



Joint position paper on the provision of mobility devices in less resourced settings

JOINT POSITION PAPER ON THE PROVISION OF MOBILITY DEVICES IN LESS-RESOURCED SETTINGS

**A step towards implementation of the Convention on
the Rights of Persons with Disabilities (CRPD) related
to personal mobility**



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1. Introduction

Mobility devices enable persons with disabilities to achieve personal mobility, and access to these devices is a precondition for achieving equal opportunities, enjoying human rights and living in dignity (UN, 1993). The United Nations *Convention on the Rights of Persons with Disabilities* (CRPD) highlights the responsibility of States to take effective measures to ensure personal mobility with the greatest possible independence for persons with disabilities, and a corresponding responsibility to promote and ensure availability and access to mobility aids, devices and assistive technologies (UN, 2006). (See Box 1.)

Furthermore, the *United Nations Standard Rules on the Equalization of Opportunities for Persons with Disabilities* (UN, 1993) and World Health Assembly resolution WHA58.23, "Disability, including prevention, management and rehabilitation" (WHO, 2005a), also urge countries to facilitate access to appropriate assistive technology and to promote its development and other means that encourage the inclusion of people with disabilities in society.

Recent publications, such as *Community-based rehabilitation: CBR guidelines* (WHO, 2010a), *Guidelines on the provision of manual wheelchairs in less-resourced settings* (WHO, 2008a), *Prosthetics and orthotics project and programme guides* (Landmine Survivors Network, 2006a and 2006b), and *Guidelines for training personnel in developing countries for prosthetics and orthotics services* (WHO, 2005b) provide practical recommendations and support for countries in the area of assistive technology.

Despite the efforts of stakeholders at the international, national, regional and local levels, the mobility needs of people with disabilities are not being met. This joint position paper was developed in response to a meeting about personal mobility and mobility devices, held on 28–29 October 2009 at World Health Organization headquarters, Geneva, Switzerland. This paper aims to guide and support countries, especially those with limited resources, in the implementation of relevant articles of the CRPD associated with the provision of mobility devices.



Annette Wong/WCPT

2. What are mobility devices?

Mobility devices are one of the most common types of assistive technologies or devices. Assistive technology can be defined as “any piece of equipment, or product, whether it is acquired commercially, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of individuals with disabilities” (WHO, 2011). Mobility devices are designed to facilitate or enhance a user’s personal mobility – this relates to their ability to change and maintain body position and walk and move from one place to another (WHO, 2001). Common examples include crutches, walking frames, wheeled walkers, wheelchairs (manual and powered), tricycles, scooters, orthoses such as callipers, braces and splints, and prostheses such as artificial legs. Devices such as white canes are also considered mobility devices, as they assist people with visual impairments to move independently within their homes and communities.

3. What are the benefits of mobility devices?

Mobility devices are appropriate for people who experience mobility difficulties as a result of a broad range of health conditions and impairments, including amputation, arthritis, cerebral palsy, poliomyelitis, muscular dystrophy, spinal-cord injury, spina bifida, stroke and visual impairment. They are also relevant for older people who experience mobility difficulties. Studies have shown that assistive technologies, when appropriate to the user and the user’s environment, have a significant impact on the level of independence and participation which people with disabilities are able to achieve (WHO, 2011). They have been reported to reduce the need for formal support services (WHO, 2011) as well as reduce the time and physical burden for caregivers (Allen et al., 2006). The use of mobility devices, in particular, creates opportunities for education and work, and contributes to improved health and quality of life (May-Teerink, 1999; Eide & Oderud, 2009; Shore, 2008). Mobility devices may also have an impact on the prevention of falls, injuries, further impairments and premature death. Investment in provision of mobility devices can reduce health-care costs and economic vulnerability, and increase productivity and quality of life (SIAT, 2005).



Jesse Moss/Mile End Films Inc.

4. Who is involved in the provision of mobility devices?

Mobility devices can be provided by a broad range of stakeholders including governments (see also Box 1), international agencies, nongovernmental organizations (including charitable and faith-based organizations), and the private sector. In countries like Costa Rica, Cuba, Guyana, Indonesia, Mozambique, the Philippines and South Africa, provision of mobility devices is an integral part of health care, and they are provided by the Ministry of Health through the national health-care system (WHO, 2011). In some countries, other ministries take responsibility for the provision of mobility devices, for example the Ministry of Social Welfare in Eritrea, Ethiopia, India and Viet Nam. In other countries, such as Pakistan, the Syrian Arab Republic and Sri Lanka, the Ministry of Defence provides mobility devices primarily for army personnel and, in some cases, extends provision to civilians. Where government resources and capacity are limited, other stakeholders, including international organizations, such as the International Committee of the Red Cross (ICRC), may play a greater role in provision of mobility devices.

