





The role of community development organizations in providing holistic wheelchair services





# **PREFACE**

When community development organizations and technical partners work together to provide holistic wheelchair services, catalytic change can happen.

In wheelchair programming, collaboration is critical to success. Community development organizations must work with skilled wheelchair service providers to ensure that people with mobility limitations receive wheelchairs suited to their anatomy and local environment. Service providers must be trained and supported by technical experts to acquire initial capacity and maintain and further their expertise. Technical experts must work with community development organizations to reach out to remote communities and help them access community-based referral and follow-up services and disability-inclusive programming. These connections are crucial to creating better outcomes for wheelchair users.

Community development organizations are well suited to deliver results for people with disabilities because of their established community relationships and experience with vulnerable populations. A deeper understanding of how community development organizations should participate in wheelchair services will allow us as practitioners to move away from a historical dependency on the distribution approach in wheelchair programming. A well-defined role for community development organizations in this process will advance high-quality wheelchair services, allowing wheelchair users to take full advantage of their new wheelchairs and experience greater levels of social inclusion.

This report seeks to highlight how organizations might begin to make inroads with populations that have physical disabilities. We suggest a "twin-track" approach that is based on the World Health Organization's *Guidelines on the Provision of Manual Wheelchairs in Less Resourced Settings*, an eight-step process, and dedicated disability inclusion programming, the "plus." By following this 8 Steps+ approach, community development organizations can provide appropriate wheelchairs and empower their constituencies to exercise their rights and fundamental freedoms. With significant donor attention shifting toward disability inclusion, organizations taking this innovative approach can position themselves to become leaders in the field.

An innovative five-country pilot, the ACCESS project, aims to change the culture of community development organizations around the idea of wheelchair services. The project funded this research on best practices and lessons learned by World Vision in order to identify the unique contributions that community development organizations can make. We look forward to future initiatives that will provide community development organizations with additional perspectives.

Sincerely,

The Core Management Committee of the ACCESS Project



The WHO's eight steps of wheelchair provision + community development organizations =

THE 8 STEPS+



# **ACKNOWLEDGMENTS**

This document is a publication of the USAID-funded Accelerating Core Competencies for Effective Wheelchair Service and Support (ACCESS) project. ACCESS is a 3.5-year program operating in El Salvador, India, Kenya, Nicaragua, and Romania that seeks to bridge the gap between appropriate wheelchair services and community development organizations to ensure that people with mobility limitations can exercise their rights enshrined in the UN's Convention on the Rights of Persons with Disabilities (UNCRPD). Through a unique partnership consisting of technical experts, local service providers, and community-based World Vision staff, the program makes all efforts to ensure that people with mobility limitations have access to appropriate products through

qualified service providers and enjoy full participation in their communities.

The ACCESS project would like to thank the staff of 12 World Vision offices around the world who contributed to the development of this document. In addition, the project acknowledges the technical contributions of Motivation Charitable Trust, United Cerebral Palsy Wheels for Humanity (UCP Wheels), and Motivation Romania Foundation. The lead researcher on this document was Shelby Stapleton of World Vision Australia. Sue Eitel conducted a technical review and edits were done by Andy Bamber. Chandra DeNap Whetstine is the ACCESS project director.

This publication was produced by World Vision, subaward number APC-GM-0029, through Advancing Partners & Communities (APC), a five-year cooperative agreement funded by the United States Agency for International Development under Agreement No. AID-OAA-A-12-00047, beginning October 1, 2012.

# **CONTENTS**

Preface	2
Acknowledgments	3
Executive Summary	5
Report Overview	7
Research Note	7
Part I: Landscape	
Part II: World Vision and Wheelchair Services	
Part III: Getting Started—The Four Pillars	
Appendices	
Appendix I: Further Resources	36
Appendix 2: A Brief Explanation of the WHO's Eight Steps of Wheelchair Provision	37
Appendix 3: The 8 Steps+ and Community Development Organizations	38
Appendix 4: Secondary Injuries	39
References	40



# **EXECUTIVE SUMMARY**

Globally, more than I billion people have a disability, with 80 percent of people with disabilities living in developing countries. The World Health Organization (WHO) estimates that around 65 million people require a wheelchair for mobility. People with disabilities have poorer health, lower levels of education, fewer economic opportunities, and higher rates of poverty. Children with physical disabilities are often marginalized and excluded from educational opportunities and are three times more likely to die in childhood than their non-disabled peers. Community development organizations must include people with disabilities in their strategies if they are to address the needs of vulnerable populations and reach international goals for education, poverty reduction, health, equality, and economic growth.

This document results from research done around the globe on World Vision wheelchair programs. It seeks to give a comprehensive overview of the role of community development organizations in the specialized field of wheelchair services, while illustrating the value that community development organizations can add to the process. It is primarily written for the many organizations identifying people with mobility limitations and distributing wheelchairs unaware of the international standards laid out by the WHO. Whether your organization is currently distributing wheelchairs without the support of trained service providers or is looking to bolster its approach to disability inclusion and community-based rehabilitation (CBR), this report—with its many insights and recommendations—is for you.

Wheelchairs and mobility devices are medical equipment obtained through a prescription. There are significant health risks to distributing wheelchairs to people without the involvement of a trained professional or the health system.

Incorrectly providing a wheelchair can result in life-threatening injuries.<sup>4</sup> Recent research has shown a 30-year difference in life expectancy between wheelchair users in England and Bangladesh due to secondary injuries.<sup>5</sup> When wheelchair users are hindered by environmental barriers, social stigma, and a lack of access to appropriate medical care and follow-up, the risk of injury is compounded.

Community development organizations should not distribute wheelchairs without technical support. Strategic technical partnerships and training are essential to ensuring the health and safety of wheelchair users and the successful delivery of wheelchair services. Partnering with disability-focused organizations that work alongside the health system will ensure the provision of appropriate wheelchairs, as defined by the WHO: "A wheelchair that meets the user's needs and environmental conditions; provides proper fit and postural support and is safe and durable; is available in the country; and can be obtained and maintained and services sustained in the country at the most economical and affordable price."

Community development organizations that adhere to the WHO's eight steps of wheelchair provision, as outlined in *Guidelines on the Provision of Manual Wheelchairs in Less Resourced Settings*, and deploy disability inclusion programming can be a catalytic force for change. This research suggests that providing appropriate wheelchairs enhances mobility and can contribute to greater social inclusion within communities, especially when combined with disability inclusion programs that provide opportunities for education, employment, and social support. Termed 8 *Steps+*, this twintrack approach allows community development organizations to create better outcomes for people with disabilities.



The best outcomes for wheelchair users are facilitated by two critical factors: I) a health system that can support people with disabilities and provide well-fitted mobility devices; and 2) a positive, enabling environment free from environmental, attitudinal, and institutional barriers.

People with mobility limitations in developing countries seldom receive adequate health services and often face environmental, attitudinal, and institutional barriers that increase poverty and exclusion (e.g., a lack of wheelchair-accessible buildings that prevent those with mobility limitations from accessing educational or employment opportunities). These factors can be addressed through specific interventions focused on developing a well-equipped health system and leveraging opportunities for inclusive community environments for wheelchair users. This can be achieved by collaborating with technical partners to strengthen wheelchair service providers and disabled people's organizations (DPOs) to ensure the accurate identification and addressing of issues facing people with disabilities.

Community development organizations can begin to operationalize 8 Steps+ by focusing on four key pillars underlying the approach. Opportunities to engage in this work already exist through ongoing programming, and in

many cases community development organizations already have the necessary structures in place to take action.

- EDUCATION for wheelchair users, staff, and the community about disability and social inclusion through existing mechanisms operating in communities.
- 2) FACILITATION of inclusive and trusting environments for people with disabilities, relying on existing networks and strong community roots.
- 3) COLLABORATION with technical partners and disabilityfocused organizations on the implementation of wheelchair provision and existing community programs that can be expanded to provide social and economic inclusion activities.
- 4) ADVOCACY at the local and national levels for attitudinal and policy change regarding people with disabilities, leveraging existing advocacy networks where applicable.

Balancing the risks associated with wheelchair distribution against the catalytic impact of increased mobility and inclusion in communities, this report provides a clear way forward for community development organizations to provide holistic wheelchair services through the 8 Steps+ approach.



The 8 Steps+ approach has the potential to create sustainable change.

# REPORT OVERVIEW

This report is written for community development organizations like World Vision. The United Nations defines "community development" as a process in which community members come together to take collective action and generate solutions to common problems. For the purpose of this document, community development organizations are those that seek to promote the community development process. Community development organizations can be nongovernmental, faith-based, and/or international. In this context, it is assumed that community development organizations do not have wheelchair clinical or technical staff and do not have expertise to conduct appropriate wheelchair provision.

Part I of this report focuses on the global disability landscape, with an emphasis on the thinking that shapes the 8 Steps+ approach—namely, the United Nations Convention on the Rights of People with Disabilities (UNCRPD) and the WHO's 2008 Guidelines on the Provision of Manual Wheelchairs in Less Resourced Settings. Part II turns to World Vision's evolving thinking on wheelchair services, providing a conceptual model of the 8 Steps+ approach. Part III provides a comprehensive overview of current activities and case studies from World Vision and ACCESS project partners, a drilldown on the four pillars underlying the 8 Steps+ approach, and actions that community development organizations can take to begin to operationalize the approach in context. The appendices provide additional resources for further exploration.



