



STRENGTHENING HEALTH-RELATED REHABILITATION SERVICES AT THE NATIONAL LEVEL

Christoph GUTENBRUNNER, MD, PhD¹, Jerome BICKENBACH, LLB, PHD²⁻⁴, John MELVIN, MD, PhD^{3,5}, Jorge LAINS, MD^{6,7} and Boya NUGRAHA, MS, PhD^{1,8}

From the ¹Department of Rehabilitation Medicine, Hannover Medical School, Hanover, Germany, ²Department of Health Sciences and Health Policy, Faculty of Humanities and Social Sciences, University of Lucerne, Lucerne, ³Swiss Paraplegic Research (SPF), ⁴ICF Research Branch, a cooperation partner within the WHO Collaborating Centre for the Family of International Classifications in Germany (at DIMDI), Nottwil, Switzerland, ⁵Sidney Kimmel Medical College, Thomas Jefferson University, Philadelphia, PA, USA, ⁶Centro de Medicina de Reabilitação da Região Centro, Tocha, ⁷Universidade Católica Portuguesa, Medicina Dentária, Centro Regional de Viseu, Portugal and ⁸Graduate Program Faculty of Medicine, Universitas Gadjah Mada, Yogyakarta, Indonesia

Objective: One of the aims of the World Health Organization's Global Disability Action Plan is to strengthen rehabilitation services. Some countries have requested support to develop (scale-up) rehabilitation services. This paper describes the measures required and how (advisory) missions can support this purpose, with the aim of developing National Disability, Health and Rehabilitation Plans.

Recommendations: It is important to clarify the involvement of governments in the mission, to define clear terms of reference, and to use a systematic pathway for situation assessment. Information must be collected regarding policies, health, disability, rehabilitation, social security systems, the need for rehabilitation, and the existing rehabilitation services and workforce. Site visits and stakeholder dialogues must be done. In order to develop a Rehabilitation Service Implementation Framework, existing rehabilitation services, workforce, and models for service implementation and development of rehabilitation professions are described. Governance, political will and a common understanding of disability and rehabilitation are crucial for implementation of the process. The recommendations of the World Report on Disability are used for reporting purposes.

Conclusion: This concept is feasible, and leads to concrete recommendations and proposals for projects and a high level of consensus stakeholders.

Key words: World Health Organization Global Disability Action Plan; National Disability Health and Rehabilitation Plan; rehabilitation advisory team.

Accepted Feb 7, 2017, Epub ahead of print April 6, 2017

J Rehabil Med 2017; 49: 00–00

Correspondence address: Christoph Gutenbrunner, Department of Rehabilitation Medicine, Hannover Medical School, DE-30625 Hannover, Germany. E-mail: gutenbrunner.christoph@mh-hannover.de

Approximately 1 billion people worldwide experience disability, with increasing survival rates following severe disease and trauma, increasing prevalence of chronic health conditions, and population ageing (1). The prevalence of disability is higher in low- and lower-middle-income countries. Since rehabilitation, as a health strategy, aims to enable people

experiencing disability to participate fully in all areas of life (2), it is arguably the health strategy of the 21st century (3). Consequently, the World Health Organization (WHO) has identified health-related rehabilitation as an essential component of universal health coverage (4).

The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD; (5)) states that access to rehabilitation is a human right. After assessing the global need for rehabilitation, the WHO has called in its Global Disability Action Plan (GDAP) 2014–2021 for action on the part of countries to “strengthen and extend rehabilitation, habilitation, assistive technology, assistance and support services, and community-based rehabilitation” (4). Countries have formally committed themselves to this goal. However, it is not always clear how countries can meet this commitment, and what measures they need to take. Provision of rehabilitation services for all people in need is a huge challenge, particularly in low- and lower-middle-income countries. Information about the prevalence of disability in these countries is poor, and their health systems are generally less developed and health resources limited. There is also a lack of standardization of rehabilitation services, which leads to problems in goal-setting and implementation planning.