People with disabilities may access mobility devices through a number of different facilities, including hospitals, rehabilitation facilities, mobile/outreach facilities and community-based programmes, and also from private retailers and special education agencies. A variety of health personnel, especially rehabilitation personnel, are involved in the provision of mobility devices, including therapists (e.g. occupational therapists and physiotherapists), medical staff (e.g. doctors and nurses), orthotists and prosthetists, and community workers (e.g. community-based rehabilitation workers and community health workers).

CONVENTION ON THE RIGHTS OF PERSONS WITH DISABILITIES

States Parties to the Convention on the Rights of Persons with Disabilities (CRPD) are legally bound to fulfil the obligations outlined below regarding personal mobility and the provision of mobility devices. Even if a State has not signed the CRPD, it is helpful for the interpretation of other human rights conventions to which the State is party. As well as action from States Parties, international cooperation is also required in support of national efforts to realize these.

Article 4 – General obligations

- (g) To undertake or promote research and development of, and to promote the availability and use of new technologies, including information and communications technologies, mobility aids, devices and assistive technologies, suitable for persons with disabilities, giving priority to technologies at an affordable cost;
- (h) To provide accessible information to persons with disabilities about mobility aids, devices and assistive technologies, including new technologies, as well as other forms of assistance, support services and facilities;

Article 20 – Personal mobility

States Parties shall take effective measures to ensure personal mobility with the greatest possible independence for persons with disabilities, including by:

- (a) Facilitating the personal mobility of persons with disabilities in the manner and at the time of their choice, and at affordable cost;
- (b) Facilitating access by persons with disabilities to quality mobility aids, devices, assistive technologies and forms of live assistance and intermediaries, including by making them available at affordable cost;
- (c) Providing training in mobility skills to persons with disabilities and to specialist staff working with persons with disabilities;
- (d) Encouraging entities that produce mobility aids, devices and assistive technologies to take into account all aspects of mobility for persons with disabilities.

Article 26 – Habilitation and rehabilitation

3. States Parties shall promote the availability, knowledge and use of assistive devices and technologies, designed for persons with disabilities, as they relate to habilitation and rehabilitation.

Article 32 – International cooperation

1. States Parties recognize the importance of international cooperation and its promotion, in support of national efforts for the realization of the purpose and objectives of the present Convention, and will undertake appropriate and effective measures in this regard, between and among States and, as appropriate, in partnership with relevant international and regional organizations and civil society, in particular organizations of persons with disabilities. Such measures could include, inter alia:

- (a) Ensuring that international cooperation, including international development programmes, is inclusive of and accessible to persons with disabilities;
- (b) Facilitating and supporting capacity-building, including through the exchange and sharing of information, experiences, training programmes and best practices;
- (c) Facilitating cooperation in research and access to scientific and technical knowledge;
- (d) Providing, as appropriate, technical and economic assistance, including by facilitating access to and sharing of accessible and assistive technologies, and through the transfer of technologies.

2. The provisions of this article are without prejudice to the obligations of each State Party to fulfil its obligations under the present Convention.

Source: UN, 2006



Chapal Khasnabis/WHO

5. What are the global needs and unmet needs?

The recent *World report on disability* estimated that more than a billion people live with some form of disability, which corresponds to approximately 15% of the world's population (WHO, 2011). Analysis of World Health Survey data in 69 countries showed that 18.6% of adults over the age of 18 report most often having moderate, severe or extreme difficulty related to moving around (WHO, 2011). This is supported by a study carried out in Fiji, India, Indonesia, Mongolia and the Philippines, which indicated that about one in five people has at least some difficulty walking or climbing stairs, and one in 20 people has severe difficulty (Mont, 2007).

Global data on the need for rehabilitation services (including mobility devices) and estimates of unmet need are very limited (WHO, 2011). It has been estimated that people needing orthoses or prostheses and related services represent 0.5% of the population in developing countries (WHO, 2005b) and that the number of people with disabilities in developing countries who require a wheelchair is approximately 1% of the population (ISPO/USAID/WHO, 2006). The number of people with disabilities is projected to increase because populations are ageing – older people have a higher risk of disability – and because of the global increase in chronic conditions, especially common noncommunicable diseases (NCD) such as diabetes, stroke and cancer. Other factors such as road traffic crashes, natural disasters and conflicts contribute to increasing numbers of people with disabilities and suggest a corresponding increase in the need for mobility devices.

National studies on living conditions of people with disabilities conducted in Malawi, Mozambique, Namibia, Zambia and Zimbabwe revealed large gaps in the provision of assistive devices/services (Loeb & Eide, 2004; Eide & Kamaleri, 2009; Eide, van Rooy & Loeb, 2003; Eide & Loeb, 2006; Eide et al., 2003). The studies found that only 17–37% of people received the assistive devices they needed. Gender inequalities were also evident in the proportion of individuals with disabilities who had an assistive device in both Malawi (men 25.3% and women 14.1%) and Zambia (men 15.7% and women 11.9%) (Loeb & Eide, 2004; Eide & Loeb, 2006).