# **RESEARCH NOTE**

Research included more than 60 interviews in 13 countries. Input came from wheelchair users, field staff, national staff, technical teams, partner organizations, service providers, and senior project teams working in wheelchair provision services. Technical input was gathered through JSI-USAID ACCESS technical partners: Motivation Romania Foundation, Motivation Charitable Trust, and UCP Wheels For Humanity. Research was conducted across World Vision offices in the following countries:

- Australia
- El Salvador
- India
- Kenya
- Malawi
- Nicaragua
- Romania
- Rwanda
- Somalia
- Uganda
- United Kingdom
- United States
- Zambia



# I.I Global Disability Context

Ratified in 2006, the UNCRPD is the first comprehensive human rights treaty of the 21st century. Its purpose is to reinforce the human rights of all people with disabilities. The UNCRPD marks a significant paradigm shift in approaches to disability—from viewing people with disabilities as *objects* of charity to treating them as *subjects* with rights who are capable of freely making decisions about their lives.<sup>8</sup>

A number of articles within the UNCRPD address the rights of people directly. Article 20 explicitly addresses the right to access mobility and assistive devices. Article 19 enshrines the right to live independently and be included in the community. Articles 24, 25, 27, and 29 address the right to education, health, employment, and participation in political and public life. Together, these articles put forth a holistic vision for programs that address disability through rehabilitation services and the provision of assistive devices, as well as social and economic interventions.

In support of the UNCRPD, people with disabilities are specifically included in the UN Sustainable Development Goals and are referenced 11 times throughout the 2030 Agenda for Sustainable Development. Five of the 17 Sustainable Development Goals (SDGs) address the needs of people with disabilities in areas such as education, economic growth, employment, governance, and infrastructure. If implemented

successfully by 2030, the development community may be able to achieve a more open, inclusive, and equitable world for people with disabilities.

The UNCRPD and SDGs take disability inclusion away from being the sole responsibility of disabled people's organizations (DPOs) and bring it into the purview of community development organizations whose primary constituencies include people with disabilities. The UNCRPD states that "contributions made by persons with disabilities ... will result in their enhanced sense of belonging and in significant advances in the human, social and economic development of society and the eradication of poverty." Community development organizations cannot be successful without the participation of people with disabilities, which can only be ensured through intentionally inclusive programming.

The growth of community-based rehabilitation (CBR) to over 90 countries over the past 15 years has reinforced the role of community development organizations in creating inclusive environments. In 2010, the WHO published CBR guidelines that comprehensively join development practice with the human rights aspects of disability. These guidelines promote community-based and inclusive development that aims to encourage the mainstreaming of disability into development programs.

# 1.2 The World Health Organization and Wheelchair Provision

In 2006 the WHO held a conference to address the growing evidence that wheelchairs distributed without user assessment, prescription, fitting, and training can cause harm to individuals. The conference charted a path toward more appropriate wheelchair services. In 2008, with input from more than 25 wheelchair and rehabilitation experts, the WHO released the *Guidelines on the Provision of Manual Wheelchairs in Less Resourced Settings*, which sought to combat the risks associated with wheelchair distribution and to address the challenges of the health sector in providing appropriate care for people with disabilities. The guidelines address manual wheelchair design, production, supply, and service delivery for long-term wheelchair users.

The WHO's guidelines include eight steps to appropriate wheelchair provision:

- I. Referral and appointment
- 2. Assessment
- 3. Prescription (selection)
- 4. Funding and ordering
- 5. Product (wheelchair) preparation
- 6. Fitting
- 7. User training
- 8. Maintenance, repairs, and follow-up

Given the complexity of this process, the WHO released three complementary Wheelchair Service Training Packages (WSTPs) to provide comprehensive training for health facilities and professionals working to incorporate these guidelines. The three

training courses recommend health facilities receive capacity building and technical support to provide quality wheelchair services, as follows:

- I. WSTP Basic covers minimum skills and knowledge required of personnel in wheelchair service delivery.<sup>10</sup>
- 2. **WSTP Intermediate** focuses on children and users with poor postural control who are unable to sit upright independently.<sup>11</sup>
- 3. WSTP for Managers and Stakeholders informs wheelchair service managers and stakeholders about the importance of appropriate wheelchair provision.<sup>12</sup>

By following the WHO's guidelines and undergoing WSTP training, service providers can offer wheelchairs that are suited to each user's needs and context.

Technical experts work with service providers to build their capacity to adhere to the WHO's guidelines, but they have faced significant challenges. Following the eight steps entails significant organizational and procedural changes to move from distribution models to delivery of full wheelchair services. In many countries this also requires strengthening the health system, advocating for change to disability laws, policies, and budgets, and sensitizing communities about appropriate wheelchair services. While organizations may have the technical expertise to assist service providers in making the necessary changes, they may not have the grassroots relationships to effect change within the systems and structures that support wheelchair provision locally. This has complicated the ability of service providers to build capacity. These challenges are further compounded when those most in need of wheelchairs are accustomed to a distribution model of aid delivery and local and national governments are unaware of the WHO's guidelines or are unable to implement them effectively.

A wheelchair is like a pair of glasses: It must be prescribed and fitted by a trained professional.

### 1.3 Current Practice: Wheelchair Distribution

The cost of high-quality wheelchairs is prohibitive for many wheelchair users and service providers, leaving them vulnerable to working with low-quality wheelchairs and prescribing the wrong wheelchair simply because it is the only one available. This can result in frequent repairs and replacements for wheelchair users.

Whether due to a lack of understanding, resources, or capacity, many organizations distribute wheelchairs without adhering to the WHO's guidelines. Many clients receive a basic model of orthopedic wheelchair at wheelchair distribution events. These events typically do not offer recipients appropriate fitting or training, and follow-up with recipients is rare.

The mass distribution of wheelchairs has been shown to disconnect wheelchair users from essential health structures and to disempower individuals. When wheelchairs are distributed without health sector involvement, education, or inclusion activities and ongoing support, wheelchair users are put at risk. Poorly fitted wheelchairs can cause or exacerbate a number of negative health and social outcomes and can cause life-threatening pressure sores and deformities. If a wheelchair is improperly fitted, then mobility can be further hindered and could have the unintended effect of exacerbating or engendering isolation.

Receiving a wheelchair has the potential to be a life-changing experience, leading to freedom of movement and participation in the community for people with mobility limitations.<sup>13</sup> However, wheelchairs must be distributed after a thorough process that ensures proper anatomical fit and suitability for the user's environment; that is, the wheelchair must be appropriate for the user. The provisioning of appropriate wheelchairs is the goal of the WHO's eight-step process outlined above.

Although pervasive in the developing world, wheelchair distribution is not as effective as wheelchair provision. Those who receive donated wheelchairs often abandon the wheelchairs, are dissatisfied, and are less likely to achieve

Wheelchair **provision** is the process of equipping clients with wheelchairs in accordance with the eight steps found in the WHO's *Guidelines on the Provision of Manual Wheelchairs in Less Resourced Settings*.

Wheelchair **distribution** is the act of giving out wheelchairs without adhering to the WHO's guidelines.

a long-term solution. Research in India showed that 57 percent of hand-rim-propelled wheelchairs were abandoned, while in Nepal, 66 percent of distributed wheelchairs that had been donated needed replacement after two years. In the sphere of wheelchair services, *something* is not necessarily better than *nothing*, especially if it means receiving a wheelchair through an organization that uses a distribution approach. However, research suggests that wheelchairs can improve health and social inclusion outcomes for individuals when provided through the health system in accordance with WHO standards.

Two significant and interrelated consequences can result or be exacerbated by distributing wheelchairs without adhering to the WHO's guidelines:

- I. Life-threatening secondary injuries
- 2. Social isolation

The complexity and interconnectedness of these two consequences pose significant risks to people with disabilities, pointing to the necessity for a holistic approach to wheelchair services.

# 1.4 Secondary Injuries

In developing countries, people with disabilities are among the most vulnerable populations.<sup>14</sup> A lack of education and access to quality health services, coupled with high poverty rates, leaves many people with disabilities willing to accept any assistive device offered.<sup>15</sup>

Wheelchair users each have unique physical, environmental, and functional needs; for this reason, one type of wheelchair will not suit everyone. The wrong wheelchair can cause life-threatening injuries. If a wheelchair is uncomfortable, it may be discarded or given away to someone else that it was not adjusted to fit. If a wheelchair is not suited to a user's environment then it could break easily, either necessitating expensive repairs for the user or rendering the wheelchair unusable. <sup>16</sup>

Although many of these injuries are preventable, they are difficult to treat, and, in many cases, can threaten the life of a wheelchair user. The four most common secondary injuries resulting from improperly fitted wheelchairs are:

I. Pressure sores

3. Shoulder injuries

2. Spinal deformities

4. Contracture<sup>17</sup>

Please see Appendix 4 for further details.

In well-resourced countries, the average life expectancy following a spinal cord injury is 38 years. <sup>18</sup> In contrast, research in Bangladesh found the median life expectancy following spinal cord injury to be just 5.3 years, with 56 percent of people dying within five years of their injury. Approximately 80 percent of those included in the study died at home, and of those that died at home, one third had pressure sores at the time of death. <sup>19</sup>

Among the four most common injuries, pressure sores rank as one of the most persistent, progressive, and difficult to treat, and significantly impact life expectancy.<sup>20</sup> According to the

British Medical Journal, even in developed countries the prevalence rates of pressure sores in patients with spinal injuries are 20-30 percent 1-5 years after injury. One survey reported that a quarter of patients with spinal injuries in the United Kingdom had pressure damage.<sup>21</sup>

However, with an appropriate wheelchair, pressure sores can be easily avoided. In a 1999 cost survey conducted at the Ragama Rehabilitation Hospital in Sri Lanka, the estimated cost of care for a pressure sore patient was \$2,483 per year, a cost that could be reduced through a pressure-relieving cushion available locally for \$15.<sup>22</sup> If pressure sores develop, regular follow-up services can identify and treat them before they become life-threatening. Additionally, adjustments can be made to the wheelchair, and wheelchair users and their caregivers can be taught techniques for pressure relief, which can save lives.

