



WORLD HEALTH ORGANIZATION GLOBAL DISABILITY ACTION PLAN: THE MONGOLIAN PERSPECTIVE

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Objective: To provide an update on disability and rehabilitation in Mongolia, and to identify potential barriers and facilitators for implementation of the World Health Organization (WHO) Global Disability Action Plan (GDAP).

Methods: A 4-member rehabilitation team from the Royal Melbourne Hospital conducted an intensive 6-day workshop at the Mongolian National University of Medical Sciences, for local healthcare professionals ($n = 77$) from medical rehabilitation facilities (urban/rural, public/private) and non-governmental organizations. A modified Delphi method (interactive sessions, consensus agreement) identified challenges for rehabilitation service provision and disability education and attitudes, using GDAP objectives.

Results: The GDAP summary actions were considered useful for clinicians, policy-makers, government and persons with disabilities. The main challenges identified were: limited knowledge of disability services and rehabilitation within healthcare sectors; lack of coordination between sectors; geo-topographical issues; limited skilled workforces; lack of disability data, guidelines and accreditation standards; poor legislation and political commitment. The facilitators were: strong leadership; advocacy of disability-inclusive development; investment in local infrastructure/human resources; opportunities for coordination and partnerships between the healthcare sector and other stakeholders; research opportunities; and dissemination of information.

Conclusion: Disability and rehabilitation is an emerging priority in Mongolia to address the rights and needs of persons with disabilities. The GDAP provides guidance to facilitate access and strengthen rehabilitation services.

Key words: disability; rehabilitation; Mongolia; World Health Organization.

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An estimated 1 billion people worldwide have a disability, with approximately 80% living in

low-income developing countries (1). In 2006, The United Nations (UN) General Assembly adopted the Convention on Rights of Persons with Disabilities (CRPD) to highlight disability as a human experience that occurs as an interaction of a person with a health condition or impairment with his or her environment (2). The CRPD encourages all member states to adopt appropriate measures to eliminate discrimination and poverty, and to improve health and education of persons with disabilities (PwD) (1, 2), and has identified rehabilitation as a care process to support physical independence, mental, social and vocational ability (Article 26) (1). In 2011, the World Health Organization (WHO) World Report on Disability (WRD) supported implementation of the CRPD and provided comprehensive information on disability with special emphasis on rehabilitation (1). It highlighted inadequacy in resources and inequalities in access to care for PwD, especially in low-income countries (3–5). Other reports conducted in different countries (3, 5–7) outline a lack of disability-inclusive policies and standards, negative attitudes/discrimination, limited provision of services and/or service delivery, inadequate funding, and limited research data.

The WHO Global Disability Action Plan 2014–2021 (GDAP): Better Health for All People with Disability (6) provides a list of specific actions and metrics of success to achieve the 3 main objectives listed in Box 1. These include: a human rights-based approach (empowerment of PwD); life-course approach (continuum of care); universal health coverage; a culturally-appropriate person-centred approach; multi-sectoral, community-based rehabilitation (CBR); and universal design (6).

The main objectives of the GDAP are shown in Box 1.

Box 1. Objectives of the WHO Global Disability Action Plan (GDAP) 2014–2021: Better Health for All People With Disabilities (6)

1. Remove barriers and improve access to health services and programmes
2. Strengthen and extend rehabilitation, habilitation, assistive technology, assistance and support services, and community-based rehabilitation
3. Strengthen collection of relevant and internationally comparable data on disability and support research on disability and related services

MONGOLIA

Mongolia is a large central-Asian country, bordering with the People's Republic of China on the south-east, Russia in the north and Kazakhstan on the west. It occupies a total area of 1.56 million km² (world's 19th-largest country) divided into 21 provinces (aimags), which are further divided into 329 districts (soums) (7). Mongolia is sparsely populated, with only 3 million people (2015), (population density 1.8 persons/km²) (7). The majority (>71%) live in urban areas, with almost half residing in Ulaanbaatar (8). There are significant disparities amongst the aimags/soums in terms of healthcare capacity, infrastructure and level of governance. The population median age is 27 years (approximately 27% are aged ≤15 years) and life expectancy at birth is 68.9 years (9). In 2015, Mongolia had one of the highest literacy rates (>98%) in the world (for adults aged >15 years).

