Assessment of the National Disability, Health and Rehabilitation System in Ukraine

December 2015
# Assessment of the National Disability, Health and Rehabilitation System in Ukraine

## Table of contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive summary</td>
<td>3</td>
</tr>
<tr>
<td>Comprehensive Report</td>
<td>7</td>
</tr>
<tr>
<td>1. Foreword</td>
<td>7</td>
</tr>
<tr>
<td>2. Introduction</td>
<td>7</td>
</tr>
<tr>
<td>3. Terms of reference</td>
<td>8</td>
</tr>
<tr>
<td>4. Understanding functioning, disability and health</td>
<td>8</td>
</tr>
<tr>
<td>5. Understanding rehabilitation</td>
<td>9</td>
</tr>
<tr>
<td>6. Overview on population, epidemiological data and health system</td>
<td>12</td>
</tr>
<tr>
<td>a) Population</td>
<td></td>
</tr>
<tr>
<td>1) Geo-economical background</td>
<td>12</td>
</tr>
<tr>
<td>2) Country population</td>
<td>12</td>
</tr>
<tr>
<td>b) Causes of morbidity</td>
<td>13</td>
</tr>
<tr>
<td>c) Epidemiological data on injury and chronic conditions</td>
<td>14</td>
</tr>
<tr>
<td>d) Disability rates</td>
<td></td>
</tr>
<tr>
<td>1) Disability assessment method</td>
<td>15</td>
</tr>
<tr>
<td>2) Reported invalidity rates</td>
<td>16</td>
</tr>
<tr>
<td>e) Health care system</td>
<td>17</td>
</tr>
<tr>
<td>f) Health care funding system</td>
<td>20</td>
</tr>
<tr>
<td>g) Existing rehabilitation services</td>
<td>20</td>
</tr>
<tr>
<td>1) Health related rehabilitation services</td>
<td>21</td>
</tr>
<tr>
<td>2) Individual rehabilitation plans for persons with certified invalidity</td>
<td>25</td>
</tr>
<tr>
<td>h) Workforce of Rehabilitation Professionals</td>
<td>26</td>
</tr>
<tr>
<td>i) Rights of people with disabilities</td>
<td>29</td>
</tr>
<tr>
<td>j) Responses to specific challenges</td>
<td>29</td>
</tr>
<tr>
<td>1) Epidemiological consequences of the Chernobyl disaster</td>
<td>29</td>
</tr>
<tr>
<td>2) Social and health consequences of the armed conflict in Donbass</td>
<td>31</td>
</tr>
<tr>
<td>7. Methods and work plan of consultancy</td>
<td>32</td>
</tr>
<tr>
<td>8. Results</td>
<td>34</td>
</tr>
<tr>
<td>9. Recommendations</td>
<td>35</td>
</tr>
<tr>
<td>a) General aspects</td>
<td>35</td>
</tr>
<tr>
<td>b) Implementation of health related rehabilitation services and transition</td>
<td>36</td>
</tr>
<tr>
<td>c) Implementation of a rehabilitation workforce and transition</td>
<td>39</td>
</tr>
<tr>
<td>d) Comprehensive list of recommendations and expected outcomes</td>
<td>41</td>
</tr>
<tr>
<td>10. Projects of model implementation</td>
<td>50</td>
</tr>
<tr>
<td>11. Evaluation strategy</td>
<td>51</td>
</tr>
<tr>
<td>Appendices</td>
<td>52</td>
</tr>
</tbody>
</table>
Executive Summary

I. Background and goals of the mission:
The assessment of the national disability, health and rehabilitation system in Ukraine has been initiated by the WHO Country Office in Ukraine and performed by a Rehabilitation Advisory Team of the International Society of Physical and Rehabilitation Medicine (ISPRM). It is part of the collaboration plan of ISPRM and the WHO Headquarters. The mission is based on the UN-Convention of the Rights of Persons with Disabilities (UN-CRPD) and the World-Report on Disability (WRD). The goal setting is derived from the WHO Global Disability Action Plan 2014-2021 “Better Health for All People with Disabilities”, that has been adopted by the World Health Assembly in 2014.

The need for a national disability, health and rehabilitation plan occurs from a couple of facts:

- The definitions and understanding of “invalidity” does not coincide with the modern and internationally agreed understanding on disability and functioning
- Rehabilitation legislation and policies in Ukraine are fragmented and lack of coordination between Ministries and organizations in charge
- Rehabilitation services traditionally are delivered in health resorts. A comprehensive system of rehabilitation services covering all phases and levels of care is lacking and rehabilitation services are not available for many persons in need
- The rehabilitation workforce does not reach international and European standards. On the one hand this originates from an accreditation system that is completely different and on the other hand it is due to lack of capacity

II. Objectives and methods:
The mission is based on an assessment of the current situation of persons with disabilities and the rehabilitation system (including services and training the rehabilitation workforce), the application of international standards that lead to recommendations to improve the systems. The recommendations are developed by the advisors and discussed with members of the WHO Country Office in Ukraine. Additionally, a stakeholder dialogue about the recommendation was done to achieve a consensus with stakeholders including NGO’s, organizations of people with disabilities and representatives of professional groups.

III. Summary of findings:

- There is a common understanding among ministries and also among clinicians, WHO representatives and NGO’s that the rehabilitation system needs a reform including a better common understanding of disability, a modern structure of the rehabilitation workforce with higher level of training, and an increased capacity or rehabilitation services
- Responsibilities for disability and rehabilitation are split-up in two ministries: The Ministry of Public Health (with responsibility for “medical” or health-related rehabilitation) and the Ministry of Social Policy (with responsibility for social compensation but also for delivery of assistive devices). The Ministry of Science and Education is also involved as it is responsible for the ac-
creditation of training curricula (education programs) for rehabilitation professionals in both medical and non-medical educational facilities. Lack of coordination between rehabilitation services offered by different ministries leads to deficits in outcomes (e.g. delivery of assistive devices)

- The **understanding of disability and rehabilitation in Ukraine** is based on a philosophy and definitions that are not compatible with the international understanding of disability as an interaction of a person with a health condition and the environment. This leads to deficits in disability data collection and planning of rehabilitation services as well as individual disability assessment and goal setting and thus alters rehabilitation outcomes

- The **rehabilitation professionals are not trained according to international standards.** This is obvious as the description of professions as well as the training curricula and accreditation criteria significantly differ from international and European standards. The number of rehabilitation professionals is insufficient too (e.g. low number and too short training of Physical and Rehabilitation Medicine doctors, no uniform concept for physiotherapy, no Occupational (ergo-) Therapy)

- A couple of rehabilitation services exist, however, there is **no systematic plan of rehabilitation services** in acute, post-acute and long-term settings. Some rehabilitation units work in the way as it was implemented in the Soviet Union, and a few modern rehabilitation units have been established. However, these units are only single models that are not representative for overall health care system. This leads to significant deficits for rehabilitation care as well as bed blocking and waste of resources in (acute) hospitals. The delivery of assistive devices separated from health related rehabilitation services also leads to insufficient outcomes and waste of resources

- As specific challenge is the **need for rehabilitation for victims of the armed conflict** in eastern Ukraine. On the one hand there is a high number of wounded soldiers that in many cases also have severe mental trauma (so-called post traumatic stress disorder). The armed conflict also produces wounded and traumatized civilians with need for rehabilitation care.

IV. Actions and projects to improve health, functioning and quality of life for all persons with disability in Ukraine

A. The following actions should be taken in order to improve health, functioning and quality of life for all persons with disability in Ukraine

1. As rehabilitation is one of four main health strategies and at the same time requires services within different sectors of the health system a **strong coordination** within the ministry of Public health (optimally **concentrated within one department**)

2. As rehabilitation also concerns other life areas, such as social support, education, justice etc., a strong **coordination in between ministries** is indispensable (optimally as an **inter-ministerial coordination committee** at high level of responsibility)

3. For disability and rehabilitation policy and legislation as well as for data collection it is crucial to **translate and adapt international definitions** (e.g. functioning, disability) and tools (e.g. ICF-core-sets) into Ukrainian language

4. For mid-term planning of rehabilitation services a sound **data base on the epidemiology of disability (including chronic and mental diseases)** and the need for rehabilitation must be es-
established. It should use international (ICF-based) tools

5. Health related rehabilitation services must be implemented at all levels of health care (primary, secondary, tertiary) and for all phases of health care (acute, post-acute, long-term). As in Ukraine many rehabilitation services already exist, a transition plan should be developed. The primary health care sector needs to take a stronger role in long-term rehabilitation and as an entrance point for specialized rehabilitation services.

6. In order to establish a high-qualified rehabilitation workforce international definitions and curricula of rehabilitation professions (medical doctors, therapists, nurses, social workers, psychotherapists and others) should be implemented (see below) and a new education system should be implemented. Here also, a transition plan is required.

7. In light of the armed conflict in eastern Ukraine, the special needs of persons with disability living in the region as well as the expansion of rehabilitation services for victims should be realized.

B. The following projects should be implemented and stated as soon as possible to develop models to apply the above-mentioned goals

1. Perform an expert workshop (Ukrainian health professionals, NGO’s, WHO CO and Head Quarters, Linguists, Experts from other Slavic speaking countries) to find and agree on an appropriate translation of term “disability”, “functioning”, and other related terms.

2. Perform a project to adapt the ICF for use in Ukraine and testing the products within selected services.

3. Perform a population-based survey of the prevalence on disability with internationally accepted methods in two regions of Ukraine.

4. Implement multi-professional rehabilitation teams in a couple of services and evaluate the outcomes.

5. Implement model rehabilitations services and evaluate outcomes:
   a. Acute rehabilitation services in two hospitals at secondary and tertiary level.
   b. Post-acute rehabilitation service in at least two indications (e.g. stroke, limb amputation, multiple trauma or cardiac surgery) (one of them could integrate existing sanatorium).
   c. Long-term service (e.g. community based service in rural area).

6. Implement model services for:
   a. An integrated delivery and integration of assistive devices in medical rehabilitation programs.
   b. One or two projects of integrated medical and vocational rehabilitation.

7. Develop curricula for rehabilitation professionals according to the “choosing the best” from international models (i.e. development of a curriculum of Physical and Rehabilitation Medicine specialists according to the standards of the European Board of Physical and Rehabilitation Medicine).

8. Immediately organize education and training courses for rehabilitation professionals with international support.

9. Develop a model for an adequate, motivating and fair payment system for rehabilitation ser-
vices and (taking into account international experiences), »pay per case« system which take into account the severity of case is recommended.

10. Perform a survey on existing rehabilitation facilities (number of rehabilitation institutions, departments and beds) based on international standards.

A detailed list of recommendations with expected outcomes and priority actions are included in the report. The report also includes a framework to classify and plan rehabilitation services as well as a list of recommended rehabilitation professions. Last but not least explanations an definitions of functioning and disability as well as rehabilitation are needed.
Comprehensive Report

1. Foreword
The assessment of the national disability, health and rehabilitation system in Ukraine has been initiated by the WHO Country Office in Ukraine and performed by a Rehabilitation Advisory Team of the International Society of Physical and Rehabilitation Medicine (ISPRM). It is part of the collaboration plan of ISPRM and the WHO Headquarters. The mission is based on the UN-Convention of the Rights of Persons with Disabilities (UN-CRPD) and the World-Report on Disability (WRD). The goal setting is derived from the WHO Global Disability Action Plan 2014-2021 “Better Health for All People with Disabilities”, that has been adopted by the World Health Assembly in 2014.

The mission is based on an assessment of the current situation of persons with disabilities and the rehabilitation system (including services and training the rehabilitation workforce), the application of international standards that lead to recommendations to improve the systems. The recommendations are developed by the advisors and discussed with members of the WHO Country Office in Ukraine. Additionally, a stakeholder dialogue about the recommendation was done to achieve a consensus with stakeholders including NGO’s, organizations of people with disabilities and representatives of professional groups.

The need for a national disability, health and rehabilitation plan occurs from a couple of facts:
- The definitions and understanding of “invalidity” does not coincide with the modern and internationally agreed understanding on disability and functioning
- Rehabilitation legislation and policies in Ukraine are fragmented and lack of coordination between Ministries and organizations in charge
- Rehabilitation services traditionally are delivered in health resorts. A comprehensive system of rehabilitation services covering all phases and levels of care is lacking and rehabilitation services are not available for many persons in need
- The rehabilitation workforce does not reach international and European standards. On the on hand this originates from an accreditation system that is completely different and on the other hand it is due to lack of capacity

The report contains of a short overview of the applied principles, an analysis of the epidemiology of disabling health conditions, an analysis of disability and rehabilitation policies as well as existing rehabilitation services and work force and results in recommendations and proposed projects of model implementation.

2. Introduction
The World Report on Disability (WHO & World Bank 2011) showed that 1 billion people experience disability worldwide. It is about 15% of the general population. The prevalence of severe disability is estimated around 200 million persons worldwide. As disability is defined as an interaction of a person with a health condition and the environment, strategies to overcome disability must include both medical (health-related rehabilitation) and social (enabling environments) strategies. On the population and/or societal level, disability can be seen as a human rights issue (UN 2006; Gutenbrunner et al. 2006), a public health issue (WHO 2012), and also a development issue (UN High level meeting
2013). Thus, the World Health Assembly requested the Secretariat to develop an action plan to improve with measurable outcomes (WHA resolution WHA 66.9). This Action Plan entitled “Better health for all people with disability” has been adopted by the WHA in 2014 and includes a number of actions to be taken by the governments of member states.

Rehabilitation is seen as a health strategy to reduce disability at the person level. According to the World Report on Disability, other aspects are Education, Labour, Assistance and Support, and supporting environments. According to the UN-convention of the Rights of Persons with Disabilities (UN 2006) access to habilitation and rehabilitation services are human rights and must be ensured for every person in need. Thus, rehabilitation can be seen as part of universal health coverage. Consequently, the Action Plan defines one of its main objectives “to strengthen and extend rehabilitation, habilitation, assistive technology, assistance and support services, and community-based rehabilitation”. The other objectives are “to remove barriers and improve access to health services and programs” and “to strengthen collection of relevant and internationally comparable data on disability and support research on disability and related services”.

The collaboration plan of the International Society for Physical and Rehabilitation Medicine (ISPRM) with the World Health Organization (WHO) includes advice to countries on the implementation and/or improvement of rehabilitation services on request of governments and/or national WHO offices. Such a request was sent to WHO headquarters in Geneva by the WHO Country Office of Ukraine in summer 2015, and a contract for a Disability and Rehabilitation Assessment Mission was signed by the Consultants Professor Christoph Gutenbrunner, MD, PhD (ISPRM-WHO-Liaison Officer), Piotr Tederko, MD, PhD, and Klemen Grabljevec, MD, MSc, and Mr Motohiro Ogita, WHO Coordinator Global Procurement and Logistics on November 3, 2015. The work was supervised by Ganna Radysh, Technical Officer WHO Country Office Ukraine.