6. What are the barriers to accessing mobility devices?

Leadership and governance

The provision of mobility devices is generally a low area of priority for governments and, as a result, it is often not reflected in national legislation, policies or strategies. A global survey carried out in 2005 on the implementation of the United Nations *Standard Rules on the Equalization of Opportunities for Persons with Disabilities* showed that, of 114 countries that responded to the survey, 50% had not passed relevant legislation, and 48% did not have policies in place relating to the provision of assistive devices (South-North Centre for Dialogue and Development, 2006).

Financing and affordability

Limited financial resources in many countries have a significant impact on the availability and accessibility of assistive technology and related services. In the 2005 global survey mentioned above, 36% of countries had not allocated financial resources for developing and supplying assistive devices (South-North Centre for Dialogue and Development, 2006). Many countries rely on out-of-pocket payments as a means of financing, which may suggest why people with disabilities and their families purchase more than half of all assistive devices directly (Albrecht et al., 2003). Affordability has been highlighted as one of the main reasons why people with disabilities do not receive needed health care in low-income countries – with higher rates of unemployment and poverty than nondisabled people, many people with disabilities are unable to afford assistive technology and related services (WHO, 2011).

Service delivery

Services relating to provision of mobility devices include referral, assessment, prescription, funding, ordering, product preparation, fitting/adjusting, user training, follow-up, and

maintenance and repairs (WHO, 2008a). These services are often in short supply and located far from the places where most people with disabilities live. In the 2005 global study, 53% of countries had not initiated programmes relating to the provision of assistive devices (South-North Centre for Dialogue and Development, 2006). Where nongovernmental organizations are involved in service delivery, they rarely have the financial means or capacity to develop sustainable service delivery systems for the whole country. Their services are often focused on providing specific types of devices, and targeted at specific types of impairments, age groups and/or geographical areas. Where available, services are often centralized in major rehabilitation centres in large cities. Travelling to these centres can be costly and time-consuming for people with disabilities and their families, and public transport is often not accessible (Dejong et al., 2002; Penny et al., 2007). In almost all countries, services relating to the provision of mobility devices are often inadequate and of low quality. Inadequate service delivery can put people with disabilities at risk of secondary conditions, for example if prostheses are not fitted properly, the device may be abandoned, or if wheelchairs are provided without appropriate cushions, pressure sores can develop.

Human resources

A lack of properly trained personnel constitutes a major barrier to provision of appropriate mobility device services (Pearlman et al., 2008; Jensen et al., 2004a; Jensen et al., 2004b; Magnusson & Ramstrand, 2009). Many countries report inadequate, unstable or nonexistent supplies of rehabilitation personnel (WHO, 2011; Bo et al., 2008; Stanmore & Waterman, 2007; Al Mahdy, 2002), and unequal geographical distribution of these personnel. For example, a recent comprehensive survey of rehabilitation in Ghana identified no rehabilitation doctor or occupational therapist in the country, and only a few prosthetists, orthotists and physiotherapists, resulting in very limited access to therapy and assistive technologies (Tinney et al., 2007). Data relating to the supply of occupational therapists and physiotherapists in selected countries shows large discrepancies between developing and developed countries (WHO, 2008b; WFOT, 2010). Many developing countries do not have educational programmes for rehabilitation professionals. For example, according to the 2005 global survey mentioned above, 37 countries had not taken action to train rehabilitation personnel and 56 countries had not updated the medical knowledge of health-care providers on disability (South-North Centre for Dialogue and Development, 2006). Various manuals and guidelines and training programmes have been developed (WHO, 2008a; WHO, 2005b), but implementation is not universal and often under-resourced. In addition to the lack of trained personnel, existing personnel do not have access to continuing education programmes which allow them to maintain and update their skills and knowledge.

Production

In many developing countries, the production of mobility devices occurs on a small scale or, in some cases, is non-existent. Countries may have limited access to the materials and equipment needed to produce mobility devices. Market-related factors can also limit production, for example there may be a limited demand for mobility devices because people with disabilities in developing countries are often unaware of the existence and benefits of these devices and may have limited purchasing capacity. With a restricted market, there are few incentives for the public or private sector to engage in the production of mobility devices. Where local markets are too small, local production may not be cost-effective. Duty and import taxes associated with assistive devices can further discourage local businesses from importing them.



Chapal Khasnabis/WHO

Physical environment

A number of barriers within a person's environment can limit personal mobility and the use of mobility devices. Physical barriers can make it difficult or impossible to use mobility devices effectively (Wearmouth & Wielandt, 2009; Ameratunga et al., 2009). For example, an individual will not be able to use a wheelchair of good quality in an inaccessible house, school or workplace. Physical barriers are often exacerbated in environments affected by natural disaster and conflict, in camps for displaced persons and in urban slums.