The International Society of Physical and Rehabilitation Medicine (ISPRM) has made a commitment, in its formal agreement as an organization in official relationship with the WHO, to support countries “in the development of policies, strategies and plans to strengthen the provision of rehabilitation and related services by establishing Rehabilitation Advisory Teams” (ISPRM-WHO Collaboration Plan 2014–2017). The Strengthening Medical Rehabilitation Subcommittee of the ISPRM-WHO-Liaison Committee has therefore developed a framework and methodology for systematically conducting advisory missions at the country level.

This paper describes the development of principles for carrying out missions of the Rehabilitation Advisory Teams (RATs) in support of National Health, Disability and Rehabilitation Plans (NHDRPs) at the country level. Furthermore, this paper describes the development and field testing of methods for situation

assessment, the development of recommendations and implementation of projects.

BACKGROUND

WHO Global Disability Action Plan 2014–2021

In the WHO GDAP 2014–2021, the objective “to strengthen and extend rehabilitation, habilitation, assistive technology, assistance and support services, and community-based rehabilitation” is made concrete in terms of the following actions (4):

- to provide leadership and governance for developing and strengthening policies, strategies and plans;
- to provide adequate financial resources to ensure the provision of appropriate habilitation and rehabilitation services and assistive technologies;
- to develop and maintain a sustainable workforce for rehabilitation and habilitation;
- to expand and strengthen rehabilitation and habilitation services, ensuring integration, across the continuum of care, into primary (including community), secondary and tertiary levels of the healthcare system;
- to make available appropriate assistive technologies that are safe, of good quality and affordable;
- to promote access to a range of assistance and support services; and
- to engage, support and build the capacity of persons with disabilities and their family members and/or informal caregivers.

Furthermore, the WHO GDAP 2014–2021 aims to strengthen research, including the life situation of persons with disabilities.

WHO-ISPRM Collaboration Plan 2014–2017

The WHO-ISPRM Collaboration Plan 2014–2017, specifies the following activities in light of the WHO agenda for rehabilitation:

- to develop a matrix and checklists to analyse existing rehabilitation services as well as to identify gaps in service provision;
- to establish a Rehabilitation Services Advisory Team of experts with global and regional health systems understanding who can provide guidance;
- to provide advice to the requesting country by Rapid Response Projects providing support to build up rehabilitation services and educational programs for the rehabilitation workforce, as requested by the WHO.

Questions formulated by the Rehabilitation Advisory Team

- As a starting point for the development of a concrete plan and tools that the Rehabilitation Services Ad-

visory Teams can use to carry out its activities, the following questions were formulated by the RAT:

- How should the process of the mission be structured and what are the roles of national government, the WHO and the team itself?
- How should sound and relevant information about the prevalence of disability and the need for rehabilitation at the country level be gathered?
- How should the country-level governance and policies for rehabilitation service implementation be investigated and the relevant stakeholders for rehabilitation determined?
- How should existing rehabilitation services be systematically described and core competencies of rehabilitation professionals investigated?
- What should be the benchmark for service implementation and professional development?
- How should a consensus among stakeholders be achieved and the recommendations prioritized?
- How can the results be reported in a systematic and feasible way in order to support the implementation of the recommendations?

Based on these questions a plan for advisory missions was developed and a Rehabilitation Service Assessment Tool (RSAT) and Rehabilitation Service Implementation Framework (RSIF) proposed. All 3 of these implementation elements were tested and refined in 2 missions that were conducted on behalf of the WHO in Egypt (6) and the Ukraine (7). An additional mission was conducted in collaboration with Handicap International (HI) in the Democratic People's Republic of Korea (DPRK; 8).

MISSION PLAN

Government involvement and responsibilities

To ensure the involvement and responsibility of national governments, WHO and the RAT, the mission was clarified by means of the terms of reference (ToR) of the mission. In order to ensure acceptance of the outcomes of the mission, a request from the government (usually, the Ministry of Health (MOH)) was sought. This request goes through the WHO country office and then to WHO headquarters in Geneva, for the attention of the coordinator of Blindness and Deafness Prevention, Disability and Rehabilitation. It might have made sense also to involve the regional offices of the WHO. In future, this pathway of requests might be modified to adapt to the situation of a specific country (for example, some steps might need to be omitted, or other relevant stakeholders or bodies involved).