3. Terms of reference

The aim of the mission is to develop a national disability, health and rehabilitation plan for the Ukraine. The plan should be based on an analysis of the present life situation of people with disabilities, existing services, and international standards. It should help the Ukrainian government to respond to proposed action to member states from the Global Disability Action Plan 2014–2021 “Better health for all people with disabilities”. The development of the plan was contracted between the WHO Country Office in Ukraine and the consultants. The plan should analyze the existing situation including epidemiological data, policies, health services, challenges, opportunities, gaps and others.

4. Understanding functioning, disability and health

The model of the International Classification of Functioning, Disability and Health (ICF; WHO 2001) describes the interaction of a health condition or disease with body functions, activities and participation and stresses the importance of contextual factors such as environmental factors and personal factors (see figure 1). Disability is defined as an interaction of a person with a health condition with his or her environment (the positive aspect of this interaction is called functioning). For that reason, disability cannot be seen as an attribute of a person (WHO 2012).

Disability may occur from many types of health conditions and in all age groups. Some examples are congenital impairments, injuries (e.g. multiple trauma, spinal cord injury, traumatic brain injury), chronic health conditions (e.g. lung disease, metabolic syndromes including diabetes mellitus, cardio-
vascular disease, rheumatic and musculoskeletal disease, neurological conditions), cancer, insults such as stroke or myocardial infarction as well as following surgery and other medical interventions (e.g. after organ transplantation). Mental and intellectual disease may lead to disability, too. Other health conditions related to disability are blindness, deafness and dumbness. This demonstrates the high variety of disabling health conditions that have to be taken into consideration in planning to improve functioning from a public health perspective.

The World Report on Disability also showed that disability increases with age, is higher in women as compared to men and is associated with poverty. It also states that the experience of disability is highly individual and related to the individual life situation. Environmental factors which influencing disability and functioning are the physical environment and the availability of products for personal use but also societal factors such as the family and peers, legislation, societal attitudes and others (WHO 2001). This shows that it is of major importance to link person-centred strategies to overcome disability a comprehensive policy strategy must be followed (see figure 2).

5. Understanding rehabilitation

Rehabilitation is defined as the health strategy aiming “to enable people with health conditions experiencing or likely to experience disability to achieve and maintain optimal functioning in interaction with the environment” (Meyer et al. 2011). It is also described as “a set of measures that assist individuals who experience, or are likely to experience, disability to achieve and maintain optimal functioning in interaction with their environments” (WHO and World Bank 2012).

---

1 “A distinction is sometimes made between habilitation, which aims to help those who acquire disabilities congenitally or early in life to develop maximal functioning; and rehabilitation, where those who have experienced a loss in function are assisted to regain maximal functioning” (WHO & World Bank 2012).
The definition of rehabilitation as a health strategy coincides with the perspective of the System of Health Accounts (OECD et al. 2011). Here for main health strategies are mentioned: prevention, curative care, rehabilitation and supportive care. This demonstrates that rehabilitation must be implemented into all health services and given attention similar to prevention curative care and supportive care. It also is a reference for political institutions to provide sufficient structural resources to develop this sector.

According to the international standards, rehabilitation services should be implemented “along the continuum of care” (WHO 2014) (figure 3). Thus, rehabilitation services must not be restricted to long-term care of severe kind of after care. According to these principles, rehabilitation services should be provided in the acute phase (within hospitals), immediately after discharge from hospitals, as well as in the community (in the sense of long-term care).

Rehabilitation services also should be delivered at all levels of health care (WHO 2014). These levels are also connected with different levels of specialization of services and/or service providers (figure 4). Peers, families and other persons in the immediate environment play an important role in rehabilitation in daily life. It is also obvious that primary health care workers (physicians, therapists) must contribute to rehabilitation or at least must be an entrance door for more specialized rehabilitation services. For these kind of services, specialized physicians (Physical and Rehabilitation Medicine, PRM) and specialized therapists are required and in case of complex needs multi-professional services with team-integrated work is required. In some specific health conditions that lead to severe disability, highly specialized services such as tertiary level are required e.g. for SCI and TBI. Acute rehabilitation is also an ex-
ample for rehabilitation services at the tertiary level.

As the needs of persons with disabilities are very complex (e.g. including body functions, activities, participation as well as environmental and personal factors) for an appropriate rehabilitation multiple professions must be involved (depending on the underlying health condition and the complexity of the functioning problem). This includes medical doctors and different specialized therapists but also social workers, psychotherapists and others. Within this report it is not possible to describe all the professionals and their role in rehabilitation in detail. However, the paper of Neumann et al. (2010) may give a rough figure about the role of the professionals:

- **“Physicians:** diagnosing the underlying pathology and impairments, medical assessment and treatment, setting-up treatment and rehabilitation plan, prescription of pharmacological and non-pharmacological treatments and assessment of response to these.

- **Rehabilitation nurses:** addressing and monitoring day-to-day care needs. Expertise in the management of tissue viability and continence problems. Providing emotional support to patients and their families.

- **Physiotherapists:** detailed assessment of posture and movement problems, administering physical treatments including exercise to restore movement and alleviate pain, etc.

- **Occupational therapists:** assessing the impact of physical or cognitive problems on activities of daily living, return to work, education and/or leisure activities, etc. Providing expertise on strategies that can be used by the patient and his/her family and environmental adaptations to facilitate independence.

- **Speech and language therapists:** assessing and treating communication and swallowing disorders.

- **Clinical psychologists:** detailed assessment of cognitive, perceptual and emotional/behavioural problems. Development of strategies to manage these with the patient, his/her family and with other health professionals.

- **Social workers:** promoting participation, community re-integration and social support.

- **Prosthetists, orthotists and rehabilitation engineers:** expertise in the provision of technologies ranging from splints and artificial limbs to environmental controls to address functional limitations, for example, following limb loss, loss of independent mobility, loss of ability to communicate.

- **Dieticians:** assessing and promoting adequate nutrition.” (Neumann et al. 2010)
6. Overview on population, epidemiological data and health system

a) Population

1) Geo-economical background

Ukraine is the second-largest country in Europe and the largest located entirely within Europe. Ukraine gained independence from the Soviet Union on August 24, 1991. The diversified economy of the country includes agriculture and heavy industry sector (particularly in aerospace and industrial equipment, concentrated in the eastern part of Ukraine). With the dissolution of the Soviet system, the country underwent the transition from a planned to a market economy.

Ukraine is classified by the World Bank as lower middle income country. Gross domestic product (GDP) per capita was 3,082 USD in 2014, and Gini index 24.6 in 2013. According to Ukraine President’s Decree No. 274/2010 of 26 February 2010 poverty has been recognized as one of the most difficult problems in Ukrainian society and one that afflicts a large part of the population — particularly persons with disabilities — limiting human development, giving rise to widespread social conflict and constituting a threat to the unity of society and the national security of Ukraine. Poverty head-count ratio at 4 USD a day for Ukraine for 2010 was 1.82% (World Bank Data 2015) (Household Survey Department, State Statistics Service of Ukraine, 2013).

Ukraine faces a number of major environmental issues such as air and water pollution (including radiation contamination in the north-east resulting from the accident at the Chernobyl Nuclear Power Plant on April 26, 1986), an inadequacy of potable water, deforestation. In February 2014 the annexation of Crimea by the Russian Federation Crimea took place, and since March 2014, the eastern part of Ukraine (Donbass region) has been involved in the armed conflict.

2) Country population

According to recently published data, the population of Ukraine in 2014 was of 44,291,413 with 68.97% of inhabitants living in urban areas. The median age of the population is 40.6 years (37.3 years for men and 43.7 years for women). Age and gender structure for 2014 according to country statistics by IndexMundi is presented in figure 5 (index Mundi 2015).

Data collected in 2001 show that Ukraine is inhabited by around 130 nationalities and ethnicities. Slavic groups are most prevalent (Ukrainians: 77.8%, Russians: 17.3%, Belarussian: 0.6%, Bulgarian: 0.4%, and Polish: 0.3%); followed by non-slavic groups as Moldovan: 0.5%, Crimean Tatars: 0.5%, Hungarian: 0.3%, Romanian: 0.3%, Jewish: 0.2%.

Figure 5: Population pyramid of Ukraine 2014 (source: IndexMundi. Country statistics.; available at: http://www.indexmundi.com/ukraine/age_structure.html)
Population growth rate is -0.64% with 9.41/1,000 births, 15.72/1,000 deaths and net migration rate -0.06 migrant(s)/1,000 population (estimations for 2014). Data from the past 25 years confirm decreasing tendency in the country population (1991: 51,944,400; 2001: 48,923,200) (States Statistics Service of Ukraine 2015). Prognoses of the United Nations suggest continuation of this process in coming decades: estimated population of Ukraine for 2025 is 39,569,100 and for 2050 is 29,959,100, with the increase of the fraction of inhabitants aged above 60 years (21% on 2025, 38.1% on 2050) (DESA 2015). The estimated population structure for 2050 is displayed on figure 6.

According to estimations of the World Bank of 2014 life expectancy at birth in the total population was 69.14 years, (63.78 years in males and 74.86 years in females) (World Bank Open Data 2015). Life expectancy in Ukraine is much below that of the rest of Europe (figure 7), with the greatest relative life expectancy loss at the working age, especially among males.

The legal working period for men and women is from 18 to 60 years of age. The unemployment rate in July 2015 was 9.6%. Age-dependency ratio in 2014 was 43% (World Bank Open Data 2015).

The average size of a household in Ukraine is 2.6 persons. In every fifth household with children, either one or both parents are absent. Of those, 94% are households in which the children do not have a father (Committee on the Rights of Persons with Disabilities 2012).

b) Causes of mortality

Causes of death, by communicable diseases, maternal, prenatal and nutrition conditions accounted for 5.1%, by injury 5.4% and by non-communicable diseases 89.5% of total mortality in 2012 (World Bank Open Data 2015). In 2006, among communicable diseases infectious and parasitic diseases accounted for 33.9/100.000 fatal cases among which mortality due to tuberculosis was 21.3/100.000 (Lekhan et al. 2010). There were with 18,100 deaths related to HIV/AIDS in 2014 (Index Mundi 2015). As for 2006 mortality due to non-communicable diseases was as follows: circulatory diseases: 801.6/100.000; malignancies: 161.7/100.000; respiratory diseases: 44.0/100.000; and digestive system diseases: 59.0/100.000. All external causes brought 133.3/100.000 fatal cases, including 19.9/100.000 due to transportation-related injuries.
International research conducted in 2003 found that in 2002 Health-adjusted life expectancy (HALE) was 54.9 years for men and 63.6 years for women (Lekhan et al. 2010). According to the Global Burden of Disease Study 2010 (GBD 2010) ischemic heart disease, cerebrovascular disease, and HIV/AIDS were the highest ranked causes of the number of years of life lost (YLLs) due to premature death in Ukraine in 2010 (for details see Table 1).

Table 1: Ten health conditions responsible for years of life lost (YLLs) due to premature mortality (2010) (Institute for Health Metrics and Evaluation Seattle, WA, USA: available at: http://www.healthdata.org/)

<table>
<thead>
<tr>
<th>Cause of death</th>
<th>YLLs (in thousands)</th>
<th>Per cent of total YLLs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Coronary Heart Disease</td>
<td>4,687</td>
<td>32.6%</td>
</tr>
<tr>
<td>2 Stroke</td>
<td>1,644</td>
<td>11.4%</td>
</tr>
<tr>
<td>3 HIV/AIDS</td>
<td>1,000</td>
<td>7.0%</td>
</tr>
<tr>
<td>4 Cirrhosis</td>
<td>446</td>
<td>3.1%</td>
</tr>
<tr>
<td>5 Self-harm</td>
<td>420</td>
<td>2.9%</td>
</tr>
<tr>
<td>6 Lung cancer</td>
<td>376</td>
<td>2.6%</td>
</tr>
<tr>
<td>7 Road injury</td>
<td>340</td>
<td>2.4%</td>
</tr>
<tr>
<td>8 Chronic obstructive pulmonary disease</td>
<td>275</td>
<td>1.9%</td>
</tr>
<tr>
<td>9 Tuberculosis</td>
<td>256</td>
<td>1.8%</td>
</tr>
<tr>
<td>10 Colorectal Cancers</td>
<td>249</td>
<td>1.7%</td>
</tr>
</tbody>
</table>

c) Epidemiological data on injury and chronic conditions

The ten leading causes of disability-adjusted life years (DALYs) in 2010 were ischemic heart disease, cerebro-vascular disease, HIV/AIDS, low back pain, road injury, chronic obstructive pulmonary disease, liver cirrhosis, alcohol use related disorders, self-harm and major depressive disorders. Table 2 displays incidence of new cases of the most common disease groups registered in 2014 (State Statistics of Ukraine 2015).

Table 2: Selected diseases according to ICD-10 classification: new cases in thousands registered in 2014 (excluding the territories of the Autonomous Republic of Crimea, the city of Sevastopol and the zone involved in military activities). Based on State Statistics Service of Ukraine documents

<table>
<thead>
<tr>
<th>ICD group - Health condition</th>
<th>Thousands of newly registered cases (2014)</th>
</tr>
</thead>
<tbody>
<tr>
<td>II – neoplasms</td>
<td>363</td>
</tr>
<tr>
<td>VI - Diseases of the nervous system</td>
<td>651</td>
</tr>
<tr>
<td>IX - Diseases of the circulatory system</td>
<td>1,880</td>
</tr>
<tr>
<td>X - Diseases of the respiratory system</td>
<td>11,839</td>
</tr>
<tr>
<td>XII - Diseases of the skin and subcutaneous tissue</td>
<td>1,570</td>
</tr>
<tr>
<td>XIII - Diseases of the musculoskeletal system and connective tissue</td>
<td>1,247</td>
</tr>
</tbody>
</table>
General disease prevalence was twice as high in low-income groups than in high-income groups. As for 2001 in low-income groups, hypertension morbidity was 1.9 times higher, chronic bronchitis morbidity was 2.7 times higher, peptic ulcer prevalence was 2.4 times and chronic gastritis prevalence was 3.3 times higher compared to more wealthy groups. Children from low-income households were 3 times more prone to chronic diseases than their wealthy counterparts (Lekhan et al. 2010).

d) Disability rates

Official estimations of the number of persons with disability in Ukraine are based on data collected by the Ministry of Public Health (yearly reports of commissions responsible for certification of disability cases) and the Ministry of Social Policy (number of persons requesting various forms of support due to the disability) and thus reflect the number of persons registered as being “invalid”.