The risks associated with the mass distribution of wheelchairs without proper fitting and follow-up services are compounded by the lack of access many people with disabilities face when seeking healthcare, education, and social services. Poverty, disability, and a lack of access to information are interrelated, and those with more complex disabilities often lack the financial resources to afford more advanced wheelchairs, or the knowledge to understand the health consequences of illfitting wheelchairs. 23 In this context, secondary injuries often go undiagnosed due to a lack of follow-up; this is compounded by the environmental, attitudinal, and institutional barriers that prevent wheelchair users from fully participating in their communities. Therefore, those that are in the greatest need of wheelchair services are often at the highest risk of the pitfalls of a distribution approach. By distributing wheelchairs without trained service providers, community development organizations may be harming the very community members they seek to assist.

When a wheelchair is provided without fitting by a trained professional, the user can suffer serious secondary injuries.

### 1.5 Social Isolation

# It's not **only** about the wheelchair.

While it is important that service providers adhere to the WHO's wheelchair provision standards, the end goal should be to improve the quality of life for wheelchair users, allowing them to contribute to their community and live a full life in an inclusive community. Institutional barriers, stigma, shame, and a lack of wheelchair-accessible public spaces are significant obstacles for people with disabilities. Combined, these factors can contribute to social isolation.

In developing countries, people with disabilities and their families are more likely to be economically and socially disadvantaged. The World Report on Disability states that disability can lead to weakened social and economic outcomes given the disproportionately negative impact on education, employment income, and increased expenditure. The UNCRPD stipulates the importance of improving access to physical environments (including buildings), transportation (including roads), information and communication technology, and public facilities and services. However, even once barriers to these resources have been removed, negative attitudes, laws, and social exclusion are still significant barriers for people with disabilities. To overcome the negative attitudes and stigma surrounding disability, community education and raising awareness are necessary.

Even with appropriate wheelchair provision, wheelchair users can remain isolated. Without access to employment and savings opportunities, wheelchair users may not be able to pay for the repair and maintenance of their wheelchairs. In addition, the social stigma faced by people with disabilities can leave them feeling disempowered and unwanted by their communities, without the voice or knowledge to advocate for their rights. Government institutions often do not meet the needs of people with disabilities, and laws and policies frequently do not take into account the obstacles that they face in the community. These factors can leave wheelchair users, even those who have access to high-quality wheelchair services, unable to fully participate in community life.

The WHO's eight steps of wheelchair provision cannot be achieved in isolation. Community development organizations have the relationships and trust to challenge negative attitudes, engage local institutions, and help build communities that are inclusive of people with disabilities. These assets are as important as technical expertise in ensuring that wheelchair users have appropriate wheelchairs and are able to take full advantage of the opportunities that their wheelchairs provide.



Credit: Motivation Charitable Trust

New wheelchairs are great, but they offer little relief if wheelchair users cannot or do not want to use them in their communities.





Providing the **right wheelchair**, in the **right way**, at the **right time** has the capacity to change a person's life forever. This is just the start ... to really put the wheels in motion, people with disabilities also need training and support to be healthy, confident, and included in society. And they're not the only ones to benefit: families, communities, even economies feel the positive change.<sup>†</sup>

†Motivation Charitable Trust. (2015). Motivation, Freedom through mobility: http://www.motivation.org.uk/.



# 2.1 World Vision's New Thinking: Holistic Wheelchair Services

Historically, World Vision has distributed wheelchairs without ensuring adherence to the WHO's eight steps, but this is changing. We are altering our approach as we learn from past projects, acknowledging the risks associated with delivering wheelchairs without adhering to global standards, and gaining an appreciation for the positive potential of this work. World Vision is moving toward a holistic model, fostering partnerships with wheelchair experts, DPOs, and health structures that are needed to promote the inclusion of people with disabilities.

The strength of community development organizations such as World Vision is fostering trust and openness within communities. This has led to the development of strong social service provider networks that can be leveraged to improve wheelchair services. World Vision recognizes that it will be necessary to adapt and change our approach to mitigate the negative outcomes of wheelchair distribution and deliver better health outcomes for people with disabilities.

For community development organizations to be effective in wheelchair provision, they must recognize the difference between being a disability organization and being a disability-inclusive organization. While most community development organizations are not disability-focused and do not have the clinical capacity to provide appropriate wheelchair services themselves, wheelchair programming presents an opportunity for community development organizations to become more disability-inclusive. With a clear mandate from the UNCRPD, the UN Sustainable Development Goals, and guidelines from the WHO, and an increased interest in disability inclusion among donors, the way forward is clear: there is an urgent need to align wheelchair programming with international best practices, and community development organizations have a role to play.



# 2.2 Research Findings

This research found that the role of community development organizations is to educate communities, facilitate inclusive environments, collaborate with technical partners, and advocate for attitudinal change and improved policies for people with disabilities.

At present, there are multiple approaches to providing wheelchair services, which has led to confusion and varied interpretations of the role that community development organizations should play. This research found that four key pillars are critical to providing holistic wheelchair services. When each of these four pillars is present, wheelchair users may experience better outcomes. They not only receive appropriate wheelchairs but also are connected to their community's health structures, can access support services, are included in their communities more frequently, and have access to more opportunities.

**EDUCATION** There is a lack of understanding about the risks associated with wheelchair distribution, and an absence of education around disability inclusion. This research found that, in some instances, wheelchair services are not linked to other programs; however, where this link exists, increased disability inclusion activities are also present. This represents an opportunity for community development organizations to use

existing structures to provide education and training to staff and members of the community, and influence attitudinal change.

COLLABORATION The findings show that partnerships are challenging and not always culturally ingrained within organizations, although significant synergies were acknowledged by participants. Community development organizations need technical partners to help ensure an appropriate standard of care and to work with health facilities to provide training, mentorship, and organizational capacity building in wheelchair provision. Technical partners need the support of community development organizations to reach the most isolated people in rural communities. Collaboration is key.

FACILITATION The creation of disability-inclusive environments for wheelchair users is an essential "next step" toward holistic, user-centered wheelchair services and should be the central role of community development organizations. This research found that receiving an appropriate wheelchair has been a catalyst for wheelchair users feeling empowered and included in community activities; however, this process has often occurred on an ad-hoc basis. Findings across several countries suggest that when disability inclusion is intentionally mainstreamed into community activities, distinct from and alongside wheelchair fitting, it can create opportunities for communities and people with disabilities.

ADVOCACY Leveraging local advocacy networks and collaborating with partners to advocate for national change further supports the sustainability of holistic wheelchair services. Community development organizations can use their strengths and relationships, combined with technical expertise from partners, to contribute informed input to national conversations on people with disabilities.

Appropriate wheelchairs + inclusive communities = holistic wheelchair services



# 2.3 Recommendation: The 8 Steps+ Approach

Providing holistic wheelchair services requires a shift from the distribution model of wheelchair services toward a user-centered, rights-based approach, based on appropriate wheelchair fitting (Track I: Wheelchair Provision) and the provision of disability inclusion support programming (Track 2: Disability Inclusion). Together, this approach is known as 8 Steps+ (see Figure I).

In Track I: Wheelchair Provision, community development organizations support qualified service providers to deliver appropriate wheelchairs, in accordance with the WHO's eight steps of wheelchair provision. To facilitate this process, comprehensive education and training of staff and communities is needed. Specifically, community development organizations should educate the community about the dangers of poorly fitted wheelchairs; facilitate linkages between service providers, communities, and stakeholders; and develop a network of community members to support the empowerment of wheelchair users, manage expectations, and conduct referral and follow-up. These steps will not only help people with disabilities and community stakeholders understand the importance of appropriate wheelchairs but also attract government support to the initiative.

Wheelchairs are a small part of the overall picture—wheelchair users need to live in environments that are physically and socially accessible. More importantly, they need to feel equal. To be successful, communities and people with disabilities need to work together and see the mutual benefit to their partnership. Community development organizations can dramatically improve the nature of wheelchair services by challenging perceptions of disability, fostering greater understanding and empathy, and building inclusive communities in the context of broader health, disability, and community-based programming.

In Track 2: Disability Inclusion, community development organizations must facilitate a disability-inclusive environment for wheelchair users. This mainstreaming of disability inclusion can be achieved through community-level awareness raising and advocacy, community education on disability rights and inclusion, and support for the work of DPOs. In challenging negative attitudes, creating accessible opportunities, and empowering wheelchair users, communities excel, thrive, and celebrate their diversity. When combined with national-level advocacy, these actions have the potential for long-term impact.

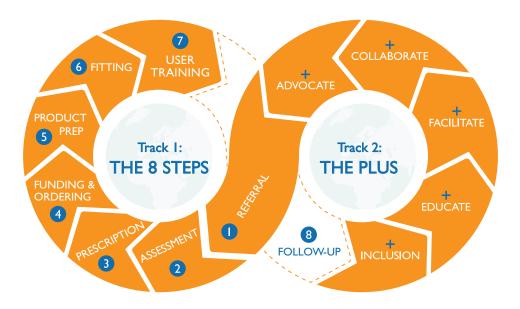


Figure 1: The 8 Steps+. The left side shows the WHO's eight steps of wheelchair provision (Track 1: Wheelchair Provision); the right side shows the value added by community development organizations—disability inclusion programming, a.k.a. the "plus" (Track 2: Disability Inclusion).

# 2.4 Advantages of the 8 Steps+ Approach

Changing to a holistic approach to wheelchair services allows World Vision to follow the framework set out in the UNCRPD. This marks a significant shift to a rights-based approach to working with people with disabilities, an approach that views people with disabilities as agents of change who have a voice in decision-making and recognizes that they should be active members of society. The 8 Steps+ approach to wheelchair provision has a number of important advantages in this regard.