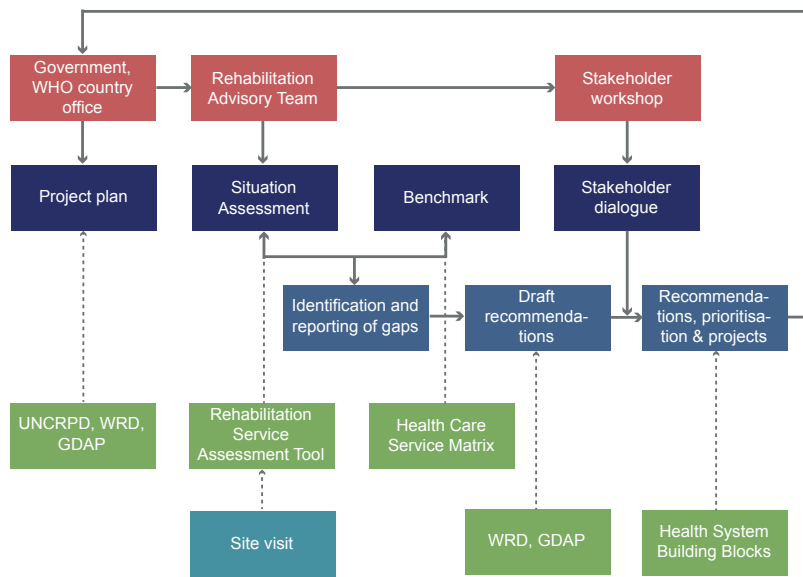


Fig. 1. The process of developing National Disability, Health and Rehabilitation Plans. Red: actors; dark-blue: activities; light-blue: document development; green: guiding documents (these may change if new tools become available); blue-green: the site visit is carried out by the Rehabilitation Advisory Team (RAT) with support from the World Health Organization (WHO) country office.

Systematic pathway

The systematic pathway for the missions (Fig. 1) describes the working steps from the project plan (prepared by the government and/or WHO country office), the situation assessments in comparison with a benchmark, the outcome in terms of identifying the gaps, and the process for developing recommendations and prioritizing them in a stakeholder dialogue. Important documents and guidelines are listed in green in Fig. 1.

Terms of reference

The guiding principles and goals of the mission are described in the ToR. The NHDRP was developed in light of WHO GDAP objectives and based on the recommendations of the World Report on Disability (WRD) and the rights sets out in the UNCRPD. The ToR defined the method of data collection (situation analysis) and the programme and partners for the country (including government representatives, WHO experts and relevant stakeholders (in particular, organizations of people with disabilities)).

Rehabilitation Advisory Team

The RAT includes experts with an appropriate range of knowledge, both of WHO principles and documents (such as the WRD, GDAP, and health system building blocks) and, more generally, of health systems and rehabilitation principles. The experts should also have a least practical experience in clinical and social rehabilitation and negotiation skills. It is recommended that the experts participating in the missions have an academic background, with cultural and political knowledge of the country and its health and social systems.

It is also helpful if one team member is fluent in the national language; although a language barrier can also be overcome by a good interpreter.

Information collection

For the recommendations it is important to collect sufficient information about relevant policies in the area of disability and rehabilitation, the need for rehabilitation at the population level, the health and social security systems, and existing rehabilitation services and workforce. Three main approaches were used to gather this information:

Searching accessible statistical sources about the population, economy, epidemiology, and health policies, and the existing rehabilitation services and workforce, including information from WHO country reports and other UN agencies (e.g. United Nations Development Programme (UNDP)/the Office of the United Nations high Commissioner for Human Rights (OHCHR)).

- Asking the MOH and WHO country office for information specified in the *Rehabilitation Service Assessment Tool*¹.
- *Site visits* with experts, users, decision-makers and persons with disabilities, to collect information to provide an important insight into the “real” situation and provide an impression of the lived experience of people living in the country. It is crucial to develop an understanding of the needs, existing services and policies in the country.

¹For the missions performed thus far a self-developed Rehabilitation Service Assessment Tool (RSAT) has been used and revised after testing. The authors have been informed that a WHO situation analysis tool is under development.