1) Disability assessment method

Jurisdiction of the invalidity is performed by so-called Medical and Social Expert Commissions (MSEC) consisting of physicians with various medical specialties having completed postgraduate courses on medical and social examination. The disability assessments of the MSECs are based on the patient’s history, medical documentation, physical examination and results of additional tests (e.g. imaging or laboratory studies).

The criteria for certification of invalidity for adult population are defined in article 27 of the Regulations on Procedure, Conditions and Criteria for Establishing Invalidity, approved by the decree of the Cabinet of Ministers of Ukraine on 3rd of December 3, 2009 N1317:

- The 1st group includes persons who due to severe health condition are fully or partially unable to self-care, request permanent exterior supervision, care or assistance, and who are dependent from other persons in performing basic social functions. 1st Group of disability is divided into subgroups 1A and 1B depending on health condition severity and requirement in permanent external care, assistance or dispensary care.
  - Subgroup 1A is defined by an extremely high degree of health loss, extreme dependence from assistance or dispensary care performed by other persons and by complete incapability of self-service.
  - Subgroup 1B attributes to a high degree of health loss, substantial dependence on other persons in the provision of important social functions and limited capability self-service.

- The 2nd group of disability include persons who due to their health conditions have severe limitations in self-care, locomotion, orientation, communication, educational and work abilities, and who do not require a permanent care, supervision or assistance.

- The 3rd group is designed for persons with health conditions resulting in permanent moderate impairments affecting their self-care abilities, mobility, orientation, behaviour, communi-
cation, hindering but not precluding a possibility to participate in education and remunerative employment. Disability in children is not subjected to above-mentioned classification.

Disability in children is not subjected to above-mentioned classification and provided by different structures (Commissions of Doctor Control, located in primary and secondary levels of children health care facilities, consisting of practical paediatricians) according to different legislation (with less documentation and health condition requirements) resulted in lots of conflict situations while reaching the adult age.

Evaluations performed by MSECs and Commissions of Doctor Control do not apply any widely accepted tools for functional assessment addressing activities, participation or environmental factors. Disability assessment performed by MSEC may be therefore biased towards structure-related biological outcomes of former treatment.

2) Reported invalidity rates

According to official statistics the number of persons with certified disabilities as at 1 January 2011 was 2,709,982 of whom 310,494 belonged to the 1st group; 1,078,721 to the 2nd group; and 1,155,646 to the 3rd group; 165,121 were children with disabilities. Thus, the number of persons with disabilities in 2011 represented nearly 6% of the total population (45,598 thousand). Thus, the reported rates of certified invalidity in Ukraine are lower than disability indexes in other European countries (due to methodological reasons).

In 2014, there were 133,745 new cases of disability certified in Ukraine. List of health conditions resulting in disability in this group of patients is displayed in table 3 (data of the Ministry of Health of Ukraine, Division of Medical and Social Examination, State Institution «Ukrainian State Institute of Medical and Social Problems of Disability Ministry of Public Health of Ukraine»).

Table 3: Causes (displayed as ICD-10 groups) of new cases of the certified disability in Ukraine (data do not cover Crimea, city of Sevastopol, Donetsk and Luhansk regions) in 2014 (the Ministry of Health of Ukraine, Division of Medical and Social Examination, State Institution «Ukrainian State Institute of Medical and Social Problems of Disability Ministry of Public Health of Ukraine»)

<table>
<thead>
<tr>
<th>ICD-10 Group of diseases</th>
<th>Percent of total number of new cases of certified disability</th>
</tr>
</thead>
<tbody>
<tr>
<td>IX - Diseases of the circulatory system</td>
<td>22.6%</td>
</tr>
<tr>
<td>II- Neoplasms</td>
<td>21.5%</td>
</tr>
<tr>
<td>XIII - Diseases of the musculoskeletal system and connective tissue</td>
<td>11.2%</td>
</tr>
<tr>
<td>XIX - Injury, poisoning and certain other consequences of external causes</td>
<td>10.8%</td>
</tr>
<tr>
<td>V - Mental and behavioral disorders</td>
<td>5.9%</td>
</tr>
<tr>
<td>VI - Diseases of the nervous system</td>
<td>5.1%</td>
</tr>
<tr>
<td>I - Certain infectious and parasitic diseases</td>
<td>4.9%</td>
</tr>
<tr>
<td>IV - Endocrine, nutritional and metabolic diseases</td>
<td>4.7%</td>
</tr>
<tr>
<td>VII - Diseases of the eye and adnexa</td>
<td>3.3%</td>
</tr>
<tr>
<td>XI - Diseases of the digestive system</td>
<td>2.6%</td>
</tr>
</tbody>
</table>
ICD-based classification of causes of disability does not allow assessing the contribution of age-related causes of disability, as well as a contribution of combined disabilities. Assessment of the prevalence of disability based on the data of the Ministry of Social Policy may be unreliable since the data reflect the rate of persons who avail from various forms of social services rather, than the rate of persons with needs.

Ukrainian data of 2010 on years lived with disability (YLD) are presented on Figure 8.

**e) Health care system**

**Article 49 of the Constitution of Ukraine** guarantees everyone the right to health protection, medical care and health insurance. The State creates the conditions necessary for effective medical services to be accessible to all citizens. In State and community health-care institutions, medical care is provided free of charge (Committee on the Rights of Persons with Disabilities 2012).

The Ukrainian health care system has preserved the fundamental features of the centralized Smashko system typical for post-Soviet Union countries. Since independence, many changes in the health sector have been initiated, although most of them were oriented not towards meeting the health needs of the population but rather towards solving problems in the health sector. As capacity planning has remained almost unchanged, since 2007, improving the quality of health care has become a more systematic activity. Regional and local health directorates and health facilities are now functionally subordinate to the Ministry of Public Health, but managerially and financially responsible to the regional and local self-government. This system has constrained the implementation of health policy and fragmented health financing. Only the State Sanitary-Epidemiological Service and the State Pharmaceuticals Quality Control Inspectorate, each with relevant facilities at the different levels of administration, remain fully centralized (Lekhan et al. 2010). Overview of the organization of the Ukrainian health system is presented in Figure 9.

The **Ministry of Health** is responsible for the accreditation of all health facilities regardless of ownership, but this is more of a formality than a tool for improving a quality of services. Standardization
efforts through the development of clinical guidelines and protocols have been ongoing, but as for 2011 they were not generally evidence-based guidelines and their efficacy has not been monitored.

Formally, the health system in Ukraine is completely controlled by the state. Practically, the Ministry’s influence is significantly limited. Local governing bodies are responsible for:

- implementing national health policies at the local level;
- drafting local budgets and proposals on health care financing,
- funding and running public health care facilities,
- pooling budgetary and other resources to invest into health care facilities,
- undertaking appropriate actions to prevent and eliminate communicable diseases.

Decentralization of financing, along with increasing recognition of the healthcare needs of the population, has led to increasing inequalities between wealthier and poorer areas.

The number of medical staff per capita has increased gradually between 1990 and 2011, partly resulting from a decline in the total population. At the same time, the medical workforce is aging as new graduates choose to work outside the state health system or seek opportunities abroad. The most severe staff shortages are in rural areas and in primary care. The number of nurses has fallen more rapidly due to the low wages and low status of nursing, and the limited possibilities for professional development (Lekhan et al. 2010).

Health care infrastructure remains extensive despite a rapid reduction in the number of beds in 1997–1998. In-patient sector seems to be oversized, having approximately 40 percent more than the average in the European Union (Fan 2015). According to State Statistics Service, as for 2014 the Ukrainian health system consists of 1,800 in-patient institutions, 336,000 hospital beds (78,5/10,000 population), 9,800 out-patient’s facilities admitting 912,000 patients per shift (213,4/10,000 population). There are 186,000 medical practitioners (excluding dentists) (43,5/10,000 population) and 379,000 nursing staff members (88,6/10,000 population). The data exclude the territories of the Autonomous Republic of Crimea, the city of Sevastopol and the zone involved in military activities.
General practitioners make up a third (32.9%) of all primary care physicians. They work at family medicine facilities. Most of them (70%) are practicing in rural areas.

The inpatient system is a hierarchical system organized into three levels:

- The first level is that of local hospitals providing basic inpatient facilities.
- Secondary inpatient care is provided in the central district and municipal multi-profile hospitals, paediatric hospitals and specialized centres which are located and governed at this organizational level.
- The third level is that of regional and supra-regional specialization provided by regional hospitals, diagnostic centres and specialized clinics at the national research institutes of the Ministry of Health and the National Academy of Medical Sciences. Tertiary care was originally designed to provide highly specialized medical care to patients with the most severe and complicated conditions, but there has been some blurring of the lines between care provided at secondary and tertiary levels.

In the Ukrainian health system, the private sector is rather small and consists mostly of pharmacies, medico-prophylactic facilities and privately practicing physicians. They receive their financing mostly through direct out-of-pocket payments from the population.

Other health and health related activities are under responsibility of a couple of ministries and institution:

- The Ministry of Health manages the undergraduate and postgraduate medical education, the medical research system and controls a significant proportion of the centralized state purchase of pharmaceuticals, medical devices and equipment for the state programs.
- The National Academy of Medical Sciences of Ukraine manages the research institutes that provide highly specialized medical services. These facilities are financed directly from the state budget through separate funding.
- The Ministry of Social Policy among other things is responsible for providing long-term care for elderly persons and people with disabilities.
- The Ministry of Defense, Ministry of Internal Affairs, Security Service and Ministry of Transport and Communications all have their own health care facilities for their employees and their relatives, which operate in parallel to the main statutory system under the Ministry of Health.
- The State Penal Jurisdiction Department is responsible for the organization of health services within the prison system.

According to data from 2008, the parallel health care network had 255 hospitals (10% of the total number of hospitals in the country), and 435 outpatient departments (5.9% of the total in the country). The number of inpatients in the parallel networks made up 7.7% of the total number of inpatients, and visits to polyclinics made up 6.9%.

There are many nongovernment organizations, professional medical associations and groups of persons with disabilities, but they are not very influential in the health system. As in 2011, there was no self-governing of the medical profession in Ukraine. Many international organizations work in the Ukrainian health sector, but their activities are focused quite narrowly on specific areas such as sexual health, HIV/AIDS and tuberculosis (Lekhan et al. 2010).
f) Health care funding system

The health expenditure amounts to 7.3% of GDP, whereas education expenditures account for 6.2% of GDP (all data from WHO 2011). The Act on the State Budget of Ukraine for 2012 set the monthly per capita minimum subsistence level at 127 USD.

Financing of the health system in Ukraine comes from several public sources. However, even according to official data population’s participation in direct health care financing may be underestimated (Gotsadze et al. 2006).

Parallel health systems are funded from the national budget. Almost 42% of health expenditure from the national budget and more than 11% of total public health expenditure is spent on parallel medical facilities.

As for 2008, the majority of government expenditure was paid for inpatient medical services, with only a relatively small proportion (13%) went to outpatient services. Out-of-pocket payments are consistently increasing in all main forms of spending: official service charges, drugs and medical supplies for outpatient as well as inpatient care (19.7–21.8% of total healthcare expenditure and 55.4–58.4% of the total volume of out-of-pocket payments between 2003 and 2005, and informal payments (Gotsadze et al. 2006). To protect socially vulnerable population groups, there are certain benefits available for outpatient health services and pharmaceuticals. These groups can receive pharmaceuticals from the approved government list for free or for a discount with a prescription. However, expenditure through this program does not exceed 2.7% of the total spending on pharmaceuticals. In reality, even socially vulnerable groups have to pay out-of-pocket for guaranteed services.

There is no clear line between free and paid medical services. As a result, the government does not regulate prices for those services which are provided for a fee in real life, but which are not yet included in the official list of paid services approved by the Cabinet of Ministers. As for 2011 the volume of informal payments was almost equal to the volume of formal payments, (8–10% of total health expenditure and 22% of household expenditure, but it was likely that an amount of informally paid money had been underestimated) (Gotsadze et al. 2006; Lekhan et al. 2010).

The health expenditure covered by governmental resources cannot match the constitutional guarantees of access to unlimited care. Other problems are an inefficient allocation and use of resources, decades of neglected investments and corruption in the sector. Health system weaknesses are highlighted by increasing rates of avoidable mortality. According to World Bank Country Director for Belarus, Moldova and Ukraine most important short-term task in improving the system should include assuring of free care, including pharmaceuticals, to people in most acute need and against the most important diseases, removing legal obstacles for more efficient allocation of resources and to move from input-based, focused on number of hospital beds, to patient-based financing model; eliminating duplications and/or consolidating of health facilities belonging to different parts of the health care system, increasing transparency and accountability in the piloting of new payment schemes, or “purchasing”, and management arrangements in some primary care locations and hospitals (Fan 2015).

g) Existing rehabilitation services

Analyzing existing rehabilitation services in Ukraine, two main streams must be differentiated:

- Health-related rehabilitation services (predominantly under the responsibility of the Ministry of Public Health), and
- Social compensation and vocational rehabilitation (provided by the Ministry of Social Policy)
The provision of assistive devices is integrated in the social compensation system and thus under responsibility of the Ministry of Social Policy. Both types of services of the Ministry of Social Policy are provided as so-called Individual Rehabilitation Plans. The ministry of Social Policy also provides educational centers including long-term rehabilitation for children with disabilities (including orphans). Other health-related rehabilitation services are provided by the Ministry of Defense too. Last but not least some NGO’s are active in rehabilitation and training of rehabilitation professionals.

