

## Rehabilitation of the injured child

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Several recent surveys have highlighted the significant risks of disability experienced by injured children.<sup>1</sup> While the distinction is inadequately captured in most databases, disability results from the *interaction* between the injured child and their environment, and encompasses impairments in body functions and structures as well as limitations in activities and participation.<sup>2</sup> The major impact on the lives of injured children is typically compounded by the adverse psychosocial and financial consequences for their families.<sup>3</sup> The “injury poverty trap” is an inevitable outcome for many low-income households.<sup>1</sup>

Rehabilitation is a process designed to assist the injured child, who is experiencing or likely to experience disability, to achieve and maintain optimal functioning in interaction with their environment. By addressing evolving needs and building on the strengths and resources of the child and their family, early initiation of rehabilitation can reduce acute health care costs and prevent disability.<sup>2</sup> In addition to the goals of trauma rehabilitation programmes in general (e.g. facilitating recovery of pre-injury health), child-oriented programmes must also actively consider: the physical and psychosocial developmental needs of children, increasing levels of autonomy with regard to care and decision-making as they transition through adolescence; as well as their relationships with families, peers, schools and vocational settings.

For many injured children living with disabilities, assistive devices (e.g. crutches, wheelchairs, prostheses and computer aids) can play a vital role enabling mobility, education and social engagement.<sup>4</sup> Adequate provision of assistive devices usually requires trained professionals such as prosthetic and orthotic technicians, occupational therapists and physical therapists. However, a wheelchair cannot facilitate access to an inaccessible school. Changes are also required in the child's environment if they are to use tech-

nologies effectively (e.g. availability of ramps and accessible toilets).

The 2008 Convention on the Rights of Persons with Disabilities is the first legally binding treaty that reaffirms that all persons with all types of disabilities must enjoy all human rights and fundamental freedoms.<sup>5</sup> The Convention underscores the need for interdisciplinary collaborative efforts at local, national and global levels to enhance the quality of life of children with disabilities, promote their rights and protect their dignity.

It is estimated, however, that only 3% of individuals who need rehabilitation, globally, receive any kind of support,<sup>6</sup> the reasons for this include inadequate primary care, a lack of trained personnel, prohibitive costs, limited availability of transport and difficulties in accessing health-related rehabilitation. A study undertaken in Ghana, India, Mexico and Viet Nam found that human resources for rehabilitation were less-developed than for acute care, with specialized services such as speech pathology virtually absent while physiotherapy services were more likely to be available.<sup>7</sup> Donated or mass-produced assistive devices can pose particular difficulties as they are often not child-sized, customized or provided with appropriate support services.

Rehabilitation services for children may be funded through a variety of sources including government budgets, health and social insurance, external funding, private sources, including nongovernmental arrangements, and out-of-pocket payments. Of the 114 countries providing data to the global survey on government action in 2005,<sup>8</sup> only 73 countries (64%) allocated budgets for rehabilitation services. In 66 (58%) of countries surveyed, no government funding was allocated to make the physical environment accessible to persons with disabilities, and 43 countries (38%) provided no support for children with disabilities with regard to assistive devices and support

services. In a representative national survey in India, two-thirds of recipients of assistive devices paid for their devices themselves.<sup>9</sup> Third payer and insurance schemes in high-income countries can also influence the type, amount and extent of rehabilitation services for injured children.<sup>3</sup>

In the context of these constraints and unmet needs, some promising strategies designed to maximize the availability and outreach of rehabilitation services have emerged. These include more flexible and community-based services (e.g. home and school-based programmes), and training of primary health care workers, family members or community rehabilitation workers in core elements of rehabilitation. Community-based rehabilitation aims to utilize resources available in the prevailing social context while motivating communities to work with persons with disabilities to identify and remove barriers to participation and inclusion.<sup>10</sup> Rehabilitation professionals in several south east European countries are collaborating with associations of persons with disabilities to develop alternative rehabilitation services based on holistic and individualized approaches.<sup>11</sup>

WHO is currently implementing its *Disability and rehabilitation action plan 2006–2011*, which provides the impetus to bring about change in key areas including strengthening community-based and medical rehabilitation (and access to it), improving data collection and supporting policy development in accordance with the principles of the Convention on the Rights of Persons with Disabilities.<sup>12</sup> While much remains to be learned about the effectiveness of these approaches, they signal the potential to actualize the full and meaningful participation of young people who experience disability following an injury. ■

### References

Available at: <http://www.who.int/bulletin/volumes/87/5/09-057067/en/index.html>

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## References

1. *World report on child injury prevention*. Geneva: World Health Organization and UNICEF; 2008.
2. Stucki G, et al. Rationale and principles of early rehabilitation care after an acute injury or illness. *Disabil Rehabil* 2005;27:353-9. PMID:16040536 doi:10.1080/09638280400014105
3. Osberg JS, Kahn P, Rowe K, Brooke MM. Pediatric trauma: impact on work and family finances. *Pediatrics* 1996;98:890-7. PMID:8909482
4. Henderson S, et al. Assistive devices for children with functional impairments: impact on child and caregiver function. *Dev Med Child Neurol* 2008;50:89-98. PMID:18177410
5. Convention on the Rights of Persons with Disabilities. New York, NY: United Nations; 2006. Available from: <http://www.un.org/disabilities/default.asp?id=259> [accessed on 3 April 2009].
6. Helander E. Guest editorial: 25 years of community-based rehabilitation. *Asia Pacific Disability Rehabilitation Journal*. 2000;11:4-9.
7. Mock C, et al. Evaluation of trauma care capabilities in four countries using the WHO-IATSI Guidelines for Essential Trauma Care. *World J Surg* 2006;30:946-56. PMID:16736320 doi:10.1007/s00268-005-0768-4
8. South-North Centre for Dialogue and Development. *Global survey of government actions on the implementation of the standard rules of the equalisation of opportunities for persons with disabilities*. Amman: Office of the UN Special Rapporteur on Disabilities; 2006.
9. O'Keefe P. *People with disabilities from India: from commitments to outcomes*. Human Development Unit, South East Asia Region, The World Bank; 2007. pp. 157.
10. *CBR: a strategy for rehabilitation, equalization of opportunities, poverty reduction and social inclusion of people with disabilities* [joint position paper]. Geneva: International Labour Organization; 1995. pp. 2-19.
11. Axelsson C, et al. *Beyond de-institutionalisation: the unsteady transition towards an enabling system in south east Europe*. Belgrade: Handicap International Regional Office for South East Europe; 2004. Available from: <http://www.disabilitymonitor-see.org/documents/DMR.pdf> [accessed on 3 April 2009].
12. *Disability and rehabilitation action plan 2006-2011*. Geneva: World Health Organization. Available from: [http://www.who.int/disabilities/publications/dar\\_action\\_plan\\_2006to2011.pdf](http://www.who.int/disabilities/publications/dar_action_plan_2006to2011.pdf) [accessed on 3 April 2009].