

# Global wheelchair service training development

## Overview

It is estimated that 1% of the total population worldwide requires wheelchairs, yet only 5%-15% of people in need of wheelchairs currently have access to this service. Assistive products, such as wheelchairs, are recognized as an “essential component for inclusive sustainable development.”<sup>1</sup> An appropriate wheelchair is crucial for many people with functional difficulty to meet personal posture and mobility needs, supporting health, well-being, and inclusion. However, provision has often been focused on delivering the product, rather than following an evidence-based service delivery process.<sup>2</sup> This lack of wheelchair service delivery competency among rehabilitation professionals and the limited integration of wheelchair-related content into professional rehabilitation programs is a global concern, extending beyond less-resourced settings.<sup>3</sup>

In response to this issue, the [World Health Organization](#) (WHO) and the [United States Agency for International Development](#) (USAID) published a series of [Wheelchair Service Training Packages](#) (WHO WSTPs) following the release of the WHO [Guidelines on the Provision of Manual Wheelchairs in Less Resourced Settings](#) in 2008. The WSTPs, available at the [basic](#), [intermediate](#), and [manager and stakeholder levels](#), aim to support clinicians’ training and increase wheelchair access worldwide<sup>4</sup> and include components available in multiple languages (World Health Organization 2012, 2013, 2015).<sup>5</sup>

The [International Society of Wheelchair Professionals](#) (ISWP) was established in 2015 to focus on improving wheelchair service delivery globally, encompassing both training and policy development.<sup>6</sup> Building on this foundation, the WHO recently published the [Wheelchair Provision Guidelines](#), streamlining the eight steps outlined in their 2008 guidelines into a four-step process: Select, Fit, Use, and Follow-Up. This new approach provides clearer guidance on what effective service provision entails and simplifies the process for providers, offering a more accessible framework.<sup>7</sup>

## The need for comprehensive training and curriculum integration

Various manuals, guidelines, and training programs have been developed to enhance wheelchair service provision, yet their implementation is not universal and is often under-resourced. Many countries report inadequate, unstable, or nonexistent availability of rehabilitation personnel.<sup>8</sup> Despite these challenges, comprehensive wheelchair service delivery processes and a competent workforce are essential to ensure appropriate wheelchair service provision.<sup>9</sup> There is increasing evidence revealing the need to build a competent workforce of rehabilitation professionals and strengthen the wheelchair service provision curricula in professional rehabilitation programs.<sup>10</sup> In addition, the lack of awareness among educators in rehabilitation programs of existing open-source resources for wheelchair service provision education presents an additional barrier.<sup>11</sup>

The lack of wheelchair service delivery competency among rehabilitation professionals and the limited integration of wheelchair content into professional rehabilitation programs are global concerns, not just issues limited to less-resourced settings.<sup>12</sup> Barriers to integration include a lack of educational standards, time constraints, limited human resources with the expertise to teach the content, limited physical resources, and a lack of knowledge regarding how to add or modify wheelchair-specific content in existing curricula.<sup>13</sup> Furthermore, existing research emphasizes that wheelchair service delivery is largely dependent on the ability to access equipment within a region.<sup>14</sup> As such, students in rehabilitation professional programs in less-resourced settings are often not trained to provide appropriate wheelchair services due to the lack of wheelchair-related content in existing curricula, a challenge reinforced by limited equipment and human resources.<sup>15</sup>

Wheelchair service delivery is critically dependent on the availability of equipment locally. Fung and Miller (2019) highlighted that rehabilitation students often lack training in providing appropriate wheelchair services using local resources.<sup>16</sup> The interconnectivity between service delivery and the supply chain is essential, as the absence of a local industry to supply suitable wheelchairs necessitates integrating wheelchair service provision education into academic curricula, which in turn requires access to locally available equipment.<sup>17</sup>

The ultimate goal is to ensure that everyone who needs a wheelchair receives one that is appropriate for their needs and is trained to use and maintain it. Increasing the number of professionals trained in appropriate wheelchair service provision will help to achieve this goal.