Site visits

For site visits, it is important to ensure that existing rehabilitation services and the most important stakeholders are visited. These stakeholders are, in particular, representatives of:

- the Ministry of Health;
- the Ministry of Social Affairs;
- other ministries involved (e.g. the Ministry of Education, Ministry of Labour, Ministry of Justice, Ministry of Defence, and others);
- organizations of persons with disabilities;
- professional organizations of rehabilitation professionals;
- rehabilitation service providers (including rehabilitation teams);
- institutions of rehabilitation research and epidemiology (if they exist).

The local organizer of the site visit (e.g. from the WHO country office) should ensure that the rehabilitation services visited are representative of rehabilitation services in the country. The services visited should include hospitals and rehabilitation units as well as mobile and community-based services.

The views of relevant stakeholders; not only government officials and rehabilitation professionals, but also organizations of persons with disabilities, must be involved in the information process. It is advantageous if the wider scientific community and its institutions are also involved.

Governance and political will

Rehabilitation service implementation (as with other service implementation) is dependent on governance and political will. Implementation will be influenced by responsibilities that are sometimes split between different stakeholders and even within governments: health-related rehabilitation is often the responsibility of the MOH, while social compensation and, in many cases, delivery of assistive devices, is the responsibility

of the Ministry of Social Affairs, and the training of rehabilitation professionals is the responsibility of the Ministry of Education. Thus, it is important to investigate responsibilities for rehabilitation issues across all relevant government ministries. Rehabilitation is one of the health strategies and has equal value to those of prevention, curative care and health maintenance (3). If the responsibility is split between ministries, the manner of communication and coordination between ministries is important. Finally, the RAT should have knowledge of relevant laws and regulations (both existing laws and those in preparation).

The mission depends on being aware of how disability and rehabilitation is understood at government, expert and population levels. This includes cultural norms and attitudes. It is evident in the laws and policies of many countries, as well as in how these terms are used in the local language, that they do not follow the WHO definition of disability as “the outcome of an interaction between a health condition and the person’s environment” (9). Language use often represents attitudes towards people with disabilities and understanding of disability itself.

REHABILITATION SERVICE IMPLEMENTATION FRAMEWORK

In order to develop recommendations for service implementation, it is important to provide guidance based on scientific principles for which types of rehabilitation services are needed and how they should be organized. This also applies to the description of the field of competence of rehabilitation professionals. Such a framework or matrix is a precondition to the analysis of existing rehabilitation services and the available rehabilitation workforce. The matrix of health-related rehabilitation services developed by the authors is described in Table I.

One of the most challenging issues for rehabilitation service implementation advisory missions is to systematically describe existing rehabilitation services

Table I. Matrix of health-related rehabilitation services (from Gutenbrunner et al. (8); modified)

	A. Acute care Types of service	B. Post-acute care Types of service	C. Long-term-care Type of service
Tertiary level of healthcare	A.1: Acute rehabilitation wards A.2: Mobile acute rehabilitation teams	B.1: Inpatient post-acute rehabilitation unit	–
Secondary level of healthcare	A.2: Mobile acute rehabilitation teams	B.1: Inpatient post-acute rehabilitation unit B.2: Outpatient post-acute rehabilitation unit B.3: Mono-professional post-acute services B.2: Outpatient post-acute rehabilitation unit	C.1: Intermittent inpatient rehabilitation service
Primary level of healthcare	–	B.3: Mono-professional post-acute services	C.2: Primary care rehabilitation centres C.3: Mono-professional long-term services C.4: Community-based rehabilitation service

Bold: most important types of rehabilitation services.

and recommend service implementation. Due to the lack of an internationally accepted classification of rehabilitation services, Meyer et al. (10) developed a conceptual description of rehabilitation services, and Gutenbrunner et al. (11) proposed dimensions (service organization, financing and service delivery) for describing rehabilitation services. This distinction has been shown to be useful and can be used for describing or designing prototype services (12). Nonetheless, this tool cannot replace a “normative” description or classification of services. For this, some international and interdisciplinary consensus projects are necessary.

For the country mission, RAT experts chose a pragmatic approach and used a matrix in terms of primary, secondary and tertiary levels of healthcare and for all phases of care (acute, post-acute and long-term) (13). In addition, narrative descriptions of the most important types of rehabilitation services were provided (Box 1). This pragmatic approach was applicable for the development of NHDRPs. A more consensus-based service description is needed for the future (12).