1) Health-related rehabilitation services

Based on the rehabilitation system that was established in the Soviet Union, in Ukraine different types of health-related rehabilitation institutions exist (official data from Ministry of Public Health for the year 2013, staff lists provided according to Decree of Ministry of Public Health of February 23, 2000 N33 with corrections up to August 21, 2013 N745):

- **Rehabilitation services in general hospitals**: All acute and general hospitals are declaring providing some rehabilitation services from the acute stage based on following workforce staff list:
  
  o For adult hospitals:
    - doctors for physiotherapy: 1 FTE\(^2\) per 200 (250 in municipal, central district hospitals) beds followed another 0,5 FTE per any department of cardiosurgery, neurotraumatology and neurosurgery with 60 and more beds;
    - doctors for treatment gymnastics: 1 FTE per 300 (400 in central district hospitals) beds;
    - instructor (nurse) for treatment gymnastics: 1 FTE per 300 beds followed 1 FTE per 20 beds for patients with neuroinfections; 1 FTE per 40 cardiosurgery, acute myocardial infarction beds; 0,5 FTE per traumatology, orthopedic, neurological, neurotraumatology, spinal trauma departments (in regional hospitals); 1 FTE per 200 beds followed 1 FTE per 20 beds for patients with neuroinfections; 1 FTE per 30 acute myocardial infarction beds; 0,5-1 FTE per traumatology, orthopedic, neurological, neurotraumatology, spinal trauma departments (in municipal hospitals), 1 FTE per 300 beds (or at least 1 FTE for 200 beds) followed 0,5 FTE per 25 MD FTEs with out-patient activities; 0,5 FTE per traumatology departments (in central district hospitals);
    - nurses for massage: 1 FTE point per 150 beds followed by 1 FTE per traumatology, orthopedic, neurological, neurosurgery, neurotraumatology, cerebrovascular departments; 1 FTE per 10 beds for neuroinfections (in regional and municipal hospitals); 1 FTE per 200 beds followed 1 FTE per 25 MD FTEs with out-patient activities; 1 FTE per traumatology departments (in central district hospitals);
    - nurses for physiotherapy: 1 FTE per 15000 CPU\(^3\) per year (in all hospital types);
    - logopaedists: 1 FTE per 1 surdologopedic and phoniatric cabinets.

---

\(^2\) FTE = Full time equivalent

\(^3\) CPU (CMU) Conditional Physiotherapy (Massage) Unit – 1 Unit = procedure activity needs 10 minutes for preparing and providing it
For children hospitals:
- doctor for physiotherapy: 1 FTE per 200 beds (or at least 1 FTE per any children hospital);
- doctor for treatment gymnastics: 1 FTE per 200 beds followed by 0,5 FTE per child neurology department;
- instructor (nurse) for treatment gymnastics: 1 FTE per 200 beds followed by 0,5-1 FTE per traumatology, orthopedic, neurological, neurosurgery, pulmonology and allergology departments;
- nurses for massage: 1 FTE point per 100 beds followed by 1 FTE per traumatology, orthopedic, neurological, neurosurgery, pulmonology, allergology, newborn pathology and premature newborns departments;
  - nurses for physiotherapy: 1 FTE per 15000 CPU per year;
- logopaedists: 1 FTE per 1 surdologopedic and phoniatic cabinets.

These services provide acute, early-post acute and usually (out of frames of it actual responsibilities) intermittent chronic services.

- **Restorative treatment hospitals (and units):** Restorative treatment hospitals (total number in Ukraine: 11: total number of beds: 1,416) and restorative treatment units in other hospitals (total number of beds: 472) mainly provide medication-based treatment, treatment gymnastics, electro-, thermo-, therapy, and some medical training. These beds are dedicated to rehabilitation interventions mainly at post-acute level and intermittent in-patient rehabilitation.

- **Physiotherapy and allied therapies hospitals**: Physical therapy hospitals mainly provide balneotherapy, peloids massage etc. In Ukraine 7 units of this type exist with a total of 1,040 beds. Like restorative treatment hospitals, these ones provide rehabilitation for post-acute phase and intermittent in-patient rehabilitation.

For both restorative treatment and physiotherapy hospitals, principle of constructing staff list is the same:
- doctor for physiotherapy (acupuncture): 1 FTE per 100 in-patient beds followed 1 FTE per 20 baths, 20 beds for mud (peloid-) therapy;
- doctor for treatment gymnastics: 1 FTE per 150 beds;
- instructor (nurse) for treatment gymnastics: number of FTEs depends of local time normative for treatment gymnastics;
- nurses for massage: number of FTEs depends of local time normative for massage procedures;
- nurses for physiotherapy: 1 FTE per 15000 Conditional Physiotherapy Units per year;
- nurses in cabinet for gynecological balneotherapy: 1 FTE per 200 beds;
- nurses in cabinet for phyotherapy: 1 FTE per 200 beds;
- nurses in cabinet for inhalation therapy: 1 FTE per 200 beds;
- nurses in cabinet for mechanotherapy: 1 FTE per 100 beds;
- nurses in cabinet for mud (pelido-) therapy: 1 FTE per 10 beds or 10 baths;

---

4 For current „Physiotherapy” specialty and competences in Ukraine refer section 6 h)
• **Hospitals for Invalids and Wars Veterans** *(total number in Ukraine: 58, total number of beds: 8,572)* provide in-patient medication-based treatment, treatment gymnastics, electro-, thermo-, therapy. These facilities are declared to provide rehabilitation interventions mainly at post-acute level and intermittent in-patient rehabilitation for veterans of different military conflicts and their relatives.

Following principle of staff list constructing is set for such facilities:

- doctor of physiotherapy: 1 FTE per 200 beds (or 15 MDs providing consultative service);
- doctor for treatment gymnastics: 1 FTE per 200 (at least 1 FTE);
- instructor (nurse) for treatment gymnastics: 1 FTE per 100 beds;
- nurses for massage: 1 FTE per 4,000 CMU per year;
- nurses for physiotherapy: 1 FTE per 13,000 CPU per year;

- Sanatoriums: Sanatoriums are units for intermittent in-patient rehabilitation for persons with chronic health conditions. They originate from the traditional spa treatment *(kurortology)* that in socialist countries mainly was managed by the trade unions and also covered some preventive aspect. In Ukraine, 2,829 sanatoriums exist, they provide a total of 407,000 beds in periods of maximum load *(according to season period)*.

Following principle of staff list constructing is set for such facilities:

- For adult sanatoriums:
  - doctor for physiotherapy: 1 FTE per 200 and more beds (musculoskeletal disorders, neurological disorders), 1 FTE per 300 and more beds (any other pathologies);
  - doctor for treatment gymnastics: 1 FTE per 250 and more beds (circulation disorders, gastroenterological, musculoskeletal, neurological, bone tuberculosis), 1 FTE per 350 and more beds (any other pathologies);
  - instructor (nurse) for treatment gymnastics: 1 FTE per 50-150 beds, 1,5 FTE per 151-250 beds, 2 FTE per 251-350 beds, 2,5 FTE per more than 350 beds (musculoskeletal disorders, neurological, bone tuberculosis), 1 FTE per 50-200 beds, 1,5 FTE per 201-350 beds, 2 FTE per more than 350 beds (any other disorders);
  - nurses for massage: 1 FTE per 50-200 beds, 2 FTE per 201-350 beds, 3 FTE per more than 350 beds (musculoskeletal disorders, neurological, bone tuberculosis), 1 FTE per 100-250 beds, 2 FTE per 251-400 beds, 2,5 FTE per more than 400 beds (circulatory disorders, gastroenterological, metabolic, gynecological, tuberculosis meningitis consequences), 1 FTE per 150-400 beds, 1,5 FTE more than 400 beds (any other disorders);
  - nurses for physiotherapy: 0,5 FTE per 50-125 beds, 1 FTE per 126-250 beds, 1,5 FTE per 251-375 beds, 2 FTE per more than 375 beds;
  - nurses in balneotherapy division: 1 FTE per sanatorium;
  - nurses for mud therapy: 1 FTE per 90 and more procedures (0,5 FTE per 45);
  - nurses in cabinet for inhalation therapy: 0,5 FTE per 4 inhalation places;
• nurses for beach servicing (in case beach availability): 0.5 FTE per 75-250 beds, 1 FTE per more than 251 beds;
• nurses for aerosolarium or aerotherapy servicing: 0.5 FTE per 75-200 beds, 1 FTE per more than 201 beds;
  o For children sanatoriums:
    • doctor for physiotherapy: 1 FTE per 200 beds (not less than 0.5 FTE per 75 and more beds);
    • doctor for treatment gymnastics: 1 FTE per 200 beds (cerebral palsy with psychiatric disturbances, musculoskeletal, pediatric), 1 FTE per 250 beds (any other pathologies);
    • instructor (nurse) for treatment gymnastics: number of FTEs depends of local time normative for treatment gymnastics;
    • nurses for massage: number of FTEs depends of local time normative for massage procedures;
    • nurses for physiotherapy: 1 FTE per 15,000 CPU per year followed 1 FTE per 100 beds (for peloid-, mud-, balneotherapy divisions);
    • nurses in cabinet for electrical sleeping or aerosolarium: 1 FTE per 200 beds.
    • nurses for mud therapy: 1 FTE per 90 and more procedures (0.5 FTE per 45);
    • nurses in cabinet for inhalation therapy: 0.5 FTE per 4 inhalation places;
    • nurses for beach servicing (in case beach availability): 0.5 FTE per 75-250 beds, 1 FTE per more than 251 beds;
• Hospices for persons with long-term disabilities: Hospices provide long-term or permanent in-patient care including at least some (minimal) rehabilitation interventions. They care for persons with (severe) long-term disabilities. As for 2014 in Ukraine 850 facilities in 20 regions existed (100 beds per 1,000,000 population).
  Following principle of staff list constructing is set for hospice facilities:
    o doctor for internal medicine (ukr.: терапевт): 1 FTE per 25 beds;
    o doctor for psychotherapy or psychologist: 1 FTE per 25 beds;
    o nurses for massage: 1 FTE per 40 beds.
• Out-patient rehabilitation services: All so-called policlinics are declaring providing some outpatient rehabilitation services based on following workforce staff list:
  o For adult facilities:
    • doctor of physiotherapy: 1 FTE per 30 (20 in central district facilities) MDs providing outpatient service;
    • doctor for treatment gymnastics: 1 FTE per 50 (20 in central district facilities) MDs providing outpatient service;
    • instructor (nurse) for treatment gymnastics: 1 FTE per 25 MDs providing outpatient service;
    • nurses for massage: 1 FTE per 20 MDs providing outpatient service;

5 In Ukraine MDs of Internal medicine named “therapist” (don’t misunderstand as rehabilitation specialists non-MDs around the world).
nurses for physiotherapy: 1 FTE per 15 000 CPU per year;
logopaedists: 1 FTE per 100 000 adult population.

For children facilities:
• doctor of physiotherapy: 0,5 FTE per 10-20 MDs providing outpatient service, 1 FTE per 20-40 followed by 0,4 FTE per any 20 MDs more than 40 (extra 0,5 FTE added in case speleotherapy cabinet is present);
• doctor for treatment gymnastics: 0,5 FTE per 50 MDs providing outpatient service (at least 1 FTE in facilities approached by at least 15 000 children; in case swimming pool or hydrotherapy block are present extra 0,5 FTE added per 10 000 children);
• instructor (nurse) for treatment gymnastics: 1 FTE per 15 MDs providing outpatient service (in case swimming pool or hydrotherapy block are present extra 0,5 FTE added per 10 000 children);
• nurses for massage: number of FTEs depends of local time normative for massage procedures;
• nurses for physiotherapy: 1 FTE per 15 000 CPU per year (extra 0,5 FTE added in case speleotherapy cabinet is present);
• logopaedists: 1 FTE per 10 000 children and adolescent population.

The list above suggests that in Ukraine a rather comprehensive system of health-related rehabilitation services exist. However, according to international standards it does not reach a comparative level. This mainly is due to the following reasons:

- There is a lack of multi-professional approaches (multi-professional rehabilitation teams) and the rehabilitation professionals are not accredited according to international standards (see below)
- The classification of services, the service goals and indications for treatment seems not to be clearly defined but more or less follow traditions from the soviet system
- There is a lack of strategic planning according to the needs of persons with disabilities and chronic health conditions.

2) Individual rehabilitation plans for persons with certified invalidity

Beside of assessment of disability, MSECs are responsible for determination of rehabilitation needs of individuals with disabilities as well as establishing of individual rehabilitation plans including medical interventions, supplying of assistive devices, special education, employment resuming interventions, social and financial support.

Sector-specific statistical reports for 2011 showed that individual rehabilitation programs were drawn up for 173,931 persons newly recognized as having a disability, of whom 19,795 were from the 1st group, 66,092 from the 2nd group and 88,144 from the 3rd group. For persons whose disability certification had been renewed, 411,441 individual rehabilitation programs were drawn up. A total of 358,783 rehabilitation programs were implemented. For persons whose disability status had been renewed, 155,266 individual rehabilitation programs were implemented. MSECs prepared medical rehabilitation recommendations for 677,434 persons, including recommendations relating to conservative therapy for 657,480 persons, reconstructive surgery for 12,440 persons and the provision of assistive devices for 7,514 persons. In total, in 2011, MSECs in Ukraine issued recommendations
on “medical rehabilitation” to 480,000 persons, recommendations on employment to 275,000 persons, recommendations on vocational training to 28,000 persons, recommendations on social rehabilitation to 308,000 persons, recommendations on assistive devices equipment to 17,000 persons and recommendations on sanatorium-based treatment to 169,000 persons.

As at January 1, 2012, a total of 303,900 women with disabilities were employed and working: 8,500 in 1st group, 89,100 in 2nd group and 206,200 in the 3rd group. In accordance with Ministry of Health Order No. 815 of 27 September 2010, plans have been drawn up for the establishment of an electronic register of health-care institutions’ patients registered as unable to work. One part of this register will serve as a record of persons with disabilities, broken down by type and category of disability or illness (Committee of the Rights of Persons with Disabilities).

In principle the assessment of disability and the need of rehabilitation interventions (health-related and non-health related) with specialized commissions make sense. However, there are some critical points:

- The commissions mainly work on the basis of physical investigation of the diseases. Approaches to assess activity and participation are underdeveloped and standardized rehabilitation assessment tools are not used yet.

- Individual rehabilitation plans filled in routinely as a part of MSECs` examination procedure for almost all supervised persons actually are declarative ones marking only the names of rehabilitation interventions (e.g. restorative treatment, treatment gymnastics, wheel chair supplying, professional orientation etc.) without any further personalization and goal settings. According to the actual legislation, the person has the right to decline executing the plan.

- A real coordination function for the rehabilitation process seems to be underdeveloped (case management) and the links to the providers of health-related services are week. This, in particular, is a problem in the field of provision of assistive devices and vocational rehabilitation.

h) Work force of rehabilitation professionals

In Ukraine the following rehabilitation professions exist (official data from Ministry of Public Health as for December 31, 2014):

- Medical doctors with specialization in “Physiotherapy”, “Treatment Gymnastics” or “Sports Medicine”: They all undergo a postgraduate training of 3 months (approx. 408 hours) including basic principles of kinesiology, treatment gymnastics, principles of electrical-, magnetic-, hydro-, peloido- and other types of preformatted natural factors treatment, complexes of treatment modalities for use in specific diseases. They work in all kind of medical settings providing rehabilitation service in Ukraine according to staff lists available. Currently 1,075 MD’s of “Physiotherapy” and 496 MD’s of “Treatment Gymnastics and Sports Medicine” are practicing in Ukraine.