### I. OFFERS A USER-CENTERED APPROACH

Putting the wheelchair user at the core of the approach to wheelchair provision gives them the opportunity to participate and make decisions about their own care. Empowering wheelchair users throughout the process gives the project a much higher chance of success and creates a greater likelihood that the wheelchair will remain in use long term. Additionally, it allows World Vision to meet the needs of people with disabilities in a way that is both inclusive and sustainable.

#### 2. CREATES INCLUSIVE COMMUNITIES

The 8 Steps+ approach goes beyond just providing a quality wheelchair. By leveraging the strengths of community development organizations, this approach builds communities that are inclusive of people with disabilities. Understanding that having an appropriate assistive device is necessary, but not sufficient, for inclusion, community development organizations can use this model to ensure that their own programming is disability-inclusive and can raise awareness of disability within communities and local governments.

# 3. ENSURES PEOPLE WITH DISABILITIES ARE CONNECTED TO THE HEALTH SYSTEM

Ensuring that trained professionals prescribe and fit wheelchairs at a local clinic will mean that wheelchair provision aligns with the local health system. People with disabilities are more likely to have other health problems that will need attention throughout their life. It is therefore critical that children, adults, and families of people with disabilities are connected to the local and national health

A holistic approach to wheelchair services has the potential to be a catalytic force for change.

systems and that these facilities are aware of them in order to offer assistance and support.

# 4. MULTIPLIES THE BENEFITS OF HIGH-QUALITY WHEELCHAIR SERVICES

Built on partnerships between community-based organizations and trained service providers, the 8 Steps+ approach can ensure not only quality wheelchair provision but also long-term follow-up and community inclusion. Through community education and engagement, challenges to appropriate wheelchair provision, such as difficulty tracking clients for follow-up and lack of understanding among people with disabilities and the community, can be addressed. Each organization in these partnerships leverages their strengths to multiply the benefits to wheelchair users and their families.

### 5. CATALYZES DISABILITY INCLUSION

Wheelchair provision has proven to be a catalyst for change within communities. Wheelchairs promote acceptance, challenge negative attitudes, and have positive effects when coupled with the inclusion of people with disabilities into community activities. Increased mobility improves and expands disability inclusion results.

#### 6. IS SUPPORTED BY GLOBAL RECOGNITION

Support for a user-centered, twin-track approach is recognized globally. The UN Convention on the Rights of People with Disabilities discusses appropriate wheelchair provision, and the new UN Sustainable Development Goals frequently mention disability inclusion. In addition, many governments and funding bodies, such as UNICEF, DFID, and DFAT, are actively seeking partnerships in disability.



Community development organizations are well positioned to deliver holistic wheelchair services based on the 8 Steps+. This research identifies four key pillars for community development organizations looking to get started. The pillars, their importance, and key actions for implementation are

shown in Figure 2, with a fuller discussion of each in the section that follows, including case studies, sidebars, and illustrative examples. Please also reference Appendix 3: The 8 Steps+ and Community Development Organizations for more information.

### **EDUCATION**

#### WHY?

Build understanding of disability inclusion and appropriate wheelchair provision

#### HOW?

- I. Dedicate human resources
- 2. Provide staff with education and training
- 3. Empower wheelchair users
- 4. Sensitize the community

### **FACILITATION**

#### WHY

Challenge community perceptions through

#### HOW?

- Create policy and guidelines
- Leverage strengths to facilitate the eight steps (Track I)
- 3. Prioritize disability inclusion to facilitate the "plus" (Track 2)

### **COLLABORATION**

#### WHY?

Enhance strength through technical and local partnerships

#### HOW?

- I. Collaborate with technical partners
- 2. Collaborate with DPOs
- 3. Collaborate with international partners

### **ADVOCACY**

#### WHY?

Leverage local and national advocacy for sustainable solutions

#### HOW?

- I. Focus on the rights of people with disabilities
- 2. Advocate for national policy changes and regulation
- 3. Create sustainable global solutions

FIGURE 2: The four pillars that support the 8 Steps+ approach. The "why" section communicates the importance of the pillar to the overall process; the "how" section presents key actions to begin implementation.

### 3.1 Education

"I wanted to tell you about our education. A lot of people often think about construction for people in wheelchairs ... ramps and taps and things, but we have also started to include some disabled people as community volunteers, too.

At first the community didn't think this was possible, but now they realize people with disabilities can contribute, too."

—World Vision program manager, Malawi

Education is critical to ensuring that partners fully understand the components of holistic wheelchair services. Organization staff, community members, and representatives of business, government, DPOs, and service providers must be educated about the WHO's eight steps, disability inclusion, and the 8 Steps+ approach. The three main partners community development organizations, technical specialists, and service providers—should work together to educate stakeholders about the importance of a twin-track approach to wheelchair provision based on the WHO's eight steps (Track I) and disability inclusion (Track 2). Education requires significant collaboration with technical partners and input from service providers and wheelchair users at the start of projects. If community development organizations work to educate staff and communities, technical experts can facilitate capacity building for wheelchair service providers concurrently.

A significant gap exists in knowledge about disability and social inclusion, but there is a willingness and desire to learn. Disability as a crosscutting theme requires technical support and education within organizations across the development sector. Addressing this gap can be achieved through prioritizing disability within policy and strategy, as well as dedicating, equipping, and supporting staff.

### **KEY ACTIONS**

- I. Dedicate human resources
- 2. Provide staff with education and training
- 3. Empower wheelchair users
- 4. Sensitize the community

### I. DEDICATE HUMAN RESOURCES

Education about disability and support for wheelchair provision and disability inclusion interventions need to be available at all levels of the organization. From proposal design to implementation and monitoring and evaluation, staff should be encouraged to incorporate disability inclusion. For successful disability mainstreaming, organizations need leadership support and technical expertise.

Within each country office, there should be a staff member with the knowledge of how to facilitate inclusive environments. This staff member should support their office on mainstreaming disability in the design and implementation of projects through consultation with DPOs and technical experts.

### PROVIDE STAFF WITH EDUCATION AND TRAINING

While the WHO's Wheelchair Service Training Package (WSTP) provides a clear curriculum for wheelchair service providers, limited guidance exists for community development organizations about holistic wheelchair services. World Vision staff in India and Nicaragua have participated in the WSTP training for managers, which has given them an understanding of their role in facilitating the eight steps. To bridge the gap between WSTP training and broad disability awareness, staff training and education across all parts of the organization is critical.

Staff within community development organizations should have a thorough understanding of the WHO's *Guidelines on the Provision of Manual Wheelchairs in Less Resourced Settings* and disability inclusion principles.

The staff members of community development organizations dedicated to inclusion should work closely with technical partners and DPOs on staff training. This allows technical experts to articulate the risks inherent in a wheelchair distribution approach and sensitize staff to the importance of working through trained service providers. Disability inclusion training can be strengthened by working with members of the disability community through DPOs. This incorporates the perspectives of people with disabilities and bridges gaps that may not have been recognized by community development organizations in the past. Cascading this training throughout organizational structures is essential to building an understanding of disability inclusion within communities.

Several tools exist for further education on disability and disability inclusion within community development organizations. The two-part training curriculum listed here was developed by World Vision.

60% of field and project staff interviewed stated that education about disability at the start of projects, both nationally and within communities, would enable stronger linkages with service providers and contribute to greater disability inclusion in the future.

- I. *Travelling Together:* A disability awareness training manual that focuses on approaches to disability, confronting barriers, and moving past excuses to effect change within organizations.
  - http://www.wvi.org/disability-inclusion/publication/travelling-together
- 2. On the Road to Disability Inclusion: A supplement to the Travelling Together curriculum that provides practical checklists for disability inclusion throughout a program life cycle.

https://www.worldvision.org/our-work/disability-inclusion

### 3. EMPOWER WHEELCHAIR USERS

The education of wheelchair users is an essential step toward providing holistic wheelchair services. The shift from a distribution model to a provision model can be confusing for some. Wheelchair users may not understand why the fitting process requires multiple appointments or why they were prescribed a particular model of wheelchair. Educating wheelchair users about the benefits of holistic services can

"We didn't know what we didn't know." —World Vision staff member, Somalia

build client support for the process and encourage individuals to advocate for their right to an appropriate wheelchair. This education should happen within the community rather than at the service center to provide wheelchair users with the knowledge necessary to hold service providers accountable for adhering to the WHO's guidelines.

In Nicaragua, World Vision established community advocacy groups to hold local governments accountable for disability inclusion in their communities. As part of the training on the rights and entitlements of people with disabilities in Nicaragua, UCP Wheels for Humanity sensitized group members on appropriate wheelchair provision. Although some of the wheelchair users in these groups had been active in advocacy for many years, they never knew about appropriate wheelchair provision. As a result of this sensitization they were empowered to seek full wheelchair services and thereby mitigate some of the secondary injuries they had experienced because of ill-fitting wheelchairs.

Years of stigma and negative attitudes mean that educating people with disabilities about their rights and capacity to contribute to their communities is essential. Training wheelchair users how to navigate difficult situations, challenge misconceptions, and participate in community events are all vital steps toward disability inclusion. Where possible, wheelchair-user peer-training courses should be developed in collaboration with DPOs, technical partners, and community development organizations. The participants of these peer-training courses can then be engaged to raise awareness and empower other wheelchair users in their communities. Presently, peer-group training courses are offered through the 8 Steps+ approach in Romania and Kenya, with trainees learning advanced wheelchair handling skills, confidence-building strategies, and ways to become more active in their communities. In Kenya, this training has led to wheelchair users becoming referral actors and peer mentors, helping other wheelchair users participate in their communities and break down barriers.

### 4. SENSITIZE THE COMMUNITY

Working with the community to challenge negative beliefs, attitudes, and behaviors is essential for disability inclusion, and developing an understanding of the importance of appropriate wheelchair provision is key to establishing sustainable referral and support networks for wheelchair users.