Mongolia has experienced positive economic growth since its political transition to democracy (in the early 1990s), and since 2004 there has been significant growth in gross domestic product (GDP), with GDP per capita (PPP) of US\$2,107 in 2007 (10). The World Bank income classification categorizes Mongolia as a low-middle income country, rated 114 out of 182 on the Human Development Index (HDI), according to the UNDP Human Development Report (2007) (11). Mongolia's Human Development Index (HDI) increased by 1.02% annually from 0.676 to 0.727 between 2000 and 2007 (11). Mining and agriculture (mainly livestock husbandry) remain the major economic resources. Despite positive trends in economic growth, there is disparity between rural and urban areas (7); many rural people reside in traditional Mongolian tents (gers), and 27.4% of the population lives below the poverty line (WHO 2012) (12). The Mongolian government spends 6.3% of GDP on healthcare (total expenditure on health per capita of US\$345 in 2012) (10). Similar to other developing countries, considerable effort has gone into improving the acute-care sector, while post-acute care (including rehabilitation) is a lesser priority at many levels. Overall, key determinants of poor health include: illiteracy, unemployment, gender inequality, and rapid urbanization (8, 13).

Despite the introduction of various disability-inclusive policies in many developing countries, PwD continue to have difficulty exercising their civil and political rights, and accessing education and employment (14). Mongolia is not an exception in this context. Although the GDAP is a step forward in provision of rehabilitation services to PwD, providing the opportunity to strengthen and extend rehabilitation,

it can be challenging for the Physical Medicine and Rehabilitation (PM&R) community, as it sets high standards and requires evidence-based rehabilitative care (15). Previous studies (14, 16) report challenges in successful implementation of the GDAP and in setting priorities based on the action plan in countries such as Madagascar (14) and Pakistan (16).

This cross-sectional study provides an overview of the current PM&R effort in Mongolia (based on literature review and interactive feedback from various service providers) compiled during an organized workshop programme to document the challenges and strengths within the existing healthcare system, corresponding with the established objectives listed in the GDAP.

METHODS

The visiting team (FK, BA, GA, MG) were invited by the Mongolian National University of Medical Sciences (MNUMS) and local PM&R society as independent experts (June 2016) to run a 6-day intensive teaching programme in association with the University General Hospital, Ulaanbaatar, Mongolia. Within the programme, a 1-day workshop concentrated solely on utilizing the GDAP framework to identify barriers and facilitators, and the remaining sessions focused on educating participants, building workforce capacity, and developing rehabilitation standards and operational set-up for PM&R services within Mongolia. This exercise was approved by the MNUMS and the Royal Melbourne Hospital.

Participants and procedure

The training programme at the MNUMS was attended by 77 healthcare professionals from various medical rehabilitation centres across Mongolia (including rural areas and private sector). These included: 55 rehabilitation physicians, 6 neurologists, 6 physiotherapists, 5 nurses and 5 resident medical doctors. Input was also obtained from 2 social workers and one clinical psychologist. All participants were invited by MNUMS and comprised approximately 80% of the existing Mongolian workforce (of the 200 original PM&R members listed, many are general physicians, retired and/or were unavailable). In addition, the visiting team met with independent professionals from non-governmental organizations (NGOs) working in Mongolia (mainly South Korea and Japan).

Over a 6-day period, the visiting team (FK, BA, GA, MG) assumed a facilitator role in conducting an intensive teaching programme, including a 1-day consensus workshop based on the objectives listed in the GDAP. During the programme, the visiting team summarized the GDAP, and evidence in the field of rehabilitation in various plenary and interactive panel sessions. These included: basic principles of rehabilitation, evidence-based practice and research methods, disability care planning, capacity building, leadership skills development, rehabilitation nursing, symptomatic management (spasticity, pain, wound care, etc.) and others. The "host" hospital lead medical team provided information about the health service and system in Mongolia, including specific challenges faced by PM&R professionals. All information was supplemented

with more specific and recorded data during the workshop. During the workshop, participants were divided into 3 panels to ensure that various health professionals were as evenly distributed as possible. Each panel focused specifically on 1 of 3 GDAP objectives. All participants completed a form outlining an overview of the GDAP, with blank corresponding columns for responses. Based on their experiences and issues faced in service delivery, participants in each panel discussed their views and perspectives of various challenges and recorded specific barriers/problems relating to: service provision, attitudes/approaches to PwD, service delivery, education, etc., in line with the GDAP. Participants also listed potential facilitators for the GDAP objectives. At all times the GDAP was used as a blueprint for discussion and allowed the visiting team to educate the audience (mainly junior doctors, nurses and some allied health professionals), many of whom were not familiar with the GDAP document.

In order to gather collective participant opinion, a modified Delphi-consensus method was used. This involved a presentation by 2 speakers from each group, on behalf of their designated panel, followed by a face-to-face large-group discussion in order to brainstorm additional and emerging issues, and to avoid the dominance of some participants that can occur in nominal group consensus methods. At the end, a formal iterative decision-making and consensus process (with $\geq 80\%$ of participants agreeing) was conducted, tabulating potential challenges and facilitators in implementation of the GDAP.