A similar issue arose when describing the field of competence of rehabilitation professionals. The WHO list of health professionals has some weaknesses from

Box 1. Short narrative descriptions of the most relevant types of health-related rehabilitation services (11)

- *Acute rehabilitation services delivered in hospitals at the secondary and tertiary levels.* The target group are patients with severe disease or injury who are likely to develop long-term disability. Acute rehabilitation services should start even during intensive care and should be performed in multi-professional teams (including, physical rehabilitation medicine (PRM) doctor, physiotherapist (PT), occupational therapist (OT), and other rehabilitation professionals). Acute rehabilitation services may be delivered in specialized acute rehabilitation wards or in mobile acute rehabilitation teams.
- *Post-acute rehabilitation services delivered immediately or shortly after discharge from acute care hospitals.* The target groups are patients with persisting impairment activity limitations and participation restrictions after acute care or trauma. Post-acute rehabilitation services improve functioning (including participation) and can contribute to earlier discharge from hospital. For more severe cases (with limitations in mobility and activities of daily living) post-acute rehabilitation should be carried out in inpatient post-acute rehabilitation units. Patients with fewer restrictions can be referred to outpatient post-acute rehabilitation units. For patients with minor deficits mono-professional services may be sufficient. Post-acute rehabilitation services should be specialized for the specific disease or trauma and be delivered by a multi-professional rehabilitation team.
- *Long-term rehabilitation services, which aim to improve functioning for persons with long-term disability, including congenital disability, acquired disability and chronic diseases.* These services are also the main entrance point for more specialized rehabilitation if needed. Long-term rehabilitation can be performed by rehabilitation professionals (e.g. PRM doctors, PTs, OTs). In many cases, primary healthcare professionals (e.g. family doctors, primary healthcare rehabilitation workers) may take an important role in long-term rehabilitation. Long term rehabilitation can be delivered in primary care rehabilitation centres and as mono-professional long-term rehabilitation services. If no specialized rehabilitation exists, community-based rehabilitation (CBR) is a model to provide some rehabilitation service for persons in need. It should be closely connected to an inclusive community development policy (CBD). Intermittent inpatient rehabilitation services can be used to induce and bolster rehabilitation effects in patients with chronic health conditions, in particular if they are related to psychosocial stress and vocational problems.
- *Early detection of disability units (congenital disability and acquired disability)* can be implemented as specific units (e.g. outpatient services in specialized hospitals) and must be integrated as a component of all healthcare services. This may overlap with disability assessment centres.

Box 2. Short descriptions of rehabilitation professions and their main roles in the rehabilitation team (15)

- *Physicians:* diagnosing the underlying pathology and impairments, medical assessment and treatment, setting-up treatment and rehabilitation plan, prescription of pharmacological and non-pharmacological treatments and assessment of response to these.
- *Rehabilitation nurses:* addressing and monitoring day-to-day care needs. Expertise in the management of tissue viability and continence problems. Providing emotional support to patients and their families.
- *Physiotherapists:* detailed assessment of posture and movement problems, administering physical treatments, including exercise, to restore movement and alleviate pain, etc.
- *Occupational therapists:* assessing the impact of physical or cognitive problems on activities of daily living, return to work, education and/or leisure activities, etc. Providing expertise on strategies that can be used by the patient and his/her family and environmental adaptations to facilitate independence.
- *Speech and language therapists:* assessing and treating communication and swallowing disorders.
- *Clinical psychologists:* detailed assessment of cognitive, perceptual and emotional/behavioural problems. Development of strategies to manage these with the patient, his/her family and with other health professionals.
- *Social workers:* promoting participation, community re-integration and social support.
- *Prosthetists, orthotists and rehabilitation engineers:* expertise in the provision of technologies ranging from splints and artificial limbs to environmental controls to address functional limitations; for example, following limb loss, loss of independent mobility, loss of ability to communicate.
- *Dieticians:* assessing and promoting adequate nutrition.

the perspective of rehabilitation (14). The list does not reflect the professions identified by Neumann et al. (15) (Box 2). The definition of rehabilitation professionals from the WRD does not reflect the differentiation we believe is necessary for provision of a high-quality rehabilitation service. There is no internationally accepted description of, and curriculum for, community-based rehabilitation workers. Thus, a pragmatic approach was chosen based on a common understanding of training and professional roles of the most relevant rehabilitation professions.