Community development organizations should collaborate with DPOs to create and deliver contextually relevant disability inclusion training curricula targeted to community members and stakeholders, including local government, community leaders, service providers, and local businesses. This training should take advantage of the WSTP Managers and Stakeholders curriculum to ensure that all stakeholders understand the 8 Steps+ approach to holistic wheelchair services. Combining disability inclusion and wheelchair provision sensitization will help address attitudinal and physical barriers for wheelchair users as well as encourage their integration within the health system.

As well as providing general sensitization on disability inclusion and the importance of appropriate wheelchair provision, community development organizations can directly support wheelchair services by training community members on referral of and follow-up with wheelchair clients. This training should ensure that community members can identify and screen individuals for wheelchair services, manage their expectations, and connect them to qualified services. Community members should be trained to support wheelchair users once they receive their product. With appropriate training, community members can help identify needs for clinical follow-up and repair that may go unnoticed without targeted support.

In countries implementing the 8 Steps+ approach, World Vision has mobilized networks of community members and volunteer health workers as referral and follow-up actors. These groups include representatives from DPOs, local government, healthcare providers, teachers, and faith leaders. In El Salvador, social workers from the Ministry of Health have been mobilized to provide referral and follow-up support to wheelchair clients—a step toward sustainability.

### Case Study: Education

# Disability is a club anyone can join at any time.



Jane Kamrou in Kenya had a poorly fitted wheelchair and was excluded from her community until she received a well-fitted wheelchair that has allowed her to finish university, change attitudes in her community, and dream about becoming a member of parliament!

Jane became disabled in a traffic accident when she was a teenager. When leaving the hospital, she was given a wheelchair. It was heavy and cumbersome and she couldn't push it herself. Not only that, but it was uncomfortable and quickly broke. As a result, Jane felt excluded from her community for a number of years.

Jane received a new, high-quality wheelchair as part of the ACCESS project—a partnership between World Vision, Motivation Kenya, and the Association of the Physically Disabled in Kenya—which has made her more independent and confident. She says getting her new wheelchair was like receiving a "brand-new pair of stilettos." Today she is happy and self-assured. She thinks

"Now that I am confident in my new wheelchair, I am happy. Because I am happy, people feel like they can approach me directly and discuss disability and learn about my difficulties."

that people feel comfortable approaching and talking to her because of the change in her attitude.

Jane has also recently attended a peer-group training organized by Motivation. At this training, new wheelchair users are taught by mentors how they can be empowered and become strong community members, as well as how to challenge negative attitudes about disability.

Since receiving her wheelchair, Jane has taken up dancing, gone to university, and, most notably, made plans to run for a seat in parliament in the next election. The Kenyan government has a quota system requiring that at least five people with disabilities serve in government at any time, so Jane has a good chance of being elected.

Without an appropriate wheelchair coupled with community education and inclusion, Jane would have struggled to achieve these feats.

As Jane says: "Change begins with you."



### 3.2 Facilitation

# "Our communities are stronger because of this wheelchair partnership."

—Community member, Kenya

The primary role of community development organizations in wheelchair services is to facilitate inclusive, accepting, and welcoming communities for people with disabilities. To do this, organizations need to remove obstacles to inclusion by leveraging existing programs, relationships, and strengths. In order for holistic wheelchair services to become a reality in global programs, international development organizations must prioritize disability inclusion, ensuring that it is a strategic objective and is supported through funding.

### I. IMPLEMENT POLICIES AND GUIDELINES

Given the complexity, technical nature, and risks associated with wheelchair programming, organizations should put policies and guidelines in place to give clear instructions to teams implementing wheelchair programs. In line with the principle of "do no harm," community development organizations should ensure measures are taken to mitigate the health risks attached to providing wheelchairs in less-resourced settings.

One recommendation is to develop, adopt, and implement a comprehensive wheelchair programming policy that requires all wheelchairs donated through the community development organization to be provided to end beneficiaries through skilled service providers that make every effort to comply with the WHO's guidelines on wheelchair provision.

# 2. LEVERAGE STRENGTHS TO FACILITATE THE EIGHT STEPS (Track 1: Wheelchair Provision)

Community development organizations can leverage their strengths and existing community structures to support wheelchair provision through the WHO's eight steps.

### **KEY ACTIONS**

- I. Implement policies and guidelines
- 2. Leverage strengths to facilitate the eight steps (Track I)
- 3. Prioritize disability inclusion to facilitate the "plus" (Track 2)

Referral and appointment. Using programs and structures already functioning in the community, organizations can create referral networks through the training of local health and social workers. These actors may already work within communities and have links to the health system or other structures that may be in place through local programs, education committees, health committees, and community monitors.

Outreach clinics. Once clients are referred, it can often be difficult for them to reach centrally located services. In these cases, service providers can operate outreach clinics to reach the most remote individuals. Service providers bring all of the equipment necessary for wheelchair provision and often see many individuals in a short period of time. Outreach clinics require a great deal of logistical legwork to secure the right venue, provide food and water for staff and clients, and guarantee that a sufficient number of clients will attend the event. Community development organizations often have the relationships and mechanisms in place to support these outreach events.



In India, World Vision has supported outreach clinics by:

- Using community relationships to secure venues at low or no cost
- Raising awareness about outreach events through community forums
- Arranging the secure storage of wheelchairs by negotiating with local government
- Facilitating meetings and communication between the referral network, service providers, and the wheelchair storage facility

In Kenya, the Outreach+ model combines traditional wheelchair outreach services of assessment, fitting, and user training with community inclusion activities under the 8 Steps+ approach. In one Outreach+ clinic, Ministry of Education officials assessed children with disabilities who require school placement. The National Council for Persons with Disabilities used this platform to register new members, while local peer-group trainers and artisans provided psychosocial support to the children and minor repairs to wheelchairs. World Vision not only supported outreach but also leveraged existing community relationships to create a platform for ensuring that beneficiaries have access to a range of services for meaningful inclusion and participation in community life.

Follow-up and inclusion. Engaging the network of referral actors to conduct community follow-up closes the loop on the wheelchair provision process. This creates a strong support structure for new wheelchair users should they need to return to the wheelchair service provider for adjustments.

In countries where 8 Steps+ is being implemented, World Vision supports community networks to conduct follow-up with wheelchair clients to ensure that their wheelchairs remain in working order and are still

appropriate for the user. In addition, community actors hold conversations with clients regarding their social activities and suggest ways for wheelchair users to participate in the community. Information is then fed back to the service provider and World Vision to improve the program. For example, in India, community follow-up identified several wheelchair users who had similar repair needs. Upon further analysis, it was determined that the damage was caused by the improper assembly of wheelchairs. Through community follow-up, the technical partner was able to identify the problem and work with wheelchair service centers to remedy it.

# 3. PRIORITIZE DISABILITY INCLUSION TO FACILITATE THE "PLUS" (Track 2: Disability Inclusion)

Facilitating inclusive communities requires community development organizations to prioritize disability inclusion across all programs. This compels organizations to examine their existing programs to ensure that they are accessible to people with disabilities, while also addressing existing bias within program design, monitoring, and evaluation; implementation; and location and budget decisions. This requires prioritizing disability inclusion and wheelchair provision through strategy, training, human resourcing, and funding. This can be addressed when designing new projects, as well as by thinking critically about current projects and making changes where necessary.

In Romania, after a *Travelling Together* training event for area program staff, participants examined program logical frameworks to identify how activities could be more disability-inclusive. This led to an increased awareness of the need for disability mainstreaming, and in 2016 local staff began advocating to the national office to build disability inclusion into the upcoming five-year strategy. Similarly, World Vision India has prioritized and incorporated disability into its national strategy.



### **IDEAS FOR ACTION**

Including People with Disabilities in Ongoing Programs

Facilitating the "plus" to create inclusive and accepting communities requires community development organizations to become disability-inclusive in all their programs. Specific ideas include:

ADVOCACY Adapt advocacy models to address barriers to disability inclusion, advocating for the right to an appropriate wheelchair as well as access to services and facilities for community members with disabilities. In India, disability inclusion has been incorporated into 134 community advocacy groups across the country. In Romania, youth groups have been advocating for independent living solutions for people with disabilities.

**ECONOMIC DEVELOPMENT** Include wheelchair users in village savings and loan associations (VSLAs) and other ongoing income-generating activities in the community. Facilitating this within existing programs challenges attitudes around disability and offers financial empowerment to wheelchair users.

**HEALTH** Include wheelchair users as community referral and follow-up actors, not only for wheelchair services but for other health initiatives as well.

Over 90% of World Vision field staff working on 8 Steps+ projects in seven countries believe that the approach has caused other projects to become more disability-inclusive.

**COMMUNITY MONITORING** Initiate community monitoring by wheelchair users. In Malawi, wheelchair users are now becoming community volunteers and participating in program monitoring and evaluations.

WATER, SANITATION, AND HYGIENE (WASH) Include wheelchair users in the design of community WASH infrastructure to ensure it meets their needs and to avoid costly retrofitting. Incorporating wheelchair users into community committees and groups surrounding such sector interventions ensures the needs of wheelchair users are met within the community.

**EDUCATION** Support equal educational opportunities for children who use wheelchairs, and facilitate inclusive educational environments through accessibility audits and the participation of school officials in the creation and promotion of disability-inclusive educational activities.

**RESILIENCE AND LIVELIHOODS** Provide training opportunities for wheelchair users and equal participation in ongoing agriculture and sustainable livelihoods projects. For example, one agriculture program in Kenya has trained 145 people with disabilities in beekeeping in its first year.

### PROGRAM DESIGN, MONITORING, AND EVALUATION

Include wheelchair users in the design of new programs, including as participants in focus group discussions and as informants during interviews. People with disabilities can also serve as enumerators for data collection efforts.