Data collection and analysis

Throughout the workshop, participants submitted their responses in writing for each GDAP objective. They were encouraged to document any emerging issues and present these in the large-group interactive session. The facilitators recorded additional information, comments and recommendations provided by the participants, where possible. All data were collated using the content analytical technique (17). Two authors (FA, BA) scrutinized each response and coded the information using a line-by-line process, which was further clustered into a common suggested “term”. When there was no consensus about the possible “term”, a final consensus was made through discussion amongst all authors. All authors discussed the final content analysis and reviewed the preliminary version of terms for refinement.

In addition, a desktop literature search (academic and grey literature using available medical and health science electronic databases (PubMed, EMBASE, CINAHL, AMED, LILACS and the Cochrane Library), internet search engines (such as System for Information on Grey Literature in Europe; New York Academy of Medicine Grey Literature Collection, National Quality Measures Clearinghouse, and Google Scholar)) and various governmental and non-governmental organizations websites) was conducted for relevant publications (including academic articles, reports, related website contents, etc.) for current status on disability and rehabilitation in Mongolia. All relevant information was discussed with participants in this context. Known experts in this field were contacted for further information on disability-related policies and legislation in Mongolia.

RESULTS

Based on the aforementioned multi-pronged approach to obtaining data, the results are summarized in 2

sections below: (i) an overview of current disability and PM&R status in Mongolia; and (ii) findings from the interactive and consensus session with regards to GDAP implementation.

Disability status in Mongolia

Disability burden. Despite growing awareness of disability in Mongolia, accurate epidemiological data on disability and disability-related burden is lacking. According to the Mongolian *Law on the Social Protection of Persons with Disabilities*, PwD are defined as “those persons with limited physical or mental abilities, either genetically inherited or acquired during life, persons born with deformations or disability caused by illness or accident which limits full ability to work, mute persons or person officially diagnosed with sight, hearing, or body or mental disabilities” (7, 18). Based on the Economic and Social Commission for Asia and the Pacific (ESCAP) Disability Survey 2015, the disability-prevalence rate in Mongolia is 3.9% (108,071 persons) (18). Of these, majority have a physical disability (29%), 19% mental/intellectual, 15% visual, 12% hearing, and 6% speech-related disability (18). The majority of PwD (52%) are aged >40 years (18). However, based on the *World Report on Disability* disability prevalence rate estimation of 15% (or 1 in 7 people) (1), there are an estimated 450,000 PwD in Mongolia. There are no current employment data for PwD. However, according to the Ministry of Social Welfare and Labour (2001), of the 39,700 PwD categorized as persons able to work, only 13% (5,200) were employed and an estimated 88% were living below the poverty line (7). More recent data show that 80% of PwD aged >15 years are unemployed (19). Furthermore, PwD are 4 times as likely to be employed in the informal sector (7, 18). The level of education of the PwD population is lower than that of the total population, with almost 22% of PwD aged over 10 years being uneducated (19).

Similar to other developing countries, Mongolia is experiencing a transition in disease burden, from communicable diseases to chronic and non-communicable diseases (NCDs) (8). The prevalence of disability in Mongolia is escalating due to an ageing population, and an increase in chronic conditions, and injuries (8, 9, 20). In 2010, the top 3 causes of overall disability-adjusted life years (DALYs) in Mongolia were: ischaemic heart disease (IHD), lower respiratory infections, and cerebrovascular disease (9, 21). The leading 5 causes of “years lived with disability” (YLDs) were: major depressive disorder, low back pain, alcohol use disorders, neck pain, and other musculoskeletal disorders (22). Diseases of the circulatory system,

neoplasm and injury, poisoning and others accounted for 73.3% of all deaths in Mongolia (8). Leading causes of death included: IHD (>4,000 deaths in 2012), and cerebrovascular diseases (stroke) with over 3,000 deaths (9). These conditions contribute to significant economic and social costs for PwD, their families, and the community (13, 20, 22).

Disability policies and legislation. In the last 2 decades, Mongolia has made steady progress in improving the health of its population, through support from several international and national partners. The Ministry of Health is responsible for formulating and monitoring health policies and programmes (8), while the Ministry of Social Welfare and Labour implements state policy for vulnerable groups including PwD (7). Other national government agencies (such as the National Centre for Health Development, National Public Health Institute, National Maternal and Child Health Center) and health institutions play a significant role in implementing health policy and programmes (7, 8, 23). Other government organizations (Mongolian National Coordination Committee on Disabilities, Poverty Alleviation Fund Council, the Local Development Fund and the Employment Promotion Fund) support disabled job-seekers and employees (7). Furthermore, many local and international NGOs contribute to implementation of health service delivery at various levels.