- Other medical doctors involved into the rehabilitation service: In Ukraine some neurologists, orthopaedic surgeons, cardiologists and some specialists in internal medicine (in Ukraine traditionally named as “therapists”) are working in the field of rehabilitation. They are mainly working both in general and specialized inpatient departments as well as in outpatient setting. The number of non-PRM doctors working in rehabilitation amounts to cannot be clearly determined as they belongs to specialists` NGOs and no statistical data in this direction is actually collected.
• Medical Nurses with specialization in “Physiotherapy”, Treatment Gymnastics” or “Massage Therapy”: Their training is 3 years (bachelor level) in “Medicine” educational area finalized with the graduation in specialties “Nursing”, “Obstetrical nursing”, following specialization “Physiotherapy”, “Treatment gymnastics” or “Treatment massage” (duration 3-4 months) accordingly and includes principles of operating equipment for physiotherapy, gymnastic complexes set in different pathologies etc. Medical Nurses trained for Physical Therapy, Treatment Gymnastics or Massage Therapy work in all kind of medical settings providing rehabilitation service in Ukraine according to staff lists available.

Also graduates of nonmedical High Schools (departments of physical rehabilitation in High Schools of Physical Training, other High Schools – 4 years training up to Magister level, up to 40 different program types with maximum of 800 clinical hours, but in some places even distance learning principle) may enter all such nursing positions (“Physiotherapy”, Treatment Gymnastics” or “Massage Therapy”) with nursing professional competences.

The total numbers practicing in Ukraine are: 13,360 Nurses for Physical Therapy, 55 specialists graduated high schools of nonmedical education practicing on positions of MDs of “Treatment Gymnastics”, 131 Nurses (instructors) of Treatment Gymnastics graduated high schools of nonmedical education (e.g. “High Schools of Physical Training”) and 86 nurses (instructors) of Treatment Gymnastics without medical education. Concerning Nurses of Massage Therapy, their number is difficult to calculate as no centralized information for such professionals is actually collected and their education may consisted of trainings for 3-6 months operated by different specialists both from official and alternative medical area.

NGO “Ukrainian Association of Physical Therapy” presenting Ukraine in World Confederation of Physical Therapy (WCPT) gathered 79 persons (as for December 31, 2015) with professional competences of “Physical therapists” recognized by WCPT.

• Logotherapists: Logotherapists (with profession name “Logopaedists”) are trained in specific departments (specialization “correction pedagogy”) of Pedagogic Universities (other nonmedical High Schools). Their education lasts 4 years (bachelor level) may followed 1,5 years (magister level) and concentrates on the children education, speech and language training. Such specialists provide no swallowing problems management (the total number of logotherapists in Ukraine needs to be elucidated).

• Prosthetists and orthotists.7 There is no formal education for Prosthetist/Orthotist in Ukraine. There is a title registered at the Ministry of Education for a profession called Prosthetic Technician # 3.1.1.9 but not as a Prosthetist/Orthotist. From the Soviet Union, Ukraine has inherited a number of state-owned prosthetics/orthotics manufacturing facilities, hospitals and clinics throughout the country. These facilities have been partially updated to various degrees. Ukrainian hospitals often rely on equipment donated from abroad and monetary donations from the patients and their relatives and friends to improve the conditions. There are a number of privately owned and operated prosthetics/orthotics workshops and clinics. These are better equipped and provide better service. The private facilities are also able to bill the government for services they provide. Privately owned clinics are sometimes owned by foreign companies and charge the clients directly for their services. Not many

6 The actual name of such specialists in Ukraine are “nurses of Physiotherapy cabinets”.
7 All data from 2015 NSPA-ISPO REPORT „A 5-year sustainable suggestion for establishing Prosthetic and Orthotic training in Ukraine“
people can afford receiving treatment at such clinics.

Currently in Ukraine, there are 216 prosthetists, most of whom possess no formal training. One prosthetist can handle on average a workload of 250-300 amputees/year counting new limbs, repairs, follow up visits and other ongoing services.

- **Psychotherapy in the rehabilitation** context is done in both medical and non medical rehabilitation facilities by doctors of psychotherapy (they all graduated Medical High Schools (6 years) as MDs, than pass the internship in “Psychiatry” (1,5 years) than pass specialization on “Psychotherapy” (6 months)), doctors-psychologists (6 years of education in High Medical Schools according to program “Medical psychology” or specialization “Medical Psychology” of postgraduated MDs for 6 months) and practicing (general) psychologists (non medical University or other types of High Schools education for 4 years (bachelor level) and may followed 1,5 years (magister level)). As for April 01, 2015 the total number of such specialists are: doctors of psychotherapy – 171 persons (occupying 189 FTE of 271 FTEs available in medical facilities according to staff lists), doctors-psychologists (medical psychologists) – 206 persons (occupying 197 FTE of 283 FTEs available in medical facilities according to staff lists), practical (general) psychologists – 942 persons (occupying 906 FTE of 1042 FTEs available in medical facilities according to staff lists).

Not existing rehabilitation professions are:

- **Medical doctors with specialization in Physical and Rehabilitation Medicine (PRM).** In 2014 professional NGO “Ukrainian Society of Physical and Rehabilitation Medicine” (USPRM) was registered gathering all European based Ukrainian rehabilitation MDs with current specialisation as “Physiotherapy”, “Treatment Gymnastics”. In July 2015, USPREM signed Memorandum of Collaboration with other professional rehabilitation NGOs “Ukrainian Society for NeuroRehabilitation” and “Ukrainian Association of Physical Therapy” and this NGOs’ block start countrywide activities for establishing the set of core rehabilitation specialties. First step in the direction is making changes in Ukrainian National Classificatory of Occupations according to world principles, establishing MDs of “Physical and Rehabilitation Medicine” and health related not MDs “Physical therapists” and “Ergotherapists”. Until now, several unsuccessful directives from Ministry of Public Health were issued. Finally, the activities reached Highest Ukrainian level. Ukrainian President Petro Poroshenko issued the Decree (December 3, 2015, N 678/2015) “About activation of work in relation to providing of rights for people with disabilities”. Paragraph 3.5) postulated: “...to provide until April, 1, 2016: ...development and claim of qualification descriptions of professions of “Ergotherapist” and “Ergonomist”, “doctor of Physical and Rehabilitation Medicine”, “Physical Therapist”, and also take measures in relation to initiating of education process for corresponding specialties”. For the day provisional educational activities (“teaching teachers”) are to be initiated followed by academic program establishing for re-educating existing MDs of “Physiotherapy” and “Treatment gymnastics” and starting postgraduate education for future MDs of “Physical and Rehabilitation Medicine”.

- **Occupational Therapists** are not existing in Ukraine.

The spectrum of rehabilitation professions does not fit to the worldwide and European standards (WHO 2015). There is no clear distinction of Medical doctors and Nurses working in the areas of Physiotherapy and treatment gymnastics and the differentiation between these areas does not make much sense. The number of PRM physicians is much too low. PRM should be developed as core specialty for rehabilitation medicine.
i) Rights of persons with disabilities
The comprehensive situation on the rights of person with disabilities is described in the “Initial reports of States Parties due in 2012 – Ukraine”, which was published as document CRPD/C/UKR/1 by the UN Convention on the Rights of Person with Disabilities, dated 12 November 2014 (UN Committee on the Rights of Persons with Disabilities 2014). This document gives a very comprehensive overview on the implementation of the UNCRPD in Ukraine including issues with legislation and life situation of persons with disabilities. Most of the containing information has been mentioned in above chapters.

Another important document is the report of the Ukrainian Coalition of Organizations of People with Disabilities (UCOPD) (2012). With regard to health and rehabilitation, the report gives some important recommendations, e.g.:

- To introduce training courses on disability awareness (…) and inclusive policy making in the system of training and re-training of the staff providing services for people with disabilities (…)
- To improve standards and methods of collection of official statistical data about people with disabilities and their needs (…)
- To establish an integrated approach to service provision (…)
- To ensure development and provision of community-based services for children with disabilities according to international standards
- To establish an effective system of targeted provision of individual technical rehabilitation and transportation equipment for people with disabilities (…).

A special challenge for the maintenance of human rights is the armed conflict in the Donbass region. This issue is discussed in chapter j 2 (see below).

j) Response to specific challenges (military operations, Chernobyl disaster)

1) Epidemiological consequences and countermeasures to the Chernobyl disaster
The explosion of the fourth reactor of the Chernobyl Nuclear Power Plant on 26 April, 1986 dispersed an enormous amount of radionuclides among large areas of Belarus, Ukraine, Russia and countries to the north and west from Ukraine.

Chronic health effects of radionuclide exposition resulting from the catastrophe include thyroid cancer (showing retarded incidence with peak up to 25 years after exposure, strong dose dependency risk rate, with particular vulnerability of persons exposed at the age 0-4 years, decreasing risk with increasing age at exposure) and leukemia (usually apparent 2-5 years after exposure). Other health condition postulated to be increased due to exposition include other solid cancers (particularly breast cancer), coronary artery disease, cataract (Cardis & Hatch 2011) mental disorders (Ivanov & Tsyb 1996) and congenital malformations (Bennett et al. 2006).

According to preliminary reports from Russia, 4.6% of the liquidator fatalities that occurred during the 12 years following the Chernobyl accident can be attributed to radiation-induced diseases. Among them, about 2.3% of the fatalities may have been caused by radiation-induced solid neoplasms, about 2.0% from circulatory system diseases and 0.3% from leukemia (Bennett et al. 2006).

The overall morbidity in Ukrainian liquidators increased 3.5-folds in the 10 years following the catastrophe (Serdyuk & Bobyleva 1998). Between the years 1988-2004 the rate of liquidators who were
considered healthy decreased from 67.6% to 5.3%, and the prevalence of chronic illnesses in this group increased from 12.8% to 81.4% (Yablokov 2009). Prevalence of disabilities among liquidators increased 76-fold (from 2.7/1,000 to 206/1,000) between the years 1988-2003 (Buzunov et al. 1995). Children of liquidators born after the catastrophe were taller and more overweight and less frequently considered healthy in comparison with a control groups in annual surveys performed between 1988 and 2005 (2.6–9.2% versus 18.6–24.6%) (Kondrashova et al. 2006). The rate of disability among liquidators began to rise sharply in 1991 and by the year 2003 had risen tenfold. Between the years 1987-1994 the rate of 1\textsuperscript{st} group disability increased from 9.6/1,000 to 23.2/1,000 among liquidators, from 2.1/1,000 to 9.5/1,000 among persons resettled from contaminated areas, while in the same period the rise of 1\textsuperscript{st} group disability in the whole Ukrainian adult population was from 0.5/1,000 to 0.9/1,000. Between 1988 and 2002 the prevalence of physical disabilities among adult persons evacuated from severely contaminated areas increased from 4.6 to 193 per 1,000 (Yablokov 2009).

Children exposed to radiation in utero had lower birth weight and worse health during the first year of life. Among 252 children in contaminated territories with a certified disability in 2004, 160 had congenital malformations and 47 had neoplasms. The rate of children considered healthy in affected territories decreased from 27.5 to 7.2% (from 3.2 to 0.5% in heavily contaminated areas between the years 1997-2005), and the rate of children with chronic health conditions rose from 8.4% in 1986–1987 to 77.8% in 2003. In the whole country, there was observed a gradual increase in the number of children with certified disability per 1,000: 3.1 (2000), 4.0 (2002), 4.5 (2003), 4.57 (2004) (Stepanova 1998; Horihna 2005; Stepanova 2006; Yablokov 2009). Essentially all liquidators obtained stable iodine in order to protect the thyroids. Acute radiation sickness was initially suspected in 237 patients. These patients were treated in the Institute of Biophysics, Moscow, and in several hospitals in Kiev. Later, in 1989, the diagnosis of acute radiation sickness was ultimately confirmed in 134 persons. All patients primarily suspected, regardless of diagnosis confirmation, were under long-term medical monitoring being carried out by the Institute of Biophysics (Russian Federation) and Research Center for Radiation Medicine (Ukraine). Shortly after the Chernobyl accident, a system of specialized dispensaries for annual medical examinations of liquidators was established. In Ukraine, 13 specialized dispensaries provide monitoring of liquidators health status. Four institutions provide a specialized health care for liquidators: Research Center for Radiation Medicine, Institute of Endocrinology, Institute of Urology and Institute of Neurosurgery in Kiev.

According to WHO report of 2006 shortly after the accident, the Ministries of Health of Belarus and Ukraine implemented preventive measures for inhabitants of the exposed territories. On the morning of May 23, 1986, the Governmental Commission issued an official instruction to the Ministries of Health of Russia, Belarus, and Ukraine on iodine preventive measures to be taken with respect to children living in rural areas with increased radioactivity levels. In the three countries, networks of diagnostic centers have been established in the most contaminated regions. These centers provide regular medical examinations of the population. In Ukraine, all children living in contaminated territories or born to parents exposed to radiation are regularly examined in dispensaries and out-patient clinics. The results of child health monitoring are collected at the National Registry of Ukraine, the Ministry of Health and at special sub-registries on hematology, endocrinology, and pediatrics at respective research institutes in Kiev. For child health rehabilitation, there are various centers and sanatoriums providing treatment free of charge. The composition of the team providing annual medical examinations for target population varies from state to state and includes the following specialists: internist, neurologist, endocrinologist, oncologist, hematologist, laryngologist, gynecologist, oph-
thalmologist, and pediatrician. Ultrasound examinations and whole-body-counter dosimetry may also be included. Laboratory examinations include routine investigations of blood, urine, and general biochemical analysis. Thyroid hormones are also investigated if needed. Within the framework of the UNESCO-Chernobyl Program, three centers in Ukraine are providing social and psychological rehabilitation of the affected population. The Ukrainian Association of Environmental Medicine has developed a program for identifying behavior among adolescents that place them at risk for reproductive health disorders (i.e. early onset of sexual intercourse often resulting in unwanted pregnancy, alcohol abuse or drug consumption, and socially unstable family). Countermeasures undertaken by Ukrainian government had been estimated by WHO as very extensive, though not evaluated relative to continuing need (Bennett et al. 2006).