### Case Study: Facilitation

# Track I: Making the eight steps possible in India

In remote rural areas of India, true partnership is necessary to facilitate the WHO's eight steps of wheelchair provision. Two technical partners, Motivation India and World Vision India, have worked together with service providers and DPOs to ensure outreach clinics are well resourced and supported by communities.

At first the plan appeared simple: Motivation India would support local wheelchair provision through outreach clinics held in rural communities. World Vision would support this by referring and following up with clients who received wheelchairs.

However, things became more challenging when both partners realized what was necessary to provide a quality service. To facilitate the WHO's eight steps via an outreach clinic, a number of things were required:

- Suitable locations with private appointment spaces, and necessary equipment
- Secure storage for wheelchairs at the location prior to the event
- Food and water for staff and service providers working long hours
- Assistance for clients traveling long distances, where the cost of transportation could be prohibitive

The logistics of these events were difficult to manage for wheelchair service providers without community connections. Yet with the support of World Vision, the community, and the local government, the seemingly impossible became possible.

World Vision was able to work with local governments and hospitals to



secure space for the outreach clinics. In one community, when no hospital was available, local families opened their homes so the outreach clinic could continue. Wheelchair storage was donated by local governments, and in one community a local business owner stored wheelchairs free of charge. Other community organizations and DPOs have provided space for wheelchair preparation and snacks and water for staff. It is only because of the commitment from the service providers, technical partners, community organizations, DPOs, local governments, World Vision, and community members themselves that these services could be successful in remote areas.

These services go beyond just providing mobility. They bring communities together, raise awareness of disability inclusion, and open the door for people with disabilities to fully participate in their communities. The success isn't the individual getting a new wheelchair; the success is that the community comes together around people with disabilities. The success is what comes next for all those involved in this seemingly impossible endeavor.



### Case Study: Facilitation

# Track 2: The "plus" of inclusive communities in Romania



In Romania, the 8 Steps+ approach has led to greater inclusion for the community, education for children's groups, and tangible progress for advocacy groups and wheelchair users like Master Gatis. These groups and individuals have worked together to come up with innovative ideas to include new wheelchair users in ongoing activities.

In the Romanian countryside, the elderly are the group that experiences the greatest mobility limitations and social exclusion. They find it challenging to leave their homes, are unknown by their communities, and lack access to support structures. This means that many elderly wheelchair users do not view themselves as part of their community and feel forgotten. In Negrești, Master Gatis was one of only two wheelchair users to participate in community groups. Without a budget for specific activities, the group looked to World Vision Romania for assistance in addressing problems in their community.

Community advocacy groups were already operating locally. After a consultation, these groups decided to begin an outreach program aiming to educate young people about disability and support disability inclusion in the community.

The group enlisted children, youth, and other community members to visit people with disabilities in their homes. World Vision invited Boy Scout groups in Negrești to help Master Gatis with chores around his house. At Christmas, children's caroling groups visited people's homes to sing, while simultaneously learning about the benefits of an inclusive community.

These events culminated with the annual Sons of the Village celebration in rural Cămărașu. With an inclusive and accepting approach, the community groups arranged for people with disabilities, who are often unable to leave home, to participate in the events. The mayor welcomed everyone and talked publicly during the opening ceremony about the need to integrate people with disabilities into the community.

There have been noteworthy results. Now that Master Gatis is better connected to his community, he is committed to giving back. As a former apiarist and farmer, he has volunteered with World Vision to share his experience in beekeeping with the children of the community. Children who come to the class learn not only about bees but also about disability.

The use of existing structures has enabled the development of disability inclusion in Romania in a way that is both locally relevant and sustainable.



### 3.3 Collaboration

"The gathering of forces is the most important part of this change. Together we are strong."

—World Vision staff member, India

"This project has been a catalyst for a long-term, sustainable partnership and appropriate wheelchair provision in communities."

—World Vision staff member. Malawi

For the successful implementation of the 8 Steps+ approach, collaboration with multiple partners is crucial. Respondents in this research listed 21 types of stakeholders—local, national, and international—that are accountable for the success of wheelchair provision programs. Community development organizations are well placed to link service providers and technical experts to these stakeholders, but strong coordination is necessary.

Through partnership, organizations can leverage their strengths for broader impact. However, this requires partners to think critically about their strengths and weaknesses. The most successful projects in this research were those that had frequent and open communication with partners. Significant challenges can arise when working with multiple partners in different locations, making a clear delineation of roles and responsibilities at the beginning of the project vital. The 8 Steps+ approach has evolved from successes in projects where organizations have established relationships with local, national, and international partners based on shared values and open communication channels.

### I. COLLABORATE WITH TECHNICAL PARTNERS

Health system capacity. One of the most important parts of the 8 Steps+ approach is building the capacity of local wheelchair service providers. Ensuring high-quality wheelchair services within local health facilities requires

### **KEY ACTIONS**

- I. Collaborate with technical partners
- 2. Collaborate with DPOs
- 3. Collaborate with international partners

significant training of individuals as well as organizational capacity building around adhering to the WHO's guidelines. This training, mentorship, and ongoing support should be provided through agreements with technical partners that specialize in wheelchair provision.

One key barrier faced by wheelchair service providers is the lack of WHO WSTP-trained personnel; another is the lack of processes and procedures that foster the implementation of the full eight steps. While it is the role of technical partners to build this capacity, the time and resources needed to address these two factors can sometimes be viewed as problematic by community development organizations. A collaborative approach that provides both education and funding is needed. Without recognition of their currently low level of capacity—and without joint program initiatives to address it—low-quality services will hinder success for wheelchair service providers. This will have a direct

impact on the ability of people with disabilities to receive appropriate wheelchairs and be included in the community.

**Product range.** A key consideration for community development organizations working in wheelchair provision is ensuring the continuous availability of a range of high-quality wheelchairs, both through importation and local production. To cater to a range of disabilities and support high-quality services by wheelchair service providers, community development organizations need access to different types of wheelchairs. To obtain an appropriate range of products, community development organizations can:

- I. Work with technical experts to procure a range of high-quality, contextually appropriate wheelchairs using project funds
- 2. Work with donors to provide mixed donations of different types of wheelchairs
- 3. Work with technical experts to build capacity of local markets to manufacture high-quality wheelchairs
- 4. Advocate to government for a range of wheelchairs and long-term national solutions

The ACCESS project in Kenya has sourced a range of wheelchairs through four different channels. The international procurement of high-quality wheelchairs is made possible by USAID funding. Locally produced wheelchairs are manufactured by and procured from a trained local service provider. Two international wheelchair donors support the project by shipping wheelchairs at no cost. This mix of funding streams results in a continuous flow of high-quality wheelchairs, spurs local production, and introduces wheelchair donors to the 8 Steps+ approach.

Recognizing the challenges inherent in procuring a range of products, the United States Agency for International Development has supported the Consolidating Logistics for Assistive Technology, Supply, and Provision (CLASP) project, a resource for organizations to acquire a range of



wheelchairs that meet ISO standards and are designed for less-resourced settings. Information is available at www.clasphub.org.

#### 2. COLLABORATE WITH DPOs

Community development organizations must collaborate with local and national DPOs. Using local health and social workers, community leaders, and existing structures such as DPOs to connect families directly with clinics takes longer to facilitate but can ensure the long-term health and well-being of wheelchair users and their families. In India, World Vision is working with over 130 local DPOs to build capacity for advocacy and citizen engagement.

Community development organizations should also partner with DPOs to strengthen their own understanding of disability. In Nicaragua, World Vision has partnered with a local DPO to help inform its approach and gain critical insights into current institutional barriers faced by people with disabilities. This has resulted in joint trainings that are contextually relevant and informed by the input of people with disabilities. In addition to disability inclusion training, DPOs can support community development organizations in baseline needs assessments with the disability community, conduct or support accessibility audits, and refer highly qualified people with disabilities to community development organizations as potential staff members. Working with DPOs is essential in fulfilling the development community's commitment to the disability watchwords: "nothing about us without us."



#### 3. COLLABORATE WITH INTERNATIONAL PARTNERS

With increased attention to both appropriate wheelchair provision and disability inclusion, community development organizations have a range of international partners to tap for support in wheelchair programming. The International Society of Wheelchair Professionals (ISWP) is an organization dedicated to promoting the WHO's guidelines on wheelchair provision in less-resourced settings, promoting training and research activities, improving wheelchair design and manufacturing, and coordinating services. They offer an online assessment of knowledge about wheelchair provision. Members can access information about upcoming training opportunities and the status of

wheelchair provision in their country. Information is available at http://www.wheelchairnet.org/.

Community development organizations can take advantage of the increased interest in disability inclusion to work with large international donors to attract project funding for specific inclusion campaigns. International donors such as USAID, UNICEF, DFID, and DFAT offer partnership opportunities in disability inclusion. With large-scale public-private networks such as the Global Action on Disability Group emerging in 2015, local development organizations have more opportunities to build global partnerships and attract international funding.



## Case Study: Collaboration

# ACCESS in Nicaragua: the socios

In Nicaragua, the ACCESS partnership is made up of five organizations: a community development organization, a technical expert organization, a local NGO, a government ministry, and a local DPO. These organizations include World Vision, United Cerebral Palsy Wheels for Humanity (UCP Wheels), Future of Nicaragua, The Ministry of Health (MINSA), and Los Pipitos. Together, they collaborate to deliver high-quality wheelchair provision and disability inclusion in a country where wheelchair distribution models had been the norm. Never before had organizations worked cross-functionally to deliver services, raise awareness, and influence stakeholders on wheelchair provision.

The partnership seemed simple. World Vision would assist communities to identify clients who needed wheelchairs. UCP Wheels would train and support service providers at MINSA, Los Pipitos, and Future of Nicaragua to conduct appropriate assessments and prescribe wheelchairs, which would be ordered and assembled from a newly formed regional wheelchair hub at Future of Nicaragua. Service providers would then conduct fitting and user training, with World Vision following up with disability inclusion activities. Completing all eight steps would require each organization to do their part well.