The Mongolian government embraced the issue of disability as a priority and in the first democratic Mongolian Constitution (1992), acknowledged equal rights for all citizens (7). The *Health Law* (1998, 2006, 2011) signifies the right to primary and maternal healthcare, and public health services to all citizens regardless of socio-economic status and health insurance coverage (7, 20). The first *Mongolian Social Security Law for People with Disabilities* (1995, 1998) adopted the *Law on Social Protection of People with Disabilities* (2005) (7) for social assistance and benefits for PwD in Mongolia. The *Social Security Law* includes: provision of identification cards, clearly defined government agencies and type of support for individuals, rehabilitation and after-care, employment, recreation and social services for PwD (7).

Mongolia became a signatory to the *Proclamation on the Full Participation and Equality of People with Disabilities in the Asian and Pacific Region* in 2001 (7), and in 2009 ratified the UN CRPD (18). The government established the Health Insurance Fund in 1994, funded by compulsory contribution of 4% of income in the formally employed sector and a flat contribution rate for herdsmen, students and the self-employed. This

scheme, however, does not include rehabilitation and has challenges in the informal sector.

Healthcare service delivery. In the 1990s, the Mongolian health system transitioned from the centralized Semashko model (inherited from the former Soviet Union) to a more decentralized model. Unfortunately, the move towards decentralization has seen more administrative than financial success (19). Currently, the Mongolian health system is a single statutory system divided in principle according to 2 main administrative divisions: aimags and the capital city. Aimags are divided into soums, and soums into baghs. The health system delivery is based on a 3-tier model that provides health services at primary, secondary and tertiary levels, with varying complexity and advancement (13, 20). Mongolia has more than twice the mean number of hospitals than that of other similar transition countries in Europe. It has a higher number of beds, at 68.1 per 10,000 population (2011) (10). Although the majority of health services are delivered by the public sector, the number of private healthcare providers (hospitals and clinics) has increased significantly in last decade (almost doubled from 683 in 2005 to 1184 in 2011) (20). The majority of these, however, are small hospitals with 10–20 beds and outpatient clinics (20).

The National Rehabilitation Center (established in 1999), consists of 4 different departments, and has been the main organization in the field of vocational and medical rehabilitation for PwD (24). The community-based rehabilitation (CBR) programmes are generally funded by an Italian NGO, the Associazione Italiana Amici di Raoul Follereau (AIFO) and implemented by the Community Development Department (24, 25). The CBR programme covers 18 aimags and 8 soums, and is planned to extend to all aimags throughout the country by 2018 (24). Many inclusive education training support programmes for PwD (their families) have been organized (24).

Healthcare human resources. In general, Mongolia has well-developed healthcare infrastructure and human resources (13, 20). Although Mongolia has a large number of health workers, most are concentrated in urban areas. In 2010, the number of doctors working in Ulaanbaatar was 3.94 per 1,000 population while, in aimags, almost half of this number (1.85 per 1,000 population) (13). In 2011, there were an estimated 3.4 primary healthcare doctors per 10,000 population working in soums and family health centres, and 1,677 doctors working in 1,184 private health facilities. In rural areas and villages, care for nomadic herdsmen,

families and communities is provided by bagh feldshers, trained mid-level health personnel paid by the soum health centres (20). In 2011, there were 1,058 bagh feldshers working at soum health centres and soum hospitals (20).

Rehabilitation medicine is an emerging field in Mongolia. There are no definite official data on the PM&R specialist workforce. However, there are over 200 rehabilitation physicians and over 100 physiotherapists (PTs) registered in the Mongolian Society of PM&R (established in 2005). Since 2000, MNUMS commenced a postgraduate residency-training programme in the Department of PM&R, and each year approximately 8–12 medical doctors graduate as rehabilitation physicians (26). There are PM&R departments in every major hospital, but almost all provide consultancy and ambulatory care (not inpatient care), and work conjointly with traditional medicine. The number of traditional medicine doctors has increased dramatically since 1990 following recognition by the Mongolian government and currently make up 10–15% of all medical graduates (20).