## **Global initiative for sustainable wheelchair services**

Global stakeholders envision “developing appropriate and sustainable wheelchair service provision systems globally, for me, for you, for us.”<sup>18</sup> To achieve this, wheelchair services must enable users to access appropriately trained personnel who can assess their needs and facilitate the selection of an appropriate wheelchair; provide information and training in the use and maintenance of their wheelchair; and offer ongoing support and referral to other services, where appropriate.<sup>19</sup> This requires a workforce of appropriately trained personnel with the competencies required to fulfill the various wheelchair provision roles, including identification and referral, service delivery (clinical and technical), and management.<sup>20</sup> One way to increase the number of such trained rehabilitation professionals is through education, specifically in academic rehabilitation programs for occupational therapists, physical therapists, and prosthetists and orthotists.<sup>21</sup> Furthermore, to establish optimal assistive technology systems for the provision of appropriate, affordable, and effective assistive technology, including mobility devices such as wheelchairs, there is a fundamental need to educate and train relevant personnel.<sup>22</sup>

It is crucial to highlight the role of skilled rehabilitation experts in delivering wheelchair training as an integral element of their continuous professional growth. Such training should be considered for short-term involvement. For a sustainable impact, it is essential to deliberate on embedding wheelchair training within the national educational syllabi for long-term benefits.

## **Advancing wheelchair service provision standards**

Insufficient training among wheelchair service providers has been associated with the improper delivery of wheelchair services, and the absence of adequately trained staff is one of the factors that contributes to limited access to wheelchairs. The WHO developed four training packages, from “Basic” to “Training of Trainers,” to assist individuals who provide wheelchairs in using the proper service delivery techniques.<sup>23</sup> Additionally, open-source wheelchair service provision

resources are available, and there are opportunities for increasing training in both formal and informal programs.<sup>24</sup>

The [International Society of Prosthetics & Orthotics](#) (ISPO), the [International Society of Physical and Rehabilitation Medicine](#) (ISPRM), [World Physiotherapy](#), and the [World Federation of Occupational Therapists](#) (WFOT) publish educational standards and professional guidelines that are typically updated every 5–10 years, with the most recent versions ranging from 2011 to 2021.<sup>25</sup> To further support training, the ISWP Wheelchair Academy,<sup>26</sup> the Wheelchair Service Provision Programme by Physiopedia,<sup>27</sup> the Wheelchair Maintenance Training Program by the University of Pittsburgh,<sup>28</sup> the Wheelchair Skills Program by Dalhousie University,<sup>29</sup> and the ISWP's *SMART Toolkit* were introduced as the evidence-based Model of Wheelchair Service Provision Education and Training.\*

To further scale efforts and facilitate the integration of this training into educational curricula, the ISWP developed the *Wheelchair Educators' Package (WEP)*,<sup>30</sup> an online resource designed to support the integration of wheelchair service training into university and other workforce preparation courses.<sup>31</sup> This Package guides the integration of wheelchair content into the curriculum at the three states of integration: advocating, planning and teaching, and evaluating. To build a competent workforce, the WHO highlights the *WEP* as an initiative to support the integration of wheelchair training into curricula in the [Wheelchair Provision Guidelines](#). By integrating and improving existing wheelchair-specific content in curricula, it supports the development of a competent workforce of occupational therapists, physical therapists, and prosthetics and orthotics wheelchair service providers at the basic wheelchair service provision level.

Furthermore, a wheelchair service center or department can be established within existing rehabilitation services, which are likely to have users accessing the service for health or rehabilitation needs.<sup>32</sup> Existing wheelchair services and relevant professional organizations can provide support in defining competencies and the development of training programs that harmonize with the development of services and roles.<sup>33</sup>

## Streamlining wheelchair service training in rehabilitation studies

The integration of wheelchair service training into rehabilitation curricula is a forward-thinking approach that addresses the urgent need for comprehensive care for individuals with mobility impairments. This initiative, in collaboration with academic leaders and the National Curriculum Revision Committee,<sup>34</sup> aims to create a robust framework ensuring that future health care professionals are well-equipped with the necessary skills and knowledge for wheelchair service provision.

The process involves thoroughly evaluating existing curricula, creating specialized training modules, or aligning the existing content with the required content, as covered in the *WEP*.<sup>35</sup> This is complemented by enhancing faculty expertise through targeted training programs. Incorporating a variety of educational methods, such as lectures, hands-on sessions, and case studies, enriches the learning experience. Furthermore, the development of precise assessment tools to measure student proficiency and the promotion of additional learning opportunities are crucial to fostering a well-rounded educational experience. Establishing partnerships with local wheelchair service providers and engaging in advocacy work with the [Higher Education Commission](#) are also vital components that contribute to the long-term success and sustainability of this initiative, ultimately benefiting both students and the communities they will serve.

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\* Enrolling in various programs requires memberships and subscriptions.

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