The biggest hurdle was identifying where one partner's responsibility started and another partner's ended. Referral networks needed direction not only from World Vision but also UCP Wheels, who could better explain the eight-step provision process. Service providers looked for support not only from UCP Wheels, the technical experts in wheelchair provision, but also to Future of Nicaragua, who advised them on their wheelchair prescriptions when ordering from the regional hub, and World Vision, who assisted with the monitoring database.

To manage these blurring responsibilities, the partners—or socios in Spanish—had to trust each other. The technical

partner had to trust the hub to provide correct guidance on wheelchair prescriptions. The hub had to trust World Vision to provide correct advice to service providers about how to enter order information into the monitoring database. All partners had to trust that when any of the *socios* visited communities they would deliver a consistent message about the need for high-quality wheelchair services.

While building trust was a long process, now the team understands each organization's role, trusting each other to do and say not only what is best for the project, but what is best to promote the 8 Steps+ model of wheelchair provision in Nicaragua. This trust was built over time through continual communication and collaboration. Now, when asked about the project, staff members of any organization will say, "I need to consult the socios," demonstrating their commitment to working as a team.

Through this collaboration, the *socios* have succeeded in advocating to the National Autonomous University of Nicaragua (UNAN) to include wheelchair service training in the physiotherapy curriculum. Because UNAN is the only Nicaraguan university training physiotherapists, this allows every new physiotherapist in Nicaragua to be prepared to conduct the full eight steps of wheelchair provision. UNAN staff participated in wheelchair provision training for the first time in 2016 and are currently developing a plan for integrating the training into the physiotherapy curriculum.

The lasting legacy of the ACCESS project in Nicaragua is not just the provision of wheelchairs but the understanding that it takes community development organizations, wheelchair experts, and service providers working together to build a sustainable system of wheelchair provision and disability inclusion. Collaboration is the heart of the 8 Steps+approach—just ask the socios.



# 3.4 Advocacy

"Expecting the same stakeholders that are causing the problems to be the catalyst for change is hard. Incredible when it works, but hard nonetheless."

—Motivation Charitable Trust senior staff member, UK

Working collaboratively with partners toward the implementation of the 8 Steps+ approach gives community development organizations the strength to advocate for change. Community development organizations can leverage their national and international networks, as well as those of their partners, to facilitate long-term change at all levels of government and society.

# I. FOCUS ON THE RIGHTS OF PEOPLE WITH DISABILITIES

When people with mobility limitations receive appropriate wheelchairs, the environmental barriers they face become more evident. Supplemented by community education and outreach, the visible impacts of inaccessibility in a community can be used as a springboard for improving the rights of people with disabilities through advocacy.

As a result of increased awareness and education about disability through World Vision wheelchair programming, World Vision advocacy groups have begun to tackle a variety of disability rights issues. In Romania, municipalities have begun to add wheelchair ramps and make public spaces accessible for wheelchair users in their communities. In Nicaragua and El Salvador, World Vision advocacy groups have begun educating teachers and administrators on disability-inclusive education and anti-bullying. In India, advocacy groups work with local governments to help people with disabilities access basic government services such as disability certification and pensions.

### **KEY ACTIONS**

- Focus on the rights of people with disabilities
- 2. Advocate for national policy changes and regulations
- 3. Create global solutions

# 2. ADVOCATE FOR NATIONAL POLICY CHANGES AND REGULATIONS

National policy. The reputation, size, and strength of community development organizations such as World Vision can be leveraged to achieve national change when combined with the expertise of technical partners. Community development organizations can use their resources and neutrality to help inform national governments of policy changes that will lead to sustainable solutions for people with disabilities based on an informed and collaborative foundation. Incorporating the WHO's eight steps and quality standards into policies that can be legislated locally advocates for a higher level of care for people in need of wheelchairs, creates opportunities for funding, and strengthens systems at all levels.



The implementation of the 8 Steps+ approach in India, Romania, and Kenya has resulted in policy shifts that include the incorporation of wheelchair provision training into university health curricula, increased access to quality assistive devices, and improved regulations surrounding wheelchair services. In Romania, policy changes have been initiated that would give users access to new wheelchairs every three years, rather than every five.

Local health systems. Strengthening both community and health structures means that community groups and local governments must both advance inclusion. Working with technical partners that specialize in building health system capacity introduces the WHO's guidelines to local health facilities. This is a powerful tool to strengthen health systems for long-term sustainability, especially when combined with national policy changes and community-led advocacy efforts that hold local health systems accountable for services. In El Salvador, a collaborative advocacy approach between UCP Wheels for Humanity, World Vision, and local service providers has raised awareness of appropriate wheelchair provision in rural communities using billboards and local advertising. In Kenya, World Vision advocacy groups have engaged with service providers on the need to increase service frequency in certain communities, and as a result outreach events have increased.

### 3. CREATE GLOBAL SOLUTIONS

Wheelchair donors. Community development organizations should communicate the impacts of 8 Steps+ to global donors to demonstrate how a holistic approach to wheelchair services supports donor processes and intended outcomes. Donors are attracted to a strong presence and robust existing programming in the countries of operation, which allows donors, community development organizations, and technical partners to work together for improved outcomes globally.

60% of World Vision offices using the 8 Steps+ approach are witnessing policy changes at the national level to accommodate the WHO's guidelines on wheelchair provision.

In Australia, a partnership with Wheelchairs for Kids (WFK), Motivation Africa, and World Vision Australia is founded on the principles and requirements of the WHO's eight steps. With its global reach, World Vision is able to ensure that children in remote communities access high-quality wheelchairs. Motivation ensures WFK wheelchairs are fitted through the eight steps. WFK advocates for wheelchair provision, working to ensure all wheelchairs are provided through trained service providers.

Wheelchair sector. Community development organizations need to demonstrate the benefits that they bring to the process of community education and social inclusion. This will allow them to influence the broader wheelchair sector. Technical partners traditionally view community development organizations involved in wheelchair provision as disruptive. Evidence is needed to demonstrate the appropriate and value-added role that community development organizations play in the sector. This will foster collaboration between technical partners and community development organizations that will give the technical partners access to individuals who would otherwise be unreachable, and help the community development organizations facilitate inclusive environments for wheelchair users.



## Case Study: Advocacy

# National advocacy: collectively, we gain strength

In Kenya, the collaboration of ACCESS partners alongside the National Council for Persons with Disabilities and the government has resulted in national policy change that includes the WHO's guidelines in Kenya's National Policy on Persons with Disabilities.

The development of this policy was raised by an ACCESS partner at a stakeholder meeting. When it was originally created, this policy marked significant progress for Kenya, but there was no mention of wheelchairs or assistive devices.

Following the ACCESS team's discussions with the government and increased advocacy around the importance of appropriate wheelchair provision, the team was invited to attend the National Disability Forum, alongside many key stakeholders. As a result, the team was given the opportunity to contribute to the National Disability Policy, and a task force was formed with the goal of ensuring assistive devices were adequately covered in the new policy. World Vision's recognized impartiality,

scale, and influence led to the ACCESS project coordinator being given the role of chairing the task force.

With the input of project partners, an amendment to the bill was drafted. Article 20 aims to increase the availability, affordability, and accessibility of assistive devices and support services for people with disabilities. It includes adoption of the WHO's guidelines, integrates Wheelchair Service Training Packages in the national medical curriculum, and subsidizes the cost of assistive devices through national health insurance.

If successful, this policy will ensure funding for education and services, allowing people with disabilities access to a stronger and more informed health system. This momentous achievement would not have been possible without strong partnerships between Motivation, the Association for the Physically Disabled of Kenya (APDK), and World Vision, which collectively advocated for the amendments and asserted their combined influence with the National Council for Persons with Disabilities.





# "Change begins with you."

—Jane Kamrou, wheelchair user, Kenya

Education | Facilitation | Collaboration | Advocacy

### **APPENDICES**

### APPENDIX I: FURTHER RESOURCES

### **UNCRPD**

https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities.html

### WHO Guidelines on the Provision of Manual Wheelchairs in Less Resourced Settings

http://www.who.int/disabilities/publications/technology/wheelchairguidelines/en/

### WHO Wheelchair Service Training Package (Basic and Intermediate)

http://www.who.int/disabilities/technology/wheelchairpackage/en/http://www.who.int/disabilities/technology/wheelchairpackage/wstpintermediate/en/

### WHO Community-based Rehabilitation Guidelines

http://www.who.int/disabilities/cbr/guidelines/en/

### WHO INCLUDE (a community-based rehabilitation [CBR] learning community)

http://www.who.int/disabilities/include

### International Society of Wheelchair Professionals

http://www.wheelchairnet.org/

### World Report on Disability: World Health Organization and World Bank

http://www.who.int/disabilities/world\_report/2011/en/

### Travelling Together: A disability-awareness training manual developed by World Vision

http://www.wvi.org/disability-inclusion/publication/travelling-together

# On the Road to Disability Inclusion: A supplement to the *Travelling Together* curriculum, which focuses on disability inclusion throughout the program life cycles

https://www.worldvision.org/our-work/disability-inclusion

### CLASP: Consolidating Logistics for Assistive Technology, Supply, and Provision

http://www.clasphub.org

# APPENDIX 2: A BRIEF EXPLANATION OF THE WHO'S EIGHT STEPS OF WHEELCHAIR PROVISION

### I. Referral and appointment

People in need of wheelchairs are referred to health facilities through government, non-government, and community networks (such as World Vision).

Appointment times and dates are set for potential users to attend the health facility for screening and assessment.

### 2. Assessment (2 weeks – 2 months)

At the health facility, wheelchair users receive unique individual assessments where their measurements are taken and recorded to facilitate the accurate prescription and preparation of the wheelchair.