Interactive workshop on the Global Disability Action Plan

All participants ($n=77$) contributed actively to the group discussion and consensus method. Most were newly trained rehabilitation specialists and many (especially PTs) were not familiar with the GDAP, and had limited knowledge of disability programmes in Mongolia. The participants agreed that the GDAP provides comprehensive summary actions for the government, policymakers, clinicians and PwD. The participants provided multiple responses (in writing) across each GDAP objective. Overall, for GDAP objective 1, participants indicated 42 potential challenges/barriers and 31 potential facilitators/enablers; for objective 2: 51 challenges/barriers and 44 facilitators/enablers; and for objective 3: 20 challenges/barriers and 18 facilitators/enablers. A number of common suggested “terms” were coded, based on participants’ feedback and consensus agreement. There was significant overlap with regards to the terms amongst the 3 GDAP objectives. Hence, the final set of “terms” was formulated collating all “terms”, which included 38 potential challenges/barriers and 36 potential facilitators/enablers. The final set of potential facilitators and challenges in implementation of the proposed standard actions in the GDAP for rehabilitation are summarized in Table I.

DISCUSSION

This paper presents narrative findings on disability and PM&R status, and outlines potential barriers and facilitators for implementation of the GDAP from the Mongolian perspective. Mongolia has a multi-tiered and mixed-healthcare delivery system. Consistent with the worldwide pattern of population health transition, Mongolia is already in a stage of epidemiological transition from communicable diseases to the NCDs, due to the escalating prevalence of NCDs, which account for a predominant share of morbidity and mortality (9, 21, 27). The Mongolian government has prioritized disability and rehabilitation as one of its key agendas. The level of funding, human resources and health infrastructure specifically are well developed in urban areas, but are not optimal in rural areas (23). Since 1990, healthcare facilities and programmes have grown exponentially in most areas of Mongolia (11). However, the system still emphasizes provision of healthcare through hospitals, resulting in a fragmented and inefficient hospital sector providing generally low-quality care (23). This is further compounded by poorly developed primary healthcare sector, financing systems, human resources and planning, and regulatory processes (23). In line with this, many medical specialties, including PM&R are yet to develop at the optimum level. Although there is a PM&R department in many major hospitals, many health professionals work in silos, and most programmes are conjoint with and/or subjugated by traditional medicine. The rehabilitation service provision at the national level is fairly disjointed within capital and aimags health departments, NGOs and the private sector, providing services mostly through vertically-managed disease-specific mechanisms (13, 20, 23). Many physicians, particularly PM&R specialists, international NGOs (INGOs) and NGOs working in the field of disability management have little coordination. Furthermore, discernible urban-rural disparities in healthcare delivery and an imbalance in the health workforce compound the overall healthcare system (20). Similar to many developing countries, Mongolia has limited research and data on disability, impeding formulation of country-specific policies and programmes.

Since the establishment of the National Rehabilitation Center (1999), and the postgraduate resident training programme for PM&R at MNUMS (in 2000), the profile of rehabilitation medicine has improved, but remains under-developed (especially in rural set-

Table I. Potential challenges and facilitators in implementation of the World Health Organization (WHO) Global Disability Action Plan 2014–2021 in Mongolia (*n*=77)

