. ICF Core Set for patients with neurological conditions in early post-acute rehabilitation facilities. *Dis Rehab* 2005;27(7/8):389–395.
16. Scheuringer M, Stucki G, Huber EO, et al. ICF Core Set for patients with musculoskeletal conditions in early post-acute rehabilitation facilities. *Dis Rehab* 2005;27(7/8):405–410.
17. Wildner M, Quittan M, Portenier L, et al. ICF Core Set for patients with cardiopulmonary conditions early post-acute rehabilitation facilities. *Dis Rehab* 2005;27(7/8):397–404.
18. Grill E, Huber EO, Stucki G, Herceg M, Fialka-Moser V, Quittan M. Identification of relevant ICF categories by patients in the acute hospital. *Dis Rehab* 2005;27(7/8):447–458.
19. Grill E, Lipp B, Boldt C, Stucki G, Koenig E. Identification of relevant ICF categories by patients with neurological conditions in early post-acute rehabilitation facilities. *Dis Rehab* 2005;27(7/8):459–465.
20. Grill E, Stucki G, Boldt C, Joisten S, Swoboda W. Identification of relevant ICF categories by geriatric patients in an early post-acute rehabilitation facility. *Dis Rehab* 2005;27(7/8):467–473.
21. Scheuringer M, Grill E, Boldt C, Mittrach R, Müllner P, Stucki G. Systematic review of measures and their concepts used in published studies focusing on rehabilitation in the acute hospital and in early post-acute rehabilitation facilities. *Dis Rehab* 2005;27(7/8):419–429.
22. Grill E, Quittan M, Huber EO, Boldt C, Stucki G. Identification of relevant ICF categories by health professionals in the acute hospital. *Dis Rehab* 2005;27(7/8):437–445.
23. Delbecq AL, Van de Ven AH, Gustofon DH. Group techniques for program planning. A guide to nominal group and delphi processes. Glenview, Illinois: Scott, Foresman and Company; 1975.

Appendix I

Participating institutions for the preliminary studies

Acute hospitals

Departments of Anaesthesiology, Internal Medicine, Heart Surgery, Neurology, Neurosurgery, Surgery, Orthopaedics, Oncology, Physical Medicine and Rehabilitation, the University of Munich, Germany.

Departments of Anaesthesiology, Internal Medicine, Heart Surgery, Neurology, Neurosurgery, Surgery, Orthopaedics, Oncology, Physical Medicine and Rehabilitation, the University of Vienna, Austria.

Departments of Anaesthesiology, Internal Medicine, Heart Surgery, Neurology, Neurosurgery, Surgery, Orthopaedics, Oncology, Physical Medicine and Rehabilitation, the University of Zurich, Switzerland.

Post-acute rehabilitation facilities

Department of Physical Medicine and Rehabilitation, the University of Munich, Germany.

Department of Physical Medicine and Rehabilitation, Community Hospital Bogenhausen, Munich, Germany.

Neurological Therapy Centre Burgau, Germany.

Neurological Hospital Bad Aibling, Germany.

Geriatric Rehabilitation Hospital of the Arbeiterwohlfahrt Bezirksverband Unterfranken e.V., Würzburg, Germany.

Appendix II

Collaborating and associated societies

Ärztliche Arbeitsgemeinschaft zur Förderung der Geriatrie in Bayern e.V.

Bundesarbeitsgemeinschaft der Akutkrankenhäuser mit Abteilungen der fachübergreifenden Frührehabilitation e.V.

Bundesverband der Diplomierten PhysiotherapeutInnen Österreichs

Deutsche Gesellschaft für Geriatrie e.V.

Deutsche Gesellschaft für Neurologische Rehabilitation

Deutsche Gesellschaft für Physikalische Medizin und Rehabilitation

Deutsche Schlaganfallgesellschaft

Deutsche Vereinigung für den Sozialdienst im Krankenhaus e.V.

Deutscher Berufsverband für Pflegeberufe

Deutscher Bundesverband für Logopädie e.V.

Deutscher Pflegerat

Deutscher Verband der Ergotherapeuten e.V.

Deutscher Verband für Physiotherapie – Zentralverband der Physiotherapeuten / Krankengymnasten e.V.

ErgotherapeutInnen-Verband Schweiz
International Society of Physical and Rehabilitation
Medicine ISPRM
Österreichische Gesellschaft für Physikalische
Medizin und Rehabilitation
Österreichischer Gesundheits- und Krankenpfle-
geverband
Schweizer Berufsverband für Pflegefachfrauen und
Pflegefachmänner

Schweizer Physiotherapie Verband
Schweizerische Gesellschaft für Physikalische
Medizin und Rehabilitation
Schweizerischer Fachverband Sozialdienst in Spi-
tälern
Verband der Diplomierten ErgotherapeutInnen
Österreichs