WHO recommendations formulated in 2006 included: continuation of medical care and annual examinations of highly exposed liquidators, reexamination of the necessity and cost-effectiveness of follow-up programs for persons with exposures below 1 Gy; creation of better targeted programs to reduce infant mortality, promote healthy lifestyle and nutrition, prevention and early detection of cardiovascular diseases, and to improve the affected population's mental health; continuation and evaluated for cost/benefit of the thyroid cancer screening program; continuation of registries of exposed persons and studies of morbidity and mortality [16]. Further recommendation of an expert group supported the necessity to expand research of long-term effects of the acute radiation sickness taking into account the organ doses, and also to support survivors follow-up and medical care (including screening for leukemia and thyroid cancer), to monitor the incidence of leukemia among exposed due to the Chernobyl disaster, especially the children, assure further screening for thyroid cancer among particularly vulnerable subgroup of populations (children, adolescents and adults living in 1986 in the areas affected by radioactive fallout, and especially the children, exposed to high doses of radioactive iodine), maintain existing and project further study of the possible link between non-tumor diseases, especially circulatory, with the exposure. The UN ICRIN (International Chernobyl Research and Information Network) program including Ukraine and the network of UNESCO centers for psychological care have shown their efficiency for public communication, nevertheless as for 2011 the work in the field of risk communication, providing the public and decision-makers accurate information about the medical consequences of this disaster should be improved (Twenty-Five Years after the Chernobyl Accident. Safety for the Future. 2011).

2) Social and health consequences of the armed conflict in Donbass

The armed conflict lasting since March 2014 in Donbass (Donetsk and Luhansk regions) in eastern Ukraine affects people residing in the conflict zone and all their human rights. The United Nations reported growing lawlessness in the region, cases of targeted killings, torture, and abduction. In total, from mid-April 2014 to 15 November 2015, The United Nations Human Rights Monitoring Mission in Ukraine (HRMMU) recorded at least 29,830 casualties (Ukrainian armed forces, civilians and members of the armed groups) in the armed conflict area of eastern Ukraine, including at least 9,098 killed and at least 20,732 injured. More than 50% of all civilian casualties between August 16 and November 15, 2015 were injured due to explosive remnants of war and improvised explosive devices.

The protection cluster Ukraine prepared a series of recent and focused report on consequences of the armed conflict in relation to human rights. The information sheet on persons with disabilities, dated from October 2015, that the proportion of persons with disabilities among internally displaced persons is 4.16%. It stresses that persons with disabilities have to face increase barriers in access to
health services in the affected region. It further stresses that persons with injuries do have a high need of rehabilitation including psychological and psychosocial support, in many cases these needs will remain all the life long. It is stated that persons with disabilities suffer from higher distress as they might be separated from their caregivers including family members and that the environment is much less disability-friendly.

As for September 2014 at least 32 hospitals in Donbas were not functioning and about 17 hospitals were shelled and damaged. Access to emergency and primary health services, as well as specialized care for the entire Donbas region including chronic non-concomitant diseases, maternal and newborn care, blood products delivery, was restricted (OCHA 2014).

Lack of financial allocations from the State budget to cover healthcare expenses for displaced persons remained one of the biggest challenges in ensuring their access to healthcare. Regions with a high influx of internally displaced persons could not meet the existing needs, especially for vaccination or specialized medical care. Evacuees with mental impairments who require special care in psychiatric or social care institutions are sometimes placed in sanatoria, where the staff is not capable for addressing their special needs. Funds for their treatment are often insufficient, which leads to a deterioration of their condition (see consultation visit no 13, p. 36).

In the region not controlled by the Ukrainian Government, the suspension of the operation of organizations delivering humanitarian aid has a negative impact on access to medicines, consumables, expert medical services, psychosocial support. Médecins Sans Frontières (MSF) was ordered to stop all its activities in the territories controlled by the “Luhansk people’s republic” on 25 September 2015 and “Donetsk people’s republic” on 12 October 2015. In the territory controlled by the “Donetsk people’s republic”, MSF was providing 77% of the insulin needed for adults with diabetes and 90% of supplies required for haemodialysis for persons with renal failure. 146 patients with drug-resistant tuberculosis in penitentiary institutions will no longer receive treatment provided by MSF since 2011.

The situation in social care and specialized medical institutions remains critical, especially in the areas controlled by the “Luhansk people’s republic”. In Rovenky (Luhansk region; controlled by the armed groups) a care institution hosting 192 persons with disabilities, including 23 children was short of anticonvulsants for 39 patients suffering from epilepsy (Office of the UN High Commissioner for Human Rights 2015).

As a response to this situation, Ukraine health sector partners continue to address both, emergency needs in the conflict areas and medical needs for common illnesses. However, due to lack of funds, the response is fragmented and internally displaced persons’ access to health services is not guaranteed. In response, WHO is currently working with the Ukrainian Red Cross and other partners to establish Mobile Emergency Primary Health Care Units. Health sector partners have been asked to fortify the work and to focus also on other populations at risk.

7. Methods and work plan of the consultancy

The Physical Rehabilitation System Assessment has been developed on the basis of definitions and recommendations given by the World Health Organization and other international standards as well as the information gathered during a one week visit to the country. These visit included meetings with representatives of involved ministries, disability and rehabilitation experts, stakeholders in rehabilitation and Non-Governmental Organizations (including United Nations representatives and representatives of organization of persons with disabilities), and site visits to different types of rehabilitation service units. It is also based on available information about laws, regulations and standards provided by the WHO Country Office and associated partners. The consultants also made some
searches on information concerning population characteristics, epidemiology, and the national health system.

More in detail, this report is based on consultations with different stakeholders during one-week visit of the Consultants to Ukraine (December 6 to 15, 2015), written information about policies and legislations, statistical data, standards and curricula as well as a stakeholder dialogue (one-day workshop) on December 14, 2015. The consultants also participated in a conference of rehabilitation professionals on December 14, 2015 discussing issues on professional development of the rehabilitation workforce. Additionally, open sources of data about Ukraine and its health system were used. Last but not least the UN and WHO documents about disability, health and rehabilitation as well as internationally available documents on quality of care were also used.

**Consultations** were performed with:
1. Deputy ministers of  
   a. the Ministry of Public Health  
   b. the Ministry of Social Policy  
   c. the Ministry of Education and Science  
2. the National Assembly of Invalids  
3. the WHO DAR Sub-Cluster  
4. representatives of UNDP/OHCHR in Ukraine

**Site-visits** were performed at the following institutions:
- **in Kiev:**
  - the regional Hospital No 1 in Kiev (*acute rehabilitation*)  
  - the Research Institute of Orthopedics and Traumatology in Kiev (*subacute rehabilitation*)  
  - the District Centre for Social Rehabilitation (*community based and social rehabilitation*)  
  - the Clinical Sanatorium “Zhovten” (*sanatorium rehabilitation*)
- **in Dnepropetrovsk:**
  - Dnepropetrovsk Regional Centre of Medical and Social Examination (*regional level MSEC, medical and social examination, providing certification of “invalidity” status for persons*)  
  - State Institution «Ukrainian State Institute of Medical and Social Problems of Disability Ministry of Public Health of Ukraine» (*Tertiary care and research*)  
  - Dnepropetrovsk permanent child care boarding home (*children with disabilities long-term care and rehabilitation*)
- **and in Tsibli:**
  - Ukrainian State Medical and Social Centre for War Wounded

The planned visit in the Dnepropetrovsk Regional Clinical Hospital (*rehabilitation in hospital setting*) could not be done because of the delayed arrival in the city (*due to delay of flight*)

In the **stakeholder dialogue** representatives of the following bodies and institutions were included:
- NGO “Pulmonary Hypertension Association Ukraine”  
- NGO "Ecology and Health"  
- NGO “Ukrainian Society of Physical and Rehabilitation Medicine”  
- Institute of Emergency Surgery and Rehabilitation  
- NGO “Ukrainian Society for Neurorehabilitation”  
- NGO “Ukrainian Association of Physical Therapy” (UAPT)  
- All-Ukrainian NGO "Coalition for Persons with Intellectual Disabilities"  
- Handicap International  
- "Sphere of the Good" (Psychological rehabilitation)  
- Ministry of Health of Ukraine  
- WHO, Health Information and Emergency Response  
- Ukrainian Catholic University, School of Rehabilitation Medicine
- All-Ukrainian NGO "Ukrainian Association of Disabled Military Men"
- Fund of veterans "Unity Sworn"
- Association of NGOs of disabled people of Kyiv
- NGO "ATO Veterans Society"

The stakeholder dialogue was carried out by the following agenda
1. Introduction and overview of the project and presentation of main international principles of disability and rehabilitation
2. General discussion about goals and mission of the report
3. Discussion on each single recommendation followed by (written) voting on a prepared in-formation and voting sheet

Using these results the consultants concretized the expected outcomes and first-line actions as well as a list of projects that could be implemented immediately. All these processes were done in continuous discussion with the representatives of the WHO Country Office of Ukraine: Ganna Radysh (Emergency Response and Health Information Officer), Volodymyr Golýk (Disability and Rehabilitation Sub-Cluster Coordinator), and Oksana Syvak (WHO Liaison Specialist to Ministry of Public Health, Minister of Public Health Advisor). Volodymyr Gembrovych translated all visits and discussions.

8. Results of consultations and visits
The main findings can be summarized as follows:
- There is a common understanding among ministries and also among clinicians, WHO representatives and NGO’s that the rehabilitation system needs a reform including a better common understanding of disability, a modern structure of the rehabilitation workforce with higher level of training, and an increased capacity or rehabilitation services
- Responsibilities for disability and rehabilitation are split-up in two ministries: The Ministry of Public Health (with responsibility for “medical” or health-related rehabilitation) and the Ministry of Social Policy (with responsibility for social compensation but also for delivery of assistive devices). The Ministry of Education is also involved, as it is responsible for both coordinating and structuring of education system and accreditation of rehabilitation professionals’ training curricula. Lack of coordination between rehabilitation services offered by different ministries leads to deficits in outcomes (e.g. delivery of assistive devices, training of non MD specialists for rehabilitation).
- The understanding of disability and rehabilitation in Ukraine is based on a philosophy and definitions that are not compatible with the international understanding of disability as an interaction of a person with a health condition and the environment. This leads to deficits in disability data collection and planning of rehabilitation services as well as individual disability assessment and goal setting and thus alters rehabilitation outcomes
- The rehabilitation professionals are not trained according to international standards. This is obvious as the description of professions as well as the training curricula and accreditation criteria significantly differ from international and European standards. The number of rehabilitation professionals is insufficient too (e.g. low number and too short training of existing Rehabilitation Medicine doctors, no uniform concept for physiotherapy, no Occupational Therapy)
A couple of rehabilitation services exist, however, there is no systematic plan of rehabilitation services in acute, post-acute and long-term settings. Some rehabilitation units work in the way as it was implemented in the Soviet Union, and a few modern rehabilitation units have been established. However, these units are only single models that are not representative for overall health care system. This leads to significant deficits for rehabilitation care as well as bed blocking and waste of resources in (acute) hospitals. The delivery of assistive devices separated from health related rehabilitation services also leads to insufficient outcomes and waste of resources.

As specific challenge is the need for rehabilitation for victims of the armed conflict in eastern Ukraine. On the one hand there is a high number of wounded soldiers that in many cases also have severe mental trauma (so-called post traumatic stress disorder). The armed conflict also produces wounded and traumatized civilians with need for rehabilitation care.

9. Recommendations

a) General aspects

The following recommendations have been developed within the group of consultants and discussed with the representatives of the WHO Ukraine Country office. All recommendations were presented and discussed with Deputy Minister of Public Health, First Deputy Minister of Social Policy, Vice-President of National Academy of Medical Sciences, discussed and prioritized in the stakeholder workshop (see consultations/visits No 17 and 18) and revised after the discussion. Finally, explanations about expected outcomes as well as first line actions have been added by the group of consultants.

The recommendations of this plan are based on the following core principles:

1) As rehabilitation is one of four main health strategies and at the same time requires services within different sectors of the health system a strong coordination within the Ministry of Public health (optimally concentrated within one department) must be established.

2) As rehabilitation also concerns other life areas, such as social support, education, justice etc., a strong coordination in between ministries is indispensable (optimally as an inter-ministerial coordination committee at high level of responsibility).

3) For disability and rehabilitation policy and legislation as well as for data collection it is crucial to translate and adapt international definitions (e.g. functioning, disability) and tools (e.g. ICF-core-sets) into Ukrainian language.

4) For mid-term planning of rehabilitation services a sound database on the epidemiology of disability (including registry of chronic and mental diseases) and the need for rehabilitation must be established. It should use international (ICF-based) tools.

5) Establish a registry of existing of rehabilitation facilities (including quantity: number of institutions and beds; and quality in order to get a sound basis for planning of service provision meeting the needs of persons with disabilities (including chronic health conditions).

6) Health related rehabilitation services must be implemented at all levels of health care (primary, secondary, tertiary) and for all phases of health care (acute, post-acute, long-term) (see below). As in Ukraine many rehabilitation services already exist, a transition plan should be developed. The primary health care sector needs to take a stronger role in long-term rehabilitation and as an entrance point for specialized rehabilitation services.
7) Establish an **adequate, motivating and fair payment system for interventions of rehabilitation medicine**. Regarding the international experiences, «pay per case» system which take into account the severity of case is recommended

8) Establish and implement **minimal standards for employment of health professionals** in the rehabilitation institutions

9) In order to **establish a high-qualified rehabilitation workforce according to international definitions, nomenclature and curricula of rehabilitation professions** according to the WHO classification of health workers (*medical doctors, therapists, nurses, social workers, psychotherapists and others*) should be implemented (see below) and a new accreditation system should be implemented. Here also, a transition plan is required.

10) Establish a system for **supplementary, compulsory and continuous education** of currently practicing physician in rehabilitation field after identifying the clinical-practical needs and goals (clinical topics) regarding the current situation in the country, using external expertise (e.g. ISPRM, UEMS PRM Section and Board).

11) In light of the armed conflict in eastern Ukraine, the **special needs of persons with disability living in the region** as well as the **expansion of rehabilitation services for victims** should be realized

12) Implement a **policy of return to work as one of the main goals** and results of rehabilitation interventions. Functional aspects of disability should be based on International Classification of Functioning (ICF) and basis for financial beneficiary, return to work or working place adaptation.

**b) Implementation of health-related rehabilitation services and recommendations for transition from the existing system**

As mentioned above, **health-related rehabilitation services** should be implemented in all phases and at different levels of health care. The types of service can be described as follows:

A. **Acute rehabilitation services**: Acute rehabilitation services are **delivered in hospitals at the secondary and tertiary levels**. The target group are patients with severe disease or injury in risk of long-term disability. Acute rehabilitation services should start even during intensive care and should be performed in multi-professional teams (*including, PRM doctor, PT, OT, and other rehabilitation professionals*). Acute rehabilitation services may be delivered in specialized acute rehabilitation wards or in mobile acute rehabilitation teams.

B. **Post-acute rehabilitation services**: Post-acute rehabilitation services should be **delivered immediately or shortly after discharge from acute care hospitals**. The target groups are patients with persisting impairment activity limitations and participation restrictions after acute care or trauma. Post-acute rehabilitation services improve functioning (including participation) and can contribute to an earlier discharge from hospital. For more severe cases (with limitations in mobility and activities of daily living) post-acute rehabilitation should be done in in-patient post acute rehabilitation units. Patients with less restrictions they patients also can be referred to out-patient post acute rehabilitation units. For patients with minor deficits services may be sufficient. Post-acute rehabilitation services should be specialized for the specific disease or trauma and also must have a multi-professional rehabilitation team.