Awareness, cultural and social barriers

Many people with disabilities and their families have limited awareness of the benefits of mobility devices and the services available to ensure access to them. For example, a study on the living conditions of people with disabilities in Lesotho demonstrated that there was a gap of 25.4% between the expressed need for assistive device services and awareness of these services (Kamaleri & Eide, 2011). Social and cultural barriers may also affect the use of mobility devices – for example, orthoses for lower-limb weakness often come ready-fitted with a shoe, which means they cannot be used in places of worship and homes in many parts of the world (Lysack et al., 1999; Mulholland et al., 2000). Many people in need of mobility devices face obstacles in accessing them because of their sex, age, socioeconomic status, impairment or place of residence (May-Teerink, 1999; Eide & Loeb, 2006; Francois et al., 1998; Matsen, 1999).



BOX 2 PRINCIPLES RELATED TO THE PROVISION OF MOBILITY DEVICES

In order for countries to meet their obligations related to assistive technology (mobility devices), outlined in the Convention on the Rights of Persons with Disabilities, the following principles need to be considered.

Acceptability People with disabilities are actively involved in all stages of mobility device provision, having choice and control over the decisions that affect them. Factors such as efficiency, reliability, simplicity, safety and aesthetics should be taken into account to ensure devices and related services are acceptable to users.

Accessibility Mobility devices and related services are accessible to everyone with an identified need. Accessibility encompasses nondiscrimination, physical accessibility and information accessibility. Provision of mobility devices should be equitable to avoid discrepancies between genders, age groups, impairment groups, socioeconomic groups and geographical regions.

Adaptability Mobility devices and related services are adapted and modified to ensure they are appropriate to the requirements of the individual. They consider all aspects of the individual's disability, i.e. impairments, activity limitations, participation restrictions, related health conditions, environmental factors (e.g. physical and social environment) and personal factors (e.g. gender, age, race, physical fitness, lifestyle and habits) (WHO, 2001).

Affordability Mobility devices and related services must be affordable for people with disabilities and their families, particularly in low-resource settings. Affordability refers to the extent to which people can pay for the device and/or services associated with it.

Availability All relevant resources (health-care facilities, programmes and services, human resources, materials and products) required for the provision of mobility devices are available in sufficient quantity for the needs of the population and are provided as close as possible to people's own communities.

Quality All relevant resources (health-care facilities, programmes and services, human resources, and materials and products) are of an appropriate quality. Product quality can be measured through local, national and international technical standards or guidelines in terms of strength, durability, performance, safety, comfort, etc. Specific qualities of services can be measured in terms of compliance with staff training requirements and service guidelines (WHO, 2008a). The overall quality of services can be measured in terms of outcomes, user satisfaction and quality of life. Resource constraints, and particularly the issue of affordability, should not necessarily compromise the principle of quality.



Jon Bjorgvinsson/CICR

7. What is required to increase access to mobility devices?

Removing barriers to mobility devices and related services should take into account the principles of acceptability, accessibility, adaptability, affordability, availability, and quality (see Box 2). The following recommendations for action are designed to assist countries to abide by these principles and help them to ensure that appropriate systems are in place for mobility device provision. While it is essential that countries ensure a high level of ownership of and commitment to action in this area, a wide range of stakeholders also have roles to play.

Assess need and unmet need

National data on needs for mobility devices – both met and unmet – are important for policies and programmes. Need and unmet need can be assessed through data on prevalence of disability, disability-specific surveys and population and administrative data. Questions on unmet need for assistive device services can be included as a subset of national studies or representative surveys, such as those carried out on living conditions among people with activity limitations in six Southern African countries (Lysack, 1999; Eide et al., 2003; Loeb & Eide, 2004; Eide & Loeb, 2006; Kamaleri & Eide, 2011; Eide & Oderud, 2009). The supply of mobility devices can be estimated from administrative data that include assistive device provision. Measures such as waiting times can be a proxy for the extent to which the demand for mobility devices is being met. Lack of awareness of the services or negative attitudes about disability that influence the person or the family seeking devices need to be considered (WHO, 2011). Indicators for the numbers of people demanding mobility device services and not receiving them, or those receiving inadequate or inappropriate devices, can provide useful information for planning (WHO, 2011).