Potential challenges/barriers	Potential facilitators/enablers in the next 5–6 years
<ul style="list-style-type: none"> • Lack of strong leadership, need for a central body for developing governance • Health priority more driven towards acute sector and communicable disease • Limited commitment from the government, limited funding or under-funded programmes • Inadequate investment for health sector and financial support for HCPs • Poor coordination/collaboration among different government sectors and ministries • Limited coordination/collaboration among different healthcare sectors [hospitals (private and public), primary, community, INGOs and NGOs] • Lag in implementation of health policies • Inclusion of traditional medicine with rehabilitation (traditional medicine prioritized) • Poor education/knowledge about disability/rehabilitation amongst policy-makers, government authorities, etc. • Legislation policy for employment/education/health for PwD not enforced • Scarcity of disability-related data (inaccurate data; under-estimation and under-representation of disability prevalence, cost data, etc.) • Lack of specific regulation (job description) for specific healthcare professionals (such as allied health professionals) • Lack of processes to involve all stakeholders (including PM&R professionals) in policy development • Few specific disability-rehabilitation standards or key performance indicators (not up to date) • Limited leadership development programmes and professional development programmes for HCPs • Poor provision of infrastructure, accessibility in public places and transport for PwD • Limited specialized PM&R centres, such as for stroke, spinal cord injuries, etc. • Lack of multidisciplinary team approach and systems/models of care • Rehabilitation services not well integrated with acute services and lack of inpatient rehabilitation facilities • Limited numbers of community healthcare facilities and disability services, particularly in rural areas for PwD • Lack of structured standard referral systems from acute to sub-acute care and to community • Maldistribution of human resources (HCPs more centralized in capital and urban areas) and demoralized workforce • Poor awareness, misconception and cultural belief about disability • Belief in traditional medicine amongst general public and health practitioners • Limited number of adequate primary care services • Lack of continuum of care • Lack of emergency assistance programmes for PwD • Lack of evidence-base guidelines/protocols and disability centred measures and tools • Lack of undergraduate courses in rehabilitation in medical institutions and limited professional courses/training programmes in academic institution • No staff development or appraisal systems in hospitals or community settings • Limited access to education or web-based learning, professional development, training in new innovations and therapy • Poor awareness amongst healthcare professionals about disability and PM&R • Minimal integration of community-based programmes with acute services • Lack of family/carer education and limited provision of inclusion of caregivers of PwD and/or PwD in care programmes, decision-making • Minimal information available to public about access to rehabilitation services • Rehabilitation workforce minimally trained in research methodology including data collection; research not identified as a priority • Limited funding for research and lack of awards or recognition for research work • Limited staff capacity, training support, guidance and/or mentorship and facilities available for research 	<ul style="list-style-type: none"> • Establishment of legislative and central capacity building body • Education/awareness programmes about disability and PM&R for policy-makers, government authorities, hospital administrators • Inclusion of HCPs including rehabilitation physicians in policy development • Strengthening management capacity, public-private partnerships • Establishment of healthcare standards/policies and implementation and evaluation • Development of Key Performance Indicators, Standards of Care and accreditation criteria for rehabilitation facilities and staff by the Ministry of Health • Coordination and communication between governmental bodies, healthcare sectors, various INGOs/NGOs and community organizations • More active role of PM&R departments in facilitating leadership skills and governance • International cooperation and support for PM&R development and training • Development of evidence-based guidelines/protocols and outcome measures for disability and rehabilitation • Development of Continuous Medical Education (CME) programmes for HCPs, skill training and educational programmes (national/international) • Increased health budget expenditure for disability and PM&R • Development of standard data collection systems (training ICF) • Training and educational programme for PwD, families and carers of PwD • Improvement of social welfare, livelihood and benefits for PwD • Development of new rehabilitation infrastructure and re-evaluation of existing services • Development of standard referral systems • Promotion of CBR • Development of inpatient rehabilitation units, and specialized rehabilitation facilities (including in remote areas) • Development of telerehabilitation • Public awareness and educational programmes • New medical equipment and technology supportive to the local needs (including in rural areas) • Development of consumer organizations (including PwD at national and local level) • Initiatives/programmes and funding for development of allied health professionals • Development of vocational rehabilitation programme (jobs, education etc.) for PwD • More active role of national society of PM&R • Development of innovative teaching models, using interactive problem-based learning and clinical capacity through organized educational activities • Collaboration with international partners for staff education/training • More CBR services linked with main hospital networks and through inclusion of carers, PwD in decision-making processes • Adequate financial support and advocacy for assistive devices and technology and expansion to rural areas • Development of Mobile Rehabilitation Units to deliver care in remote areas • Build research capacity in rehabilitation by training and educating medical staff in research methodologies • Development of research, data collection methods/measurement tools in disability and rehabilitation • Involvement of government and academic institutions to establish national research centre/foundation • Collaboration with international partners in research and development • International aid/assistance in research capacity building

CBR: community-based rehabilitation; HCP: healthcare professionals; ICF: International Classification of Functioning, Disability and Health; INGO: international non-governmental organization; IT: information technology; NGO: non-governmental organization; PM&R: physical medicine and rehabilitation; PwD: persons with disabilities; WHO: World Health Organization.

tings) and poorly integrated with the acute healthcare systems. There are limited inpatient rehabilitation facilities (most offer ambulatory programmes), and limited specialized rehabilitation facilities (e.g. spinal or acquired brain injury rehabilitation units). The funding for comprehensive disability management and rehabilitation is not optimal and is not always covered by the Mongolian Health Insurance systems. There is lack of other allied healthcare professionals, such as occupational therapists, speech therapists, prosthetics, etc. There is minimal awareness regarding rehabilitation medicine amongst the public as well as general healthcare professionals, and it is often confused with traditional medicine. Other barriers include: lack of modern equipment (therapeutic and diagnostic), limited training and professional development prospects, and limited health services infrastructure and human resources in rehabilitation. The healthcare system itself at the national, provincial and district levels is still patchy. At the community level, care of PwD (including CBR) is predominantly funded by NGOs and charitable organizations (25).