### 3. Prescription (selection) (I day)

The wheelchair clinician speaks with the user and their family to understand their needs, their lifestyle, and the functions that the wheelchair will have in the user's life.

In this user-centered approach, based on the physical assessment combined with user needs, the clinician and wheelchair user decide on an appropriate wheelchair and write a prescription.

A wheelchair prescription will include the type of wheelchair, size, and special modifications for each individual.

### 4. Funding and ordering (2 weeks - 2 months)

A funding source for the wheelchair is identified (government, NGO such as World Vision, etc.) and the specific type of wheelchair is ordered.

### 5. Product (wheelchair) preparation (I week – I month)

Trained wheelchair technicians assemble the wheelchair and make adjustments and changes based on measurements in Step 2.

Technicians make modifications for each user, or for spinal support using other products.

### 6. Fitting (I day - several days)

During this step, a wheelchair user tries out their new wheelchair. Adjustments and modifications are made to ensure that it meets their needs and that it is comfortable, in order to prevent secondary injuries.

### 7. User training (I day)

At the end of the fitting session, new wheelchair users and their caregivers are instructed how to safely use and maintain the wheelchair.

The wheelchair user training is conducted.

### 8. Maintenance, repairs, and follow-up (after 2 weeks; every 6 months for children)

Follow-up or "check-up" appointments are made to ensure the wheelchair is fitted correctly and comfortably and to provide the user with further training and support.

### APPENDIX 3: THE 8 STEPS+ AND COMMUNITY DEVELOPMENT ORGANIZATIONS

Eight Steps of Wheelchair Provision	Role of Community Development Organizations	How?
I. Referral and appointment	Refer people with disabilities to local health facilities trained in the WHO-WSTP courses or certified through ISWP competency assessments	<ul> <li>Identify and recruit community volunteers</li> <li>Collaborate with technical partners to train community networks in WHO referral and follow-up</li> <li>Understand service provider capacity and limits</li> <li>Leverage community networks to find the most vulnerable people and help them access services</li> </ul>
<ol> <li>Assessment</li> <li>Prescription (selection)</li> <li>Funding and ordering</li> <li>Product (wheelchair) preparation</li> <li>Fitting</li> <li>User training</li> </ol>	<ul> <li>Ensure WHO's eight steps are met at health facility</li> <li>Facilitate logistical elements of wheelchair outreach clinics on behalf of service providers and link other services to outreach events</li> <li>Reinforce basic skills with wheelchair users</li> </ul>	<ul> <li>Collaborate with technical partners that can train health facilities and support community development organizations</li> <li>Work with local government and Ministry of Health to promote wheelchair provision as an integrated part of health services closer to communities</li> <li>Support peer mentors who can conduct wheelchair user training and support in communities</li> </ul>
8. Maintenance, repairs, and follow-up	<ul> <li>Follow up with wheelchair clients every six months and refer them to clinic for adjustments and maintenance</li> <li>Support local bicycle repair shops to conduct very basic wheelchair repair in communities</li> </ul>	<ul> <li>Train existing community networks in referral and follow-up</li> <li>Keep records to ensure follow-up is done in the community</li> <li>Collaborate with technical experts to train local artisans or bike repair businesses in basic wheelchair maintenance</li> </ul>
The "plus"	<ul> <li>Change community attitudes and raise awareness on disability inclusion</li> <li>Advocate for the rights of people with disabilities</li> <li>Empower wheelchair users</li> <li>Intentionally run disability-inclusive programs</li> <li>Ensure existing programs are disability-sensitive</li> </ul>	<ul> <li>Leverage existing advocacy tools for disability inclusion in partnership with DPOs</li> <li>Use wheelchair provision as a springboard for disability inclusion and tackle concrete issues for people with disabilities locally</li> <li>Conduct advocacy meetings with stakeholders and partners</li> <li>Develop peer mentorship and wheelchair user groups</li> <li>Train field staff on mainstreaming disability</li> <li>Sensitize stakeholders at education events</li> </ul>



### APPENDIX 4: SECONDARY INJURIES

When a wheelchair user receives a poorly fitted wheelchair, they can suffer secondary injuries. These injuries are easier and far more cost-efficient to prevent than treat, and if left unchecked they can become life-threatening.<sup>24</sup>

- Pressure sores are areas of skin that are damaged by remaining in one position for too long. Pressure sores or ulcers happen when wheelchair users are provided with incorrectly fitted wheelchairs, do not have a proper pressure-relief cushion, or spend long periods of time without movement. They can take up to a year to heal, and if left untreated they can become infected and lead to death.
- Spinal deformity (scoliosis) is a permanent curvature of the spine often resulting in severe postural problems. It can be caused by using a wheelchair that does not provide proper postural support or fits poorly (i.e., children being given adult-sized wheelchairs). It can contribute to permanent spinal curvature often leading to chronic back pain.
- Shoulder injuries involve damage to muscles that make shoulder movements painful or impossible. They can be caused by using a wheelchair without proper postural and leg support or by sitting in a wheelchair that is too large or too small.
- Contracture is a tightness in the joints that can make it impossible to straighten limbs. Causes include the incorrect positioning of the wheelchair user's body in relation to the wheels or using a wheelchair that is too large.

For more information, see the Guidelines on the Provision of Manual Wheelchairs in Less Resourced Settings, linked in Appendix 1.

### **REFERENCES**

WHO and World Bank. (2011). World Report on Disability. World Health Organization. Geneva. Braithwaite, J., Mont, D. Disability and poverty: a survey of World Bank poverty assessments and implications. ALTER – European Journal of Disability Research / Revue Européenne de Recherche sur le Handicap, 2009,3:219-232. doi:10.1016/j.alter.2008.10.002

<sup>2</sup>WHO. (2008). Guidelines on the provision of manual wheelchairs in less-resourced settings. World Health Organization. Geneva.

<sup>3</sup>WHO and World Bank. (2011). World Report on Disability. World Health Organization. Geneva.

<sup>4</sup>Zakrasek, E., Creasy, G., & Crew, J. (2015). Pressure ulcers in people with spinal cord injury in developing nations. Spinal Cord, 7-13. Hossain, M., Rahman, M., Bowden, J., Ouadir, M. H., & Harvey, L. Psychological and socioeconomic status, complications and quality of life in people with spinal cord injuries after discharge from hospital in Bangladesh: a cohort study. Spinal Cord, 13.

<sup>5</sup>Hossain, M., Rahman, M., Bowden, J., Ouadir, M. H., & Harvey, L. (2015).

<sup>6</sup>WHO. (2012). Wheelchair Service Training Package: Reference Manual for Participants. World Health Organization. Geneva. http://apps.who.int/iris/bitstream/10665/78236/1/9789241503471\_reference\_manual\_eng.pdf

<sup>7</sup>United Nations. UNTERM. https://unterm.un.org/UNTERM/display/Record/UNHQ/NA/c293118

<sup>8</sup>UN. (2006). United Nations Convention on the Rights of Persons with Disabilities. New York. http://www.un.org/disabilities/convention/conventionfull.shtml

9WHO. (2003). Community-based rehabilitation (CBR). World Health Organization. Geneva. http://www.who.int/disabilities/cbr/en/

<sup>10</sup>WHO. (2015). Wheelchair Service Training Package - Basic. World Health Organization. Geneva. http://www.who.int/disabilities/technology/wheelchairpackage/en/

"WHO. (2015). Wheelchair Service Training Package - Intermediate. World Health Organization. Geneva. http://www.who.int/disabilities/technology/wheelchairpackage/wstpintermediate/en/

<sup>12</sup>WHO. (2015). Wheelchair Service Training Package - Managers and Stakeholders. World Health Organization. Geneva. http://www.who.int/phi/implementation/assistive\_technology/wheelchair\_train-pack\_managers/en/

<sup>13</sup>Motivation Charitable Trust. (2015). Freedom through mobility. http://www.motivation.org.uk/

<sup>14</sup>WHO. (2011). World Report on Disability. World Health Organization. Geneva.

<sup>15</sup>Mukherjee, G., & Samanta, A. (2005). CY, S., Ranabha, M., & Craighead, I. W. (2011). Visagie, S., Mlambo, T., Van der Veen, J., Nhunzvi, C., Tigere, D., & Scheffler, E. (2015).

<sup>16</sup>J, P., R, C., E, Z., R, C., & M, M. (2006). Mukherjee, G., & Samanta, A. (2005). Rispin, K., & Wee, J. (2014). A Paired outcomes study comparing two pediatric wheelchairs for low-resource settings: the Regency Pediatric wheelchair and a similarly sized wheelchair made in Kenya. Assistive Technology, 26, 88-95.

<sup>17</sup>Motivation Charitable Trust. (2014). Fact Sheet 4: Secondary Injuries.

<sup>18</sup>Selengia, K., Kechukyan, A., & Vayanis, K. (2016). The health consequences of lacking mobility.

<sup>19</sup>Hossain, M., Rahman, M., Bowden, J., Ouadir, M. H., & Harvey, L. (2015).

<sup>20</sup>Selengia, K., Kechukyan, A., & Vayanis, K. (2016). The health consequences of lacking mobility.

<sup>21</sup>Reddy, M. (2015). Pressure Ulcers: Treatment. Systematic Review 1901. British Medical Journal. Retrieved from http://clinicalevidence.bmj.com/x/systematic-review/1901/overview.html

<sup>22</sup>Motivation Charitable Trust. (2015). Motivation: Freedom through mobility. http://www.motivation.org.uk/

<sup>23</sup>WHO. (2008). Guidelines on the provision of manual wheelchairs in less-resourced settings. World Health Organization. Geneva.

<sup>24</sup>Motivation Charitable Trust. (2014). Fact Sheet 4: Secondary Injuries.