Adopt relevant legislation, policies and strategies

Access to assistive technology (including mobility devices) should be incorporated into existing disability, health, rehabilitation and/or social-welfare legislation, policies and strategies, as has been done in a wide range of developing and developed countries. Specific provision should also be made for assistive technology where necessary. For example, in South Africa, a national guideline on the *Standardisation of provision of assistive devices in South Africa* for the public health sector now accompanies the National Rehabilitation Policy (South African Department of Health, 2011). The provision of mobility devices needs to be accompanied by measures to improve access to public buildings, roads and transportation. The construction of new buildings and roads and the selection of transport options for use by the public should be based on universal design principles and adhere to minimum national standards on accessibility. Modifications to existing infrastructure, such as improving the quality of pavements, adding kerb cuts and installing ramps, elevators, wider doors and various methods of signalling and guiding, can enable people with disabilities to utilize their mobility devices.

Provide adequate funding and improve affordability

Policies or strategies related to mobility devices require budgetary support from governments to ensure implementation. The budget for assistive devices should be part of the regular budget of relevant ministries, decentralized and based on local needs including ongoing needs for replacement, repair and maintenance. The essential assistive devices need to be identified, publicly funded and made available free of charge to people who cannot afford the devices. The *World report on disability* (WHO, 2011) outlines a range of financing options which can be considered. These include: providing affordable health insurance that covers assistive devices; providing general income support; removing or reducing out-of-pocket payments for assistive devices and their maintenance; and combining public and private financing. Where devices and/or components are provided by donation, they must adhere to international/national standards, be suitable for the local environment and come complete with related services and training. Additional financial and technical support through international cooperation is required for less-resourced countries to strengthen service provision, as stated in article 32 of the CRPD (UN, 2006).

Increase production and/or supply of mobility devices

A variety of different options can be considered to ensure increased production and/or supply of mobility devices in developing countries. It is important to note that the suitability of each option (for example small-scale or large-scale in-country manufacturing, importation, or a combination of methods) will be dependent on the context of each country, and

may vary for different types of mobility devices (Jefferds et al., 2010). User benefits and local employment situations should be taken into account when considering the suitability of such strategies (WHO, 2008a).

Manufacturing and assembling mobility devices locally, using local materials, can reduce the cost and ensure that devices are suitable for the context (WHO, 2011). Other production options include importing the components for mobility devices and assembling the final product locally (WHO, 2011). Countries such as Albania, Costa Rica, Lebanon and Malaysia are currently importing the components for prostheses and orthoses and then assembling the products according to individual requirements. Countries such as El Salvador, India, Indonesia, Islamic Republic of Iran, Kenya, South Africa and Viet Nam are examples of countries practising both approaches.

However the devices are procured, technical standards relevant to the needs and environments of each country should be established and applied to ensure that devices of appropriate quality are made available to services and users. Where practical, these should be based on, or derived from, existing international standards. For example, the International Organization for Standardization (ISO) series 7176 provides a reference set of test methods and requirements for wheelchairs.

Develop appropriate services

A range of different models for service delivery exist – countries need to develop a model which is suitable for their given context and capable of responding to the identified needs within the country. Integration and decentralization of service delivery are important considerations and can help improve the availability, accessibility and affordability of services (WHO, 2011). Providing community-delivered services as a part of the continuum of care, for example community-based rehabilitation (CBR), can respond to issues such as hard-to-reach populations (i.e. people living in rural and remote areas) and workforce shortages. The role of CBR personnel might be to work with people with disabilities and their families to determine their needs for mobility devices, initiate referrals to appropriate service providers, facilitate access to services, and ensure maintenance, repair and replacement when necessary (WHO, 2010a).

To ensure that people with disabilities are provided with mobility devices that are appropriate, acceptable and of high quality, they require access to the full range of services, e.g. assessment, fitting, training and follow-up. Ensuring access to these services will help to address issues such as abandonment of devices (Eide & Oderud, 2009) and the development of secondary

conditions such as pressure sores. Involvement of people with disabilities and their families in all aspects of service delivery is essential to ensure they have mobility devices which suit their requirements. People with disabilities themselves often play an important role in the delivery of services, e.g. as peer educators or trainers. The *Guidelines on the provision of manual wheelchairs in less-resourced settings* is a useful resource, as it provides recommendations for planning and implementing comprehensive wheelchair services, i.e. from referral and appointments to follow-up, repairs and maintenance (WHO, 2008a). The recommendations provided in this document are also applicable to other types of mobility devices.

Educate and train relevant personnel

To ensure people with disabilities are able to access appropriate mobility devices, countries require a variety of personnel trained in the different areas of assistive technology provision, i.e. prescription and assessment, design and development, production and service delivery, repairs and maintenance. Consideration should be given to training different levels of personnel to ensure services are widely available. For example training “mid-level” personnel has been identified as a strategy which can ensure service delivery in areas with shortages of health professionals (WHO, 2011). Training programmes should be tailored to the specific requirements of countries or regions, taking into account, for example, linguistic, socioeconomic and cultural characteristics. For example, in some contexts, it is essential to



train both men and women to ensure access to devices (World Bank, 2009). Training people with disabilities should also be encouraged to broaden the pool of qualified people and to benefit from their personal experience and knowledge of mobility device use (Shakespeare et al., 2009). Continuing education opportunities such as short refresher courses, specialized courses, modular courses and on-the-job supervision and training are also required for existing personnel to maintain, extend and update their knowledge and skills.