With regard to benchmarking, no internationally accepted standards existed for the quantity and quality of rehabilitation services in health systems. From systematic research it can be recommended that health-related rehabilitation services should be integrated into the health system and financed like other (general) health services as part of the goal of universal health coverage. Thus, at present, NHDRPs cannot make quantitative recommendations for service implementation. Estimating how many services are needed to meet the needs must be part of the implementation process.

In order to achieve consensus among stakeholders of health and rehabilitation systems, the implementation tool of a stakeholder dialogue was used. This is a tool for reaching consensus for decision-making regarding policies (16, 17).

For the development of an NHDRP, the stakeholder dialogue was used to discuss the recommendations proposed by the RAT. Each recommendation was presented and briefly discussed. If there was broad agreement (>75% of participants) the recommendation was accep-

Table II. Recommendations framework according of the chapter on rehabilitation of the World Report on Disability (WRD)

No	WRD chapter	Recommendation area from the WRD	Recommendation for the country	Expected outcomes	Implementation projects
1.	Disability – a global picture	Adopt the ICF			
2.		Improve national disability statistics			
3.		Improve the comparability of data			
4.	General healthcare	Develop appropriate tools and fill the research gaps			
5.		Policy and legislation			
6.		Financing and affordability			
7.		Service delivery			
8.		Human resources			
9.		Data and research			
10.	Rehabilitation	Policies and regulatory mechanisms			
11.		Data collection			
12.		Financing			
13.		Human resources			
14.		Service delivery			
15.		Technology			
16.	Other issues	Research and evidence-based practice			
17.		Terminology and translation of documents			
18.		Education and media campaigns			
20.		Stakeholder dialogue			
21.	Response to specific country needs				

ICF: International Classification of Functioning, Disability and Health.

ted. If the level of acceptance was lower a more detailed discussion was applied, the recommendation voted on again, and the result documented for the final report. In theory, recommendations with less than 25% of the vote were excluded from the final report; however, until now this has not happened, probably due to the fact that the RATs had single discussions with all stakeholders beforehand. Finally, all participants in the stakeholder workshop assigned a priority level to each recommendation. The mean priorities were set out in the final report.

For reporting purposes the decision was made about the best structure for the recommendations. The following options were considered:

- use some general recommendations and all specific recommendations on rehabilitation from the WRD (a total of 20 categories of recommendations); or
- use the recommendations from the GDAP, objective 2 strengthening rehabilitation (52 categories of recommendations).

For pragmatic reasons it was decided to use fewer categories (see Table II). All of the most important areas of service implementation are covered in the list. Additional categories were provided at the end after final agreement with the RAT; in 1 case the report was transformed in light of the WHO 6 health systems building blocks (18) and “synchronized” with other health system implementation activities at the country level.

APPLICATION, TESTING AND RECOMMENDATIONS

Application and testing

The plan for developing an NHDRP described here, based on the ISPRM-WHO collaboration plan, was used

in Egypt (in 2015; (6)) and in the Ukraine (in 2016; (7)). Another application was conducted in collaboration with Handicap International (HI) for the DPRK (8). Summarizing these experiences, which might also be regarded as testing the underlying principles, the following conclusions can be drawn:

- The overall concept is feasible and helpful for developing NHDRPs.
- The development of NHDRPs is strongly dependent on the political will in the country and on support from national bodies, such as the MOH and WHO country offices, as well as the commitment of experts from the country.
- The methods of collecting information are feasible and lead to a good picture of the situation. In this context, using a standardized assessment tool is very useful. The first draft under development has already provided a good basis of information. It would be helpful to use a standardized questionnaire for situation analysis, similar to the Ear and Hearing Care Situation Analysis Tool (19).
- There is a lack of information about the prevalence of disability in Egypt and Ukraine and the survey methods are inconsistent, resulting in estimates of disability rates at odds with the WRD figures. It is strongly recommended that countries use an internationally accepted and comparable method, such as the Model Disability Survey (20). WHO headquarters in Geneva should take a lead in performing these surveys. It also would be helpful to perform international scientific studies to evaluate the lived experience of persons with specific health conditions (e.g. by using the methodological approach of the International Survey on Spinal Cord Injury (InSCI; (21)).