The GDAP provides comprehensive summary actions for disability and offers the Mongolian government, policymakers and other relevant stakeholders a blueprint for implementing the recommendations of the World Disability Report. The Mongolian health sector now has the opportunity to improve and build on existing programmes, and develop more comprehensive and innovative programmes for long-term care of PwD. A modified Delphi method in this study allowed all participants to contribute their opinion on potential barriers/challenges for successful implementation of the GDAP. Participant feedback was positive, and most were satisfied with the overall consensus process. Multidisciplinary input within the group was beneficial, and the group was fairly diverse in their areas of expertise and range of views. The group heterogeneity was reflected in the widespread range of terms and potential issues that emerged. Group discussion and a consensus round served to remove duplicate or similar terms/issues and formulate the final set of barriers and facilitators.

There is a strong impetus to improve the disability and rehabilitation sector in Mongolia. The key issues from participants' feedback reflected the need for a centralized leadership for provision of standards for rehabilitative care and key performance indicators for rehabilitation, up-skilling the workforce, developing infrastructure and support systems, access to new equipment for therapy and integration of all relevant sectors (including NGOs and consumer groups). There is opportunity for PM&R professionals, consumer organizations and NGOs to come together not only

for improving clinical practice and service delivery, training, education and research; but also for coordinated and pro-active lobbying to prioritize challenges that need to be addressed for successful implementation of the GDAP.

Some limitations in this study cannot be ruled out. This is a cross-sectional study and did not intend to test specific hypotheses through systematic analysis. Content analytical technique summarized data derived from the interactive feedback from participants attending an organized workshop programme. This study was intended as a preliminary descriptive study, with the aim of summarizing disability and rehabilitation efforts in Mongolia based on the GDAP, and to identify barriers/challenges and facilitators from the perspective of participants for the implementation of this action plan. The study cohort of health professionals were invited by MNUMS and did not include other stakeholders (such as governmental, social work organizations, organizations of PwD), which may limit the generalizability and validity of these findings. However, the study cohort included PM&R professionals from a wide geographical population in Mongolia, and was representative of the wider sample currently operational in the community both in urban and rural areas. The visiting team was not involved in participant selection, as this was beyond their authority. The team contacted some NGOs and a few family members of PwD to include their viewpoint. The authors believe the findings reflect the current issues/problems faced by the PM&R workforce in Mongolia at large. They are unaware of any similar study in Mongolia addressing such issues.

Mongolia has made good progress in building its national health capacity for the acute healthcare sector, public health emergency preparedness, and infection prevention and control (11). However, there is a critical need to build the system, integrating and linking other emerging capacities, like PM&R. Effective delivery of healthcare services, including rehabilitation, especially in rural areas, is challenging due to the sparse and scattered distribution of the population, long distances and nomadic lifestyles (mainly in rural areas) (13, 20). Other potential problems for implementation of the GDAP include repeated restructuring of the health system, poor financial support for education and health sectors, rising unemployment and rapid urbanization. The needs of PwD can easily be overlooked in the current environment.

In summary, like many developing countries, the rights and healthcare needs of PwD in Mongolia have many barriers to their inclusion in key aspects of society. There were many similarities in the barriers identified in consensus exercises in both Madagascar

and Pakistan PM&R (14, 16) to those of their Mongolian counterparts. Many PwD remain marginalized and their capabilities underestimated. Despite strong commitment from government for disability-inclusive and sustainable development programmes, there remains a gap between policy and practice. The key issues raised by the participants are listed below.

- Leadership from the Ministry of Health (and other governmental authorities) for development of PM&R standards, accreditation and key performance indicators.
- Evidence-based models of care.
- Organized integrated healthcare systems (patient referrals, continuum of care after discharge, CBR, etc.).
- Integration of PM&R with acute health services and development of inpatient PM&R facilities.
- Tailoring the GDAP recommendations to suit the local environment for accessibility to mainstream services.
- Development of systematic data collection methods for disability (such as a national disability registry).
- Improving infrastructure for disabled access for transport and buildings and social support systems.
- Upskilling, educating and developing the PM&R workforce using innovation, technology/web-based systems.
- Promoting awareness of disability and rehabilitation needs.
- Investment in research and (national and international) collaboration.

In conclusion, the role of PM&R in the Mongolian healthcare system is expanding to address the rights and needs of the growing numbers of PwD. All PM&R participants stressed the need to empower PwD for active participation in society and development. The interactive consensus method using the GDAP as a tool was useful to gather information, improve access and to strengthen PM&R services in Mongolia.