Establish mutual partnerships

A broad range of stakeholders need to be involved in all the above-mentioned actions – these include government ministries and departments of health, rehabilitation, social welfare/protection, education, transportation and employment, as well as nongovernmental organizations, the private sector, professional organizations, disabled people’s organizations and people with disabilities themselves. Development of strong partnerships among stakeholders is needed to support national efforts to increase access to mobility devices. In addition, good coordination and collaboration between stakeholders is essential to avoid duplication of services and to ensure better effectiveness and efficiency in the provision of mobility devices.



Chapal Khasnabis/WHO

8. Recommendations

Individual countries

It is recommended that individual countries take the following steps to ensure the provision of mobility devices to promote the inclusion and participation of people with disabilities.

- 1.** Ratify the Convention on the Rights of Persons with Disabilities. Review and revise existing legislation and policies for consistency with the CRPD and ensure the provision of mobility devices is included in the relevant legislation and policies, with necessary budgetary support.
- 2.** Adopt a comprehensive approach to strengthen in-country capacity for provision of mobility devices by involving in-country stakeholders, such as other relevant ministries or departments; nongovernmental organizations including disabled people's organizations; country offices of the international organizations; professional organizations; educators; and service providers. Allocate responsibility for the provision of mobility/assistive devices to one key ministry or department, which will be a focal point for provision of mobility devices.
- 3.** Involve people with disabilities and their family members while formulating and implementing policies, laws, and services related to provision of mobility devices. Disabled people's organizations or parents' groups can be a good resource for developing a national system for provision of mobility devices.
- 4.** Include the provision of mobility devices within the national plan of action on disability/rehabilitation with the following actions.
 - a. Increase public awareness and understanding of the need for and benefit of mobility devices;
 - b. Provide flexible and innovative financing strategies to ensure that mobility devices are affordable and accessible to all. For example, include the provision of mobility devices under health insurance and social protection schemes, and provide targeted funding for people who are unable to afford devices;

- c. Increase the production/procurement of common types of mobility devices and/or their components. Where manufacturing of mobility devices is not feasible within the country, explore alternatives, such as exemption from customs or import tax on mobility devices and/or their components to make them accessible and affordable;
 - d. Develop or strengthen rehabilitation services and programmes required for the provision of mobility devices by setting up national or regional resource and distribution centres for cost-effective sourcing and supply of a wide range of products. Ensure services are available as close as possible to people's own communities, including rural areas;
 - e. Develop or adopt relevant technical standards and guidelines to ensure that devices made available to users are of an appropriate and reliable quality; for example, the *Guidelines on the provision of manual wheelchairs in less-resourced settings*;
 - f. Ensure education and training opportunities are available (in-country or abroad) to develop a suitable workforce for the provision of mobility devices and strengthen the knowledge and skills of existing personnel.
- 5.** Develop or improve data collection/health information systems to capture data on the need for and use of mobility devices and, at the same time, to strengthen and support research activities on cost-effectiveness and impact of mobility device provision in enhancing the quality of life and well-being of people with disabilities and their families.

International stakeholders

It is recommended that international stakeholders, including signatories of this joint position paper, support these actions as follows.

- 1.** Mobilize and/or provide financial and technical assistance to help countries to build capacity and strengthen existing policies, systems, services and training programmes related to mobility devices.
- 2.** Support countries in developing and implementing standards/guidelines to ensure that devices of appropriate quality are developed and made available to users.
- 3.** Collect information and experiences from countries whose system for provision of mobility devices has proven successful in meeting the requirements of the Convention on the Rights of Persons with Disabilities.

4. Establish platforms for sharing of information, including research and good practice.
5. Work in partnership with others to develop indicators for and measure compliance with the Convention on the Rights of Persons with Disabilities in terms of availability, accessibility and affordability of mobility devices.
6. Strengthen collaborative work between the United Nations system (including Member States), nongovernmental organizations (including disabled people’s organizations), the private sector and academic institutions to ensure greater access to mobility devices.