- For the implementation of appropriate rehabilitation services, in addition to political will, the working structure within and between ministries is of major importance. There must be high-level responsibility and a sound mechanism for communication and coordination among responsible bodies.
- Another important factor is the understanding and conceptualization of disability. The WHO definition of disability (9) is not yet incorporated everywhere, and terminology in national languages, in some cases, may be a barrier to a modern understanding of disability². There is a need for cultural and linguistic expertise to clarify this issue; regional WHO offices may play a major role in this.
- For RATs, it is crucial to talk to different stakeholders, in particular to government and WHO representations and to representatives of persons with disabilities. It is also crucial to involve national professional groups, who may be in competition. Experts in service provision and financing (e.g. health insurance) should also be consulted.
- It is important that RAT missions are carried out on behalf of the WHO (or another international organization) to ensure that there is “objectivity” underlying the mission. Lobbying for any specific interest is contra-productive. It is important that RAT members develop a good understanding of the situation in the country as well as having a clear understanding of health, disability and rehabilitation principles. RATs must work with empathy and sensitivity regarding local expertise and cultural backgrounds.
- Stakeholder dialogues are an important tool to reach consensus in the country. Approximately 70% of the recommendations from the RATs were agreed without any controversial discussion. The other recommendations were agreed after explanation and discussion; some with modifications. During the stakeholder dialogues a few additional recommendations and projects were proposed and agreed. The prioritization exercise provided good insight into the predominant needs and led to an understanding of specific challenges.
- Working structures within and between ministries.
- Data collection and surveys on prevalence of disability and the need for rehabilitation.
- Standards of rehabilitation services and principles of implementation (including technical equipment).
- Strengthening rehabilitation workforce according to international standards (including description of professions and academic curricula), including community-based rehabilitation workers.
- Improving knowledge about disability and rehabilitation of all health professionals, as well as influencing positive attitudes towards disability in the general population.
- Suggesting concrete implementation projects, including model rehabilitation services, training sites as well as local or regional disability surveys.
- Research on implementation and outcome in the field of health-related rehabilitation.

Experience at the country level shows that it would be helpful if WHO headquarters, in collaboration with regional and country offices, took a strong role in the following aspects:

- translating and culturally adapting documents (including definitions, classifications, checklists, and assessment questionnaires). This must include not only the official WHO languages. In Egypt, for example, the medical workforce speaks English for healthcare purposes, but Egyptian Arab is required for translation of patients’ assessments. In the Ukraine, using Russian makes documentation available to a high proportion of professionals and other populations, but is a barrier to wider use, as Ukrainian is widely used and provides national identity. It is important to facilitate the translation and description of disability and functioning to national languages;
- providing and lobbying for a uniform system of disability data collection, and supporting model testing. These systems could be the Model Disability Survey that has been developed, and which uses a common definition of, and conceptual framework for, disability based on the International Classification of Functioning, Disability and Health (ICF) (20).
- supporting the implementation of the above-specified rehabilitation services, and collecting and publishing data regarding evidence about whether these services result in better outcomes (e.g. by the Rehabilitation Guideline Development Group).

Recommendations

The resulting recommendations at the country level included the following topic areas:

- Understanding of disability and goal-setting in disability and rehabilitation policies.

²E.g. in Slavic countries disability is translated as “invalidity”, a word that describes being “not (or less) valid” and thus refers to the “old model” that disability is an attribute of a person and making them less valid in contribution to society.

CONCLUSION

The application and testing of this plan for conducting missions to strengthen rehabilitation services at the country level in Egypt, Ukraine and the DPRK shows

that it is feasible and can lead to concrete recommendations and proposals for projects and a high level of consensus of stakeholders. However, more projects should be carried out, and internationally agreed tools for data collection and implementation goals (i.e. model rehabilitation services and standards for rehabilitation workforce competencies) developed.