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REFERENCES

1. World Health Organization. World report on disability. Geneva: WHO; 2011.
2. United Nations. Convention on the Rights of Persons with Disabilities. 2006 [cited 2016 Jul 1]. Available from: <http://www2.ohchr.org/english/law/disabilities-convention.htm>.
3. Rathore FA, New PW, Iftikhar A. A report on disability and rehabilitation medicine in Pakistan: Past, present, and future directions. *Arch Phys Med Rehabil* 2011; 92: 161–166.
4. Shrivastava SR, Shrivastava PS, Ramasamy JD. Reduction in global burden of stroke in underserved areas. *J Neurosci Rural Pract* 2013; 4: 475–476.
5. Khan F, Amatya B, Mannan H, Rathore FA. Neurorehabilitation in developing countries: a way forward. *Phys Med Rehabil Int* 2015; 2: 1070.
6. World Health Organization. WHO global disability action plan 2014–2021: better health for all people with disability. Geneva: WHO; 2014.
7. International Labour Office (IOL). Mongolia country profile. Employment of people with disabilities: the impact of legislation (Asia and the Pacific). Geneva: IOL and Development Cooperation Ireland (DCI); March 2003.
8. World Health Organization (WHO). Country cooperation strategy for Mongolia 2010–2015. Geneva: WHO; 2010.
9. World Health Organization. Mongolia: WHO statistical profile. Geneva: WHO; 2012.
10. Federal Statistical Office of Germany (Destatis). Mongolia: Statistical country profiles. Wiesbaden: Statistisches Bundesamt; 2015.
11. World Health Organization. Country cooperation strategy: Mongolia. Geneva: WHO; May 2014.
12. United Nations Economic and Social Commission for Asia and the Pacific. Statistical Yearbook for Asia and the Pacific 2014. Bangkok: United Nations; 2014.
13. World Health Organization (WHO). Mongolia health system review (Health Systems in Transition, Vol. 3 No. 2). Geneva: Asia Pacific Observatory on Health Systems and Policies, WHO; 2013.
14. Khan F, Amatya B, Mannan H, Burkle FM, Jr, Galea MP. Rehabilitation in Madagascar: challenges in implementing the World Health Organization Disability Action Plan. *J Rehabil Med* 2015; 47: 688–696.
15. Gutenbrunner C, Negrini S, Kiekens C, Zampolini M, Nugraha B. The Global Disability Action Plan 2014–2021 of the World Health Organisation (WHO): a major step towards better health for all people with disabilities. Chance and challenge for Physical and Rehabilitation Medicine (PRM). *Eur J Phys Rehabil Med* 2015; 51: 1–4.
16. Khan F, Amatya B, Sayed TM, Butt AW, Jamil K, Iqbal W, et al. The World Health Organisation – Global Disability Action Plan 2014–2021: challenges and perspectives for physical medicine and rehabilitation in Pakistan. *J Rehabil Med* 2017; 49: 10–21.
17. Hsieh HF, Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res* 2005; 15: 1277–1288.
18. United Nations Economic and Social Commission for Asia and the Pacific. Disability at a Glance 2015: strengthening employment prospects for persons with disabilities in Asia and the Pacific. Bangkok: ESCAP; 2015.
19. Ministry of Population Development and Social Protection of Mongolia; Ministry of Health of Mongolia. Make the right real workshop in Mongolia. Ulaanbaatar: Government of Mongolia; 26 March 2014.
20. World health Organisation (WHO); Mongolian Ministry of Health. Health service delivery profile: Mongolia. Geneva: WHO; 2012.
21. World Health Organization. Non-communicable diseases country profiles: Mongolia. Geneva: WHO; 2011.

22. Institute for Health Metrics and Evaluation. Global burden of disease (GBD) – Mongolia Seattle: IHME: 2010 [cited 2016 Sep 10]. Available from: <http://www.healthdata.org/mongolia>.
23. Asian Development Bank (ADB). Mongolia: health and social protection. Manila: Operations Evaluation Department, ADB; Oct 2008.
24. Asia-Pacific Development Center on Disability (APDCD). Disability movement in the Asia-Pacific Region. Bangkok: APDCD; 2016 [cited 2016 Sep 12]. Available from: <http://www.apcdfoundation.org/?q=content/disability-movement-asia-pacific-region>.
25. Sharma M, Deepak S. A case study of the community based rehabilitation programme in Mongolia. Bologna: Associazione Italiana Amici di Raoul Follereau (AIFO); 2001 [cited 2016 Sep 12]. Available from: <http://english.aifo.it/disability/apdrj/apdrj102/mongolia.pdf>.
26. Avirmed B, Sh B, Batgerel O. Present status and future prospects of PMR in Mongolia. International Symposium Japan; 2005.
27. Enkh-Oyun T, Kotani K, Davaalkham D, Aoyama Y, Tsuboi S, Oguma T, et al. Ischemic heart disease and its related factors in Mongolia: a nationwide survey. *J Community Health* 2013; 38: 919–925.