Bernard Franck/ HI

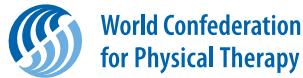
References

- Albrecht G, Seelman K, Bury M (2003). *Handbook of disability studies*. London, Sage.
- Allen S, Resnik L, Roy J (2006). Promoting independence for wheelchair users: the role of home accommodations. *Gerontologist*, 46:1:115–123.
- Al Mahdy H (2002). Rehabilitation and community services in Iran. *Clinician in Management*, 11:57–60.
- Ameratunga S et al. (2009). Rehabilitation of the injured child. *Bulletin of the World Health Organization*, 87:327.
- Bo W et al. (2008). The demand for rehabilitation therapists in Beijing health organizations over the next five years. *Disability and Rehabilitation*, 30:375–380.
- Dejong G et al. (2002). The organization and financing of health services for persons with disabilities. *The Milbank Quarterly*, 80:261–301.
- Eide AH, Kamaleri Y, eds. (2009). *Living conditions among people with disabilities in Mozambique: A national representative study*. Oslo, SINTEF Health Research. (<http://www.doh.gov.za/docs/factsheets/guidelines/rehabilitation.html>, accessed 19 October 2011).
- Eide AH, Loeb ME, eds. (2006). *Living conditions among people with activity limitations in Zambia. A national representative study*. Oslo, SINTEF Health Research.
- Eide AH, Oderud T (2009). Assistive technology in low-income countries. In: MacLachlan M, Swartz L, eds. *Disability & international development: towards inclusive global health*. New York, Springer.
- Eide AH, van Rooy G, Loeb ME (2003). *Living conditions among people with activity limitations in Namibia. A representative national survey*. Oslo, SINTEF Unimed.
- Eide AH et al. (2003). *Living conditions among people with activity limitations in Zimbabwe. A representative regional survey*. Oslo, SINTEF Unimed.
- Francois I et al. (1998). Causes of locomotor disability and need for orthopaedic devices in a heavily mined Taliban-controlled province of Afghanistan: issues and challenges for public health managers. *Tropical Medicine and International Health*, 3(5):391–396.
- ISPO/USAID/WHO (2006). *Report of consensus conference on wheelchairs for developing countries. Bengaluru, India, 6–11 November 2006* (http://www.who.int/disabilities/technology/Wheelchair%20Consensus%20Conference%20Report_Jan08.pdf accessed 12 October 2011), Bengaluru.
- Jefferds AN et al. (2010). Current state of mobility technology provision in less-resourced countries. *Physical Medicine and Rehabilitation Clinics of North America*, 21:221–242.
- Jensen JS et al. (2004a). Clinical field follow-up of high density polyethylene (HDPE)-Jaipur prosthetic technology for trans-femoral amputees. *Prosthetics and Orthotics International*, 28:152–166.
- Jensen JS et al. (2004b). Clinical field follow-up of high density polyethylene (HDPE)-Jaipur prosthetic technology for trans-tibial amputees. *Prosthetics and Orthotics International*, 28:230–244.
- Kamaleri Y, Eide AH, eds. (2011). *Living conditions among people with activity limitations in Lesotho: a national representative study*. Oslo, SINTEF.
- Landmine Survivors Network (2006a). *Prosthetics and orthotics programme guide: implementing P&O services in low-income settings*. Geneva (www.usispo.org/assets/pdf/Programme_Guide_Final_Version.pdf, accessed 19 October 2011).
- Landmine Survivors Network (2006b). *Prosthetics and orthotics project guide: supporting P&O services in low-income settings*. Geneva (www.usispo.org/assets/pdf/Project_Guide_Final_Version.pdf, accessed 19 October 2011).
- Loeb ME, Eide AH, eds. (2004). *Living conditions among people with activity limitations in Malawi. A national representative study*. Oslo, SINTEF Health Research.
- Lysack JT et al. (1999). Designing appropriate rehabilitation technology: a mobility device for women with ambulatory disabilities in India. *International Journal of Rehabilitation Research*, 22:1–9.
- Magnusson L, Ramstrand N (2009). Prosthetist/orthotist educational experience & professional development in Pakistan. *Disability and Rehabilitation: Assistive Technology*, 4:385–392.
- Matsen SL (1999). A closer look at amputees in Vietnam: a field survey of Vietnamese using prostheses. *Prosthetics and Orthotics International*, 23:93–101.
- May-Teerink T (1999). A survey of rehabilitative services and people coping with physical disabilities in Uganda, East Africa. *International Journal of Rehabilitation Research*, 22:311–316.