REFERENCES

1. World Health Organization, The World Bank. World report on disability. Geneva: WHO; 2011.
2. Meyer T, Gutenbrunner C, Bickenbach J, Cieza A, Melvin J, Stucki G. Towards a conceptual description of rehabilitation as a health strategy. *J Rehabil Med* 2011; 43: 765–769.
3. Stucki G. Olle Hook Lectureship 2015: The World Health Organization's paradigm shift and implementation of the International Classification of Functioning, Disability and Health in rehabilitation. *J Rehabil Med* 2016; 48: 486–493.
4. World Health Organization. Global Disability Action Plan. Geneva: WHO; 2014. Available from: http://apps.who.int/iris/bitstream/10665/199544/1/9789241509619_eng.pdf?ua=1.
5. United Nations. Convention on the rights of persons with disabilities 2006. Geneva: UN. Available from: <http://www.un.org/disabilities/convention/conventionfull.shtml>
6. Gutenbrunner C, Tederko P, Grabljevec K, Nugraha B. Responding to the WHO Global Disability Action Plan in Ukraine. *J Rehabil Med* 2017; 49: XX–XX.
7. Gutenbrunner C, Nugraha B. Responding to the WHO Global Disability Action Plan in Egypt. *J Rehabil Med* 2017; 49: XX–XX.
8. Nugraha B, Gutenbrunner C. Responding to the WHO Global Disability Action Plan in Democratic People's Republic of Korea. *J Rehabil Med* 2017; 49: XX–XX.
9. World Health Organization. International Classification of Functioning, Disability and Health: ICF. Geneva: WHO; 2001.
10. Meyer T, Gutenbrunner C, Kiekens C, Skempes D, Melvin JL, Schedler K, et al. ISPRM discussion paper: proposing a conceptual description of health-related rehabilitation services. *J Rehabil Med* 2014; 46: 1–6.
11. Gutenbrunner C, Bickenbach J, Kiekens C, Meyer T, Skempes D, Nugraha B, et al. ISPRM discussion paper: proposing dimensions for an International Classification System for Service Organization in Health-related Rehabilitation. *J Rehabil Med* 2015; 47: 809–815.
12. Kiekens C, Meyer T, Gimigliano F, Baffone C, Gutenbrunner CM, UEMS PRm ICF Workshop moderators and rapporteurs. European initiative for the application of the International Classification of Service Organization in Health-related Rehabilitation (ICSO-R). *Eur J Phys Rehabil Med* 2016; Nov 24 [Epub ahead of print].
13. Gutenbrunner C, Meyer T, Stucki G. The field of competence in physical and rehabilitation medicine in light of health classifications: an international perspective. *Am J Phys Med Rehabil* 2011; 90: 521–525.
14. World Health Organization. Classifying health workers: mapping occupations to the international standard classification 2016. [Cited 2017 Jan 30]. Available from: http://www.who.int/hrh/statistics/mapping_occupations.pdf.
15. Neumann V, Gutenbrunner C, Fialka-Moser V, Christodoulou N, Varela E, Giustini A, et al. Interdisciplinary team working in physical and rehabilitation medicine. *J Rehabil Med* 2010; 42: 4–8.
16. Welp M, de la Vega-Leinert A, Stoll-Kleemann S, Jaeger CC. Science-based stakeholder dialogues: theories and tools. *Global Environ Chang* 2006; 16: 170–181.
17. von Groote PM, Giustini A, Bickenbach JE. Analysis and implementation of a World Health Organization health report methodological concepts and strategies. *Am J Phys Med Rehabil* 2014; 93: S12–S26.
18. World Health Organization. Monitoring the building blocks of health systems: a handbook of indicators and their measurement strategies. Geneva: World Health Organization; 2010. Available from: http://www.who.int/healthinfo/systems/WHO_MBHSS_2010_full_web.pdf.
19. World Health Organization. Ear and hearing care situation analysis tool. Geneva: WHO; 2015.
20. World Health Organization. Model Disability Survey. [Cited 2017 Jan 25]. Available from: <http://www.who.int/disabilities/data/mds/en/>.
21. Stucki G, Bickenbach J. The International Spinal Cord Injury Survey and the Learning Health System for Spinal Cord Injury. *Am J Phys Med Rehabil* 2017; 96: S2–S4.