C. **Long-term rehabilitation services**: Long-term rehabilitation services aim to improve functioning for **persons with long-term disability including congenital disability, acquired disa-
bility and chronic diseases. They also are the main entrance point for more specialized rehabilitation if needed. Long term rehabilitation can be performed by rehabilitation professionals (e.g. PRM doctors, PT’s, OT’s). In many cases, primary health care professionals (e.g. family doctors, primary health care rehabilitation workers) may take an important role in long-term rehabilitation. Long term rehabilitation can be delivered in primary care rehabilitation centres and as mono-professional long-term rehabilitation services. If no specialized rehabilitation exists, Community Based Rehabilitation (CBR) is a model to provide some rehabilitation service to persons in need. It should be closely connected to an inclusive community Development Policy (CBD). Intermittent in-patient rehabilitation services can be used to induce and booster rehabilitation effects in patients with chronic health conditions, in particular if they are related to psychosocial stress and vocational problems.

Table 6 summarizes the described rehabilitation services in a matrix. For detailed criteria as well as descriptions and classification of services, see appendix 1.

**Table 6**: Matrix of rehabilitation services (**bold**: core centers at the respective level; **italic**: optional)

<table>
<thead>
<tr>
<th>Type of service</th>
<th>A. Acute care</th>
<th>B. Post-acute care</th>
<th>C. Long-term-care</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tertiary level of health care</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.1: Acute rehabilitation wards</td>
<td></td>
<td>B.1: In-patient post acute rehabilitation unit</td>
<td>--</td>
</tr>
<tr>
<td>A.2: Mobile acute rehabilitation teams</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Secondary level of health care</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.2: Mobile acute rehabilitation teams</td>
<td></td>
<td>B.1: In-patient post acute rehabilitation unit</td>
<td>C.1: Intermittent in-patient rehabilitation service</td>
</tr>
<tr>
<td>B.2: Out-patient post acute rehabilitation unit</td>
<td></td>
<td>B.3: Mono-professional post-acute services</td>
<td></td>
</tr>
<tr>
<td><strong>Primary level of health care</strong></td>
<td></td>
<td>B.2: Out-patient post acute rehabilitation unit</td>
<td>C.2: Primary care rehabilitation centres</td>
</tr>
<tr>
<td>--</td>
<td></td>
<td>B.3: Mono-professional post-acute services</td>
<td>C.3: Mono-professional long-term services</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>C.4: Community Based Rehabilitation Service</td>
</tr>
</tbody>
</table>

Referring to the descriptions of rehabilitation services the following changes in service structure and provision are recommended: (**bold**: core centers at the respective level; **italic**: optional)

<table>
<thead>
<tr>
<th>Phase of health care</th>
<th>Rehabilitation service type (recommended standard see above and in appendix 1)</th>
<th>Existing services that may be used as starting point for transition (descriptions see p.22ff.)</th>
<th>Principles of transition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute care</td>
<td>A.1: Acute rehabilitation wards</td>
<td>Restorative treatment units</td>
<td>These units may be used as a basis of implementing acute rehabilitation wards. In this case they must be enlarged and empowered by implementing multi-professional rehabilita-</td>
</tr>
<tr>
<td>Post-acute care</td>
<td>A.2: Mobile acute rehabilitation teams</td>
<td>Rehabilitation services (<em>workforce</em>) in general hospitals</td>
<td>The rehabilitation professionals working in general (<em>acute</em>) hospitals can be the cores of these services. They should be trained according to international standard, and professions not yet existing should be trained and integrated. These professionals should also work in multi-professionals teams under the direction of a PRM doctor. (ideally such services should be combined with Acute Rehabilitation Wards (A.1))</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>B.1: In-patient post acute rehabilitation unit</td>
<td>Restorative treatment hospitals and restorative treatment units in other hospitals, Hospitals for Wars veterans. Physiotherapy and allied therapy hospitals and sanatoriums may also be a basis to establish in-patient post-acute rehabilitation services</td>
<td>The existing restorative treatment units can be developed into in-patient rehabilitation units or departments. Here also multi-professional teams including all relevant rehabilitation professionals are required. These teams must be under the leadership of a PRM physician. For Physiotherapy and allied therapy hospitals and sanatoriums the same standards must be established</td>
<td></td>
</tr>
<tr>
<td>B.2: Out-patient post acute rehabilitation unit</td>
<td>Out-patient departments of former restorative treatment hospitals (<em>in future In-patient post acute settings</em>) Out-patient rehabilitation in so-called policlinics.</td>
<td>The same team (<em>part of the team using rotation or shift principle</em>) from in-patient rehab facilities is providing rehab service in out-patient regimen. The existing out-patient rehabilitation services are not sufficient for comprehensive post-acute rehabilitation services. They must be enlarged and equipped with multi-professional teams including all relevant rehabilitation professionals are required. Also here, the teams must be under the leadership of a rehabilitation physician.</td>
<td></td>
</tr>
<tr>
<td>B.3: Mono-</td>
<td>Out-patient reha-</td>
<td>Here the transition of therapists is needed,</td>
<td></td>
</tr>
</tbody>
</table>
### Long-term care

<table>
<thead>
<tr>
<th>Professional post-acute services</th>
<th>Bilitation in so-called policlinics</th>
<th>However the service delivery in policlinics (primary health care centres) is appropriate</th>
</tr>
</thead>
</table>

**C.1: Intermittent in-patient rehabilitation service**

- Sanatoriums, Hospitals for Wars veterans.

Sanatoriums and Hospitals for Wars veterans may be a good basis for the implementation of intermittent in-patient rehabilitation services for patients with chronic disabling health conditions. However, they must focus on participation (employment) and therefore need more active treatments and a wider spectrum of rehabilitation professionals (*including* psychotherapists, social workers, occupational (ergo-) therapists).

**C.2: Primary care rehabilitation centers**

- Out-patient rehabilitation services in so-called policlinics

With adaptation of professions to international standards.

**C.3: Monoprocessional long-term services**

- Out-patient rehabilitation services in so-called policlinics

With adaptation of professions to international standards.

**C.4: Community Based Rehabilitation Service**

- Primary health care worker in the community (*providing basic services and in particular support referral to more specialized services*)

Primary health care services could be offered by MD and therapists working in the community (*especially in rural areas*) and coordinated by the Medical and Social Expert Commissions (MSEC).

---

The role of hospices for persons with long-term disabilities should be evaluated in a separate project.

**c) Implementation of a rehabilitation workforce and recommendations for transition from the existing system**

According to International and European standards the rehabilitation workforce includes the following professions (*for names and specification of health professions see WHO 2015*):

**A. Rehabilitation physicians:**

   a. Physical and Rehabilitation Medicine specialists
   
   b. Other specialists trained (*subspecialized*) in Rehabilitation Medicine (*e.g.* Neurologists trained in Neurorehabilitation; they should accomplish rehabilitation teams in patients with special needs, *e.g.* SCI, mental disease etc.)

**B. Therapists:**

   a. Physiotherapists
   
   b. Occupational Therapists
c. Speech and Language Therapists  
d. If needed, other therapists for specific tasks (e.g. in cancer rehabilitation)

C. Other health and social professions:  
a. Prosthetist/Orthotist  
b. Rehabilitation Nurses  
c. Social Workers  
d. Psychotherapists  
e. Other professions involved in rehabilitation services (e.g. case managers)

Referring to the definitions of rehabilitation professions, the following changes in the structure of the rehabilitation workforce and accreditation system are recommended:

<table>
<thead>
<tr>
<th>Type of profession</th>
<th>Name of profession or specialization</th>
<th>Existing profession that may be used as starting point for transition (descriptions see p. 27ff.)</th>
<th>Principles of transition (the details should be elaborated in specific projects)</th>
</tr>
</thead>
</table>
| **Medical doctors (physicians)** | Physical and Rehabilitation Medicine | Full training of Medical doctors Transition from Neurologists, Orthopaedic Surgeons and other specialists actually working in rehabilitation Medical doctors of Physiotherapy or Treatment Gymnastics | A minimum of 4 years of postgraduate training (according to UEMS standards)  
Neurologists, Orthopaedic Surgeons and other specialists working in rehabilitation can undergo additional training (e.g. 6 weeks theoretical course + 1 year of practical training)  
Medical doctors of Physiotherapy or Treatment Gymnastics will need a minimum of 2 years practical training in clinical rehabilitation and a 6 weeks theoretical course |
| Subspecialisation in rehabilitation treatments | Other doctors working in rehabilitation field | 6 week theoretical course aiming at enabling them for prescription of rehabilitation interventions and referral to specialized rehabilitation services |
| **Therapists** | Physiotherapists | Full training and/or transition for nurses, instructors and other health professionals, e.g. for physical therapy, treatment gymnastics and massage | 4 year theoretical and practical training for full training  
1 year practical training including hands-on courses on modern methods in physiotherapy |
| Occupational therapists | Full training and/or transition from other health professionals, e.g. treatment gymnastics | 4 year theoretical and practical training for full training  
1 year practical training including hands-on courses on modern methods in occupational therapy |
And, in addition, primary health care workers trained in basic rehabilitation issues. In most rehabilitation services and, in particular, in acute and post-acute rehabilitation services multi-professional teamwork is seen as standard.

**d) Comprehensive list of recommendations, expected outcomes and first line activities**

The detailed recommendations are structured according to the recommendation of the most relevant chapters of the World Report on Disability (WHO & World Bank 2011); i.e. general health care
and rehabilitation. The main focus is on the chapter rehabilitation of the WRD (including policies, data collection, rehabilitation, assistive devices and others). Additionally, some recommendations derived from the specific situation of Ukraine are added. The areas of assistance and support, enabling environments, education, as well as work and employment are not covered by this report.

<table>
<thead>
<tr>
<th>No</th>
<th>WRD chapter</th>
<th>Recommendation area from the WRD</th>
<th>Plan goal of the National Disability Health and Rehabilitation Plan for Ukraine</th>
<th>Expected outcomes</th>
<th>First line actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Disability – a global picture</td>
<td>Adopt the ICF</td>
<td>Use the ICF model to understand and define disability as an interaction of a person with a health condition with the environment and use it as a basis for legislation and decision making</td>
<td>A common understanding of disability and functioning as well as the use of an internationally accepted classification will ensure clarity in policies and decision making at all levels. It is also the basis for international benchmark (i.e. within Europe) It is also the basis for a common understanding of disability as an interaction of a person with a health condition and the environment</td>
<td>Review laws and regulations concerning disability and rehabilitation if they fit in to the ICF model and if not adapt them to this model Develop a Ukrainian translation of the words “disability” and “functioning” appropriate to the internationally accepted definitions</td>
</tr>
<tr>
<td>2.</td>
<td>Improve national disability statistics</td>
<td>Perform a survey on the prevalence and severity of disability using the Model Disability Survey or the ICF Core set approach (e.g. starting in one or two regions)(see list of recommended projects)</td>
<td>A good database is a precondition to develop a plan to implement rehabilitation services responding appropriately to the needs of persons with disabilities (including those resulting from physical and mental conditions as well as from chronic health conditions and ageing). If data collection is done with internationally comparable data, a comparison and benchmark with other countries will be possible.</td>
<td>Translate the International Classification of Functioning, Disability, and Health into Ukrainian Language Translate internationally accepted assessment tools on disability and health and adapt them culturally Perform a survey on the prevalence on disability (e.g. based on the Model Disability Survey or the ICF Core Sets). It is recommended to do the survey at least in two model regions. Such survey should be appropriate to assess the needs for rehabilita-</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Improve the comparability of data</td>
<td>Use the ICF Classification, and in particular, the ICF core sets for data collection on disability at the population level and for rehabilitation assignment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Develop appropriate tools and fill the research gaps</td>
<td>Translate and implement the ICF core sets into Ukrainian language and develop culturally adapted assessment tools for ICF based data collection</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Expected outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A common understanding of disability and functioning as well as the use of an internationally accepted classification will ensure clarity in policies and decision making at all levels. It is also the basis for international benchmark (i.e. within Europe) It is also the basis for a common understanding of disability as an interaction of a person with a health condition and the environment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>First line actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review laws and regulations concerning disability and rehabilitation if they fit in to the ICF model and if not adapt them to this model Develop a Ukrainian translation of the words “disability” and “functioning” appropriate to the internationally accepted definitions</td>
</tr>
<tr>
<td>Translate the International Classification of Functioning, Disability, and Health into Ukrainian Language Translate internationally accepted assessment tools on disability and health and adapt them culturally Perform a survey on the prevalence on disability (e.g. based on the Model Disability Survey or the ICF Core Sets). It is recommended to do the survey at least in two model regions. Such survey should be appropriate to assess the needs for rehabilita-</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>5.</td>
</tr>
<tr>
<td>6.</td>
</tr>
<tr>
<td>7.</td>
</tr>
<tr>
<td>8.</td>
</tr>
<tr>
<td>9.</td>
</tr>
<tr>
<td>10.</td>
</tr>
</tbody>
</table>
11. habilitation services, interventions, human and technical resources, financing), and, if not coordinated by the same sector, create a coordinating committee to ensure coordinated action and development of comprehensive concepts. Assure the coordination of development of disability laws, regulations and implementation activities by establishing an Inter-ministerial Standing Committee on Disability and Rehabilitation (ISCDR) with members of the Ministry of Public Health, Ministry of Social Policy, Ministry of Education, Ministry of Infrastructure, Ministry of Justice, Ministry of Defense (and, if necessary other ministries). A rule must define that this committee must be consulted before any relevant decision in the area of disability is made. The committee may consult non-governmental expertise such as WHO, NGO’s, academic institutions.

12. Data collection

<table>
<thead>
<tr>
<th>Data collection</th>
<th>Implement ICF core sets at all levels of data collection on disability including rehabilitation assignment and evaluation:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• for general health reporting: the Generic ICF Core set;</td>
</tr>
<tr>
<td></td>
<td>• for disability assessment throughout the health services: the Disability Core set</td>
</tr>
<tr>
<td></td>
<td>• for disability related to specific diseases: the</td>
</tr>
</tbody>
</table>

Analyzing the prevalence of disability and the need for rehabilitation within populations it is precondition to plan rehabilitation services that meet the needs of persons with disabilities. Data on disability are also crucial for the assignment of individuals to rehabilitation services and for the evaluation of rehabilitation outcomes. As mentioned above such data collection should be based on implementation of Public Health. This department at least must get responsibility for data collection on disability, planning for rehabilitation services at all levels and in all phases of health care as well as quality standard and control.