- Mont D (2007). Measuring disability prevalence. In: World Bank (2007). *SP Discussion Paper No. 0706*. Washington, D.C.
- Mulholland SJ et al. (2000). Evaluating a new mobility device: feedback from women with disabilities in India. *Disability and Rehabilitation*, 22:111–122.
- Pearlman J et al. (2008). Lower-limb prostheses and wheelchairs in low-income countries: An overview. *IEEE Engineering in Medicine and Biology Magazine*, 27:12–22.
- Penny N et al. (2007). Community-based rehabilitation and orthopaedic surgery for children with motor impairment in an African context. *Disability and Rehabilitation*, 29:839–843.
- Shakespeare T, Iezzoni LI, Groce NE (2009). Disability and the training of health professionals. *The Lancet*, 374:1815–1816.
- Shore SL (2008). Use of an economical wheelchair in India and Peru: Impact on health and function. *Medical Science Monitor*, 14:71–79.
- SIAT (2005). *Rollatorns betydelse för äldre med rörelsehinder [Importance of rollators for older people with reduced mobility]*. Stockholm, Swedish Institute of Assistive Technology.
- South African Department of Health (2011). *Standardisation of provision of assistive devices in South Africa: a guide for use in the public health sector* (<http://scholar.sun.ac.za/bitstream/handle/10019.1/2565/Law,%20F.pdf> <http://www.doh.gov.za/docs/factsheets/guidelines/rehabilitation.html>, accessed 25 August 2011).
- South-North Centre for Dialogue and Development (2006). *Global survey on government action on the implementation of the Standard Rules on the Equalization of Opportunities for Persons with Disabilities*. Amman, Office of the United Nations Special Rapporteur on Disabilities.
- Stanmore E, Waterman H (2007). Crossing professional and organizational boundaries: the implementation of generic rehabilitation assistants within three organizations in the northwest of England. *Disability and Rehabilitation*, 29:751–759.
- Tinney MJ et al. (2007). Medical rehabilitation in Ghana. *Disability and Rehabilitation*, 29:921–927.
- UN (1993). *Standard Rules on the Equalization of Opportunities for Persons with Disabilities*. New York, United Nations (<http://www.un.org/esa/socdev/enable/dissre00.htm>, accessed 12 October 2011).
- UN (2006). *Convention on the Rights of Persons with Disabilities*. Geneva, United Nations (<http://www.un.org/disabilities/convention/conventionfull.shtml> <http://www.un.org/disabilities/convention/conventionfull.shtml>, accessed 12 October 2011).
- Wearmouth H, Wielandt T (2009). ‘Reserve is no place for a wheelchair’: Challenges to consider during wheelchair provision intended for use in First Nations community. *Disability and Rehabilitation: Assistive Technology*, 4:321–328.
- WFOT (2010). *Occupational therapy human resources project 2010*. Melbourne, World Federation of Occupational Therapists.
- WHO (2001). *International classification of functioning, disability and health (ICF)*. Geneva, World Health Organization.
- WHO (2005a). Resolution WHA58/17. Disability, including prevention, management and rehabilitation. In: *Fifty-eighth World Health Assembly, Geneva, 16–25 May 2005. Volume 1. Resolutions and decisions*. Geneva, World Health Organization (WHA58/2005/REC/1).
- WHO (2005b). *Guidelines for training personnel in developing countries for prosthetics and orthotics services*. Geneva, World Health Organization.
- WHO (2008a). *Guidelines on the provision of manual wheelchairs in less-resourced settings*. Geneva, World Health Organization.
- WHO (2008b). *Global atlas of the health workforce*. Geneva, World Health Organization (<http://apps.who.int/globalatlas/default.asp>, accessed 12 October 2011).
- WHO (2010a). *Community-based rehabilitation guidelines*. Geneva, World Health Organization.
- WHO (2010b). *Assistive devices/technologies* (<http://www.who.int/disabilities/technology/en/> <http://www.who.int/disabilities/technology/en/>, accessed 12 October 2011). Geneva, World Health Organization.
- WHO (2011). *World report on disability*. Geneva, World Health Organization.
- World Bank (2009). *People with disabilities in India: from commitments to outcomes*. Washington, D.C. (<http://siteresources.worldbank.org/INDIAEXTN/Resources/295583-1171456325808/DISABILITYREPORTFINALNOV2007.pdf> accessed 12 October 2011).

This document has been developed in consultation with the following agencies, which share a commitment to facilitate greater access to mobility devices and fulfilment of the obligations and recommendations of the Convention on the Rights of Persons with Disabilities.

African Federation of Orthopaedic Technicians (FATO); Association for the Physically Disabled of Kenya (APDK); Cambodia Trust; CBM; Dalhousie University; Global Partnership for Disability and Development (GPDD); Handicap International (HI); International Committee of the Red Cross (ICRC); ICRC Special Fund for the Disabled (ICRC SFD); International Society for Prosthetics and Orthotics (ISPO); ISO, TC173, SC1: Working Group 1 Wheelchairs – Test methods and Working Group 11 Wheelchairs – Seating; Motivation Charitable Trust (Motivation); National Centre for Prosthetics and Orthotics at the University of Strathclyde; Rehabilitation International (RI); SINTEF; Swedish Institute of Assistive Technology (SIAT); Tanzania Training Centre for Orthopaedic Technologists (TATCOT); USAID – Leahy War Victims Fund; World Confederation for Physical Therapy (WCPT); World Federation of Occupational Therapists (WFOT).



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