Establish an Inter-ministerial Standing Committee on Disability and Rehabilitation (ISCDR) with members of all ministries with core responsibilities in disability and rehabilitation policies, i.e. Ministry of Public Health, Ministry of Social Affairs, Ministry of Education and also involving Ministry of Justice, Ministry of Public Development and others. The commission must be composed of persons with high-level responsibility and should be consulted before every decision relevant for disability and rehabilitation.

Implement ICF core sets into data collection at health systems and service levels. Implement ICF based assessment and assignment tools into rehabilitation assignment and evaluation at the individual level (including the Commissions of Medical and Social Expertise)
| 13. | Financing | Ensure that all types of health related rehabilitation services (including assistive technologies) are fully covered by the health financing system. Implement a payment system giving rewards for high quality and high intensity rehabilitation services and interventions (e.g. as procedures within the Diagnosis Related Group System (DRG), Functional Related Groups (FRG), or intervention based payment). | In order to avoid ineffective use of resources it is important to integrate all health-related rehabilitation services under one responsibility including funding of service delivery. This principle should be applied for rehabilitation services including rehabilitation medicine, therapies and assistive devices. There is evidence that outcome-oriented financing systems and/or systems that reward efficient use of resources lead to more efficient service delivery. | Integrate the delivery of assistive technology into the health system (under responsibility of Ministry of Public Health). Implement a reward oriented payment system into rehabilitation services. |
| 14. | Human resources | Adopt the international definitions, responsibilities and requirements of all relevant professions in health-related rehabilitation and develop an accreditation system for these professions. These are (based on the WHO classification of health workers): 1. Medical doctors specialized in Physical and Rehabilitation Medicine (minimum training: 4 years of postgraduate theoretical and practical training) 2. Physiotherapists (minimum training: 4 years of theoretical and practical training) 3. Occupational Therapists | A rehabilitation workforce should be trained and integrated into rehabilitation services. At international (end in particular, at European) level a spectrum of professions has been defined and developed. The Ukraine should use this models to develop its rehabilitation workforce. This also enables exchange of concepts and mobility well trained professionals with other European countries. | Develop and implement curricula and accreditation rules for the professions mentioned in column 4. Develop and implement a transition plan for existing rehabilitation professionals. |
pists (minimum training: 4 years of theoretical and practical training)
4. Speech and Language Therapists (minimum training: 4 years of theoretical and practical training)
5. Prosthetics and Orthotics (minimum training: 3 years of theoretical and practical training)
6. Psychotherapists (Psychologists) (minimum training: 5 years of theoretical and practical training)
7. Social Workers (minimum training: 5 years of theoretical and practical training)
8. Rehabilitation nurses (minimum training: 3 years of theoretical and practical training)

Develop a transition plan to immediately increase the capacity of well-trained rehabilitation professionals in the above mentioned categories.
Identify or create schools or other teaching institutions (including teaching hospitals) to implement curricula according to the accreditation criteria.
Establish a system for continuous medical education for currently practicing physician in the field of rehabilitation.

15. Service delivery

Classify existing rehabilitation services according to the International Classification of Service Organizations in Rehabilitation (ICSO-R), analyze

Similar to the rehabilitation workforce international (and European) standards on rehabilitation service delivery exist and should be used for

Develop a rehabilitation service implementation plan based on an international framework on rehabilitation services (see
their distribution within the country and identify gaps. Implement comprehensive rehabilitation services in all phases of health care, (see appendix 1) i.e. in
- Acute care (early rehabilitation in hospitals)
- In post-acute-care (post-acute rehabilitation e.g. within hospitals, alone-standing rehabilitation institutions or sanatoriums)
- Long-term-care (rehabilitation at primary care level, e.g. outpatient primary health care centres, alone standing practices of PRM, and Community Based Rehabilitation Services)

Analyze availability of basic rehabilitation services and pathways for access to rehabilitation services in the community and develop and implement a country adapted community based rehabilitation services for all regions.

Develop a transition plan to integrate existing services in the comprehensive rehabilitation services plan e.g. by developing basic services to higher qualification levels (e.g. sanatoriums to in-patient post acute rehabilitation institutes)

Ensure that policies of disability compensation support rehabilitation outcomes such as return-to-work.

the Ukraine. The use of a framework ensures that existing rehabilitation services can be analyzed and integrated into a comprehensive rehabilitation system. This also makes sure that gaps will be identified.

These activities must be linked to the development of the rehabilitation workforce (see no 14) and integrate vocational rehabilitation services.

Analyze existing rehabilitation services according to the framework and make a transition plan to integrate them where appropriate.

Identify and close gaps in rehabilitation service delivery.
<table>
<thead>
<tr>
<th></th>
<th>Implement evidence-based guidelines and clinical pathways into all rehabilitation services (including referral systems) as well as and a comprehensive quality management. Include expertise of specialized rehabilitation physicians (Specialists for Physical and Rehabilitation Medicine) into Medical and Social Evaluation Commissions to ensure high qualified rehabilitation assessments at international standards of decision making. Integrate vocational rehabilitation services and education programs into the existing rehabilitation system and, in particular, link it to health-related rehabilitation services.</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.</td>
<td>Technology</td>
</tr>
<tr>
<td>17.</td>
<td>Research and evidence-based practice</td>
</tr>
<tr>
<td>18. Other issues</td>
<td>Terminology</td>
</tr>
</tbody>
</table>

| 19. | Translation of documents | Translate relevant WHO documents into Ukrainian language (i.e. the ICF, the WRD and the GADP), and develop culturally adapted ICF check lists and assessment tools into Ukrainian language | See no 1 | See no 1 |

| 20. Education and media campaigns | Perform a **media campaign to increase the awareness** on and acceptance for disability issues in general public | **Awareness of the population and its attitudes towards disability** is a precondition for an inclusive society. It can be improved by media campaigns | See column 4 |

| 21. Mission follow-up | Perform a **stakeholder workshop with all relevant decision makers and stakeholders** (ministries, professional groups, organizations of persons with disabilities, service providers, scientific institutes) to discuss and prioritize all recommendations given in this plan as well as on the projects and implementation model | It is important to integrate important stakeholders and, in particular, organizations of persons with disabilities and expert organizations (professional organizations, scientific societies) in the planning and decision making in rehabilitation. **External support** might be useful to use experiences in other countries and international expertise | |

| 22. Re- | Military | Evaluate the life situa- | |
10. Projects of model implementation

The following projects are recommended for implementation as soon as possible (the contents are responding to above listed recommendations and will contribute to its implementation):

1. Perform an expert workshop (Ukrainian health professionals, NGO’s, WHO CO and Head Quarters, Linguists, Experts from other Slavic speaking countries) to find and agree on an appropriate translation of term “disability”, “functioning”, and other related terms

2. Perform a project to adapt the ICF for use in Ukraine and testing the products within selected services

3. Perform a population-based survey of the prevalence on disability with internationally accepted methods in two regions of Ukraine

4. Implement multi-professional rehabilitation teams in a couple of services and evaluate the
5. **Define, implement model rehabilitations services develop a transition plan for existing services**, and evaluate outcomes:
   a. **Acute rehabilitation services** in two hospitals at secondary and tertiary level
   b. **Post-acute rehabilitation service** in at least two indications (e.g. stroke, limb amputation, multiple trauma or cardiac surgery) (one of them could integrate existing sanatorium)
   c. **Long-term service** (e.g. community based service in rural area)

6. Implement model services for
   a. An **integrated delivery and integration of assistive devices in medical rehabilitation programs**
   b. One or two projects of **integrated medical and vocational rehabilitation**

7. **Develop accreditation criteria, curricula and transition plan for rehabilitation professionals** according to the “choosing the best” from international models (i.e. development of a curriculum of Physical and rehabilitation Medicine specialists according to the standards of the European Board of Physical and Rehabilitation Medicine)

8. Immediately organize **education and training courses for rehabilitation professionals** with international support

9. Develop a **model for an adequate, motivating and fair payment system for rehabilitation services** and (taking into account international experiences, »pay per case« system which take into account the severity of case is recommended)

10. Perform a **survey on existing rehabilitation facilities** (number of rehabilitation institutions, departments and beds).

**11. Evaluation Strategy**

The actions taken according to the National Disability Health and Rehabilitation Plan for Ukraine **should be evaluated**. It is proposed to do this along the proposed inputs for Member States of the WHO Global Disability Action Plan 2014-2021. This should include:

- Check the coordination of disability and rehabilitation activities at the government level
- Check the progress of adoption of international definitions and standards in disability and rehabilitation
- Review of the data base on disability and rehabilitation needs in the Ukraine
- Review the progress implementing health-related rehabilitation services along international standards (including development of existing services)
- Review the progress implementing rehabilitation services according to international definitions, curricula and accreditations standards for rehabilitation professionals (including development of existing professions)
- Change in knowledge and attitude towards disability in health professionals (and general population)
- and others (related to specific projects).

More details will be given, as soon as concrete projects will be decided and the methodology will be set up.

It also is **recommended to evaluate the actions that have been taken after this report** (e.g. after a two-years period).
## Appendix 1: Description of (model) rehabilitation services on the basis if the proposed International Classification of Service Organization in Rehabilitation (ICSO-R) (see Gutenbrunner et al. 2015)

### A. Acute rehabilitation services

<table>
<thead>
<tr>
<th>ICSO-R Dimension</th>
<th>A.1 Acute rehabilitation ward</th>
<th>A.2 Mobile acute rehabilitation team</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provider</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Location</td>
<td>Centralized (within hospital and/or other hospital/clinic nearby hospital)</td>
<td>Centralized (within hospital)</td>
</tr>
<tr>
<td>1.2. Organization</td>
<td>Integrated in hospital services or independent organization with close collaboration with the hospital</td>
<td>Integrated in hospital services</td>
</tr>
<tr>
<td>1.3. Context</td>
<td>Hospital based, within clinical institution</td>
<td>Hospital based</td>
</tr>
<tr>
<td>1.4. Facility</td>
<td>Hospital ward</td>
<td>Service in hospital wards</td>
</tr>
<tr>
<td>1.5. Human resources</td>
<td>PRM doctor (or other doctor trained in acute rehabilitation), Physiotherapists, Occupational Therapists, Speech and Language Therapist, Dysphagia Therapist, Rehabilitation Nurse, Psychologist, Social worker</td>
<td>PRM doctor (or other doctor trained in acute rehabilitation), Physiotherapists, Occupational Therapists, Speech and Language Therapist, Dysphagia Therapist, Rehabilitation Nurse, Psychologist, Social worker</td>
</tr>
<tr>
<td>1.6. Technical resources and equipment</td>
<td>Barrier-free ward structure (feasible also for wheelchair users), therapy room, devices for early mobilization, and activities of daily living, splinting, and material for other therapies. (Diagnostic equipment of hospital also required)</td>
<td>Barrier-free ward structure (feasible also for wheelchair users), therapy room, devices for early mobilization, activities of daily living, splinting, and material for other therapies. (Diagnostic equipment of hospital also required)</td>
</tr>
<tr>
<td>1.7. Quality assurance</td>
<td>Rehabilitation assessment, regular documented team meeting on the patients functioning</td>
<td>Rehabilitation assessment, regular documented team meeting on the patients functioning</td>
</tr>
<tr>
<td>1.8. Profit orientation</td>
<td>Depending on health system and ownership</td>
<td>Depending on health system and ownership</td>
</tr>
<tr>
<td>Funding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1. Source of money</td>
<td>Depends on health funding system</td>
<td>Depends on health funding system</td>
</tr>
<tr>
<td>2.2. Criteria of cost refund (DRG-system, day-based payment, or other systems)</td>
<td>Depends on health funding system</td>
<td>Integrated in hospital financing</td>
</tr>
<tr>
<td>Service delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1. Strategy</td>
<td>Early rehabilitation (mainly training body functions and activities, preparing for participation, support coping with disease), prevention of complications of treatments and immobilization, maintenance of body functions. In cases with unclear prognosis overlap with palliation</td>
<td>Early rehabilitation (mainly training body functions and activities, preparing for participation, support coping with disease), prevention of complications of treatments and immobilization, maintenance of body functions. In cases with unclear prognosis overlap with palliation</td>
</tr>
<tr>
<td>3.2. Target groups</td>
<td>Patients with acute disease and after trauma with severe impairment and/or risk of long-term disability. Patients must have capacity for active treatments</td>
<td>Patients with acute disease and after trauma with severe impairment and/or risk of long-term disability. Patients with need for intensive care may be included</td>
</tr>
<tr>
<td>3.3. Service goals</td>
<td>Basic mobility (indoor) and independent self care. Patients at discharge must be medically stable and meet admission criteria for post-acute rehabilitation or treatment in nursing home</td>
<td>Basic mobility (indoor) and independent self care. Patients at discharge must be medically stable and meet admission criteria for post-acute rehabilitation or treatment in nursing home</td>
</tr>
<tr>
<td>3.4. Aspects of time</td>
<td>Acute and early post acute phase</td>
<td>Acute and early post acute phase</td>
</tr>
<tr>
<td>3.5. Intensity</td>
<td>High intensity (two or more types of treatment, treatments seven day per week, mostly more than two treatments per day)</td>
<td>High intensity (two or more types of treatment, treatments seven day per week, mostly more than two treatments per day)</td>
</tr>
<tr>
<td>3.6. Team structure</td>
<td>Interdisciplinary team structure with all professions involved in treatment process (see 1.5)</td>
<td>Interdisciplinary team structure with all professions involved in treatment process (see 1.5)</td>
</tr>
<tr>
<td>3.7. Mode of production</td>
<td>In-patient service in specially dedicated wards</td>
<td>In-patient service in ICU’s and other wards</td>
</tr>
<tr>
<td>3.8. other categories of service delivery</td>
<td>Depending on technical equipment and team structure patients with mechanical ventilation can be treated too</td>
<td>Services can also be delivered in intensive care units</td>
</tr>
</tbody>
</table>

### B. Post acute rehabilitation services
<table>
<thead>
<tr>
<th>Service type</th>
<th>B.1 In-patient post acute rehabilitation unit</th>
<th>B.2 Out-patient post acute rehabilitation unit</th>
<th>B.3 Mono-professional post-acute services</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.1. Location</strong></td>
<td>Centralised or decentralised</td>
<td>Decentralised services (in reach to the patients living context)</td>
<td>Decentralised services (close to the patients living context)</td>
</tr>
<tr>
<td><strong>1.2. Organization</strong></td>
<td>Integrated in hospital services or independent organization with structure referral system</td>
<td>Integrated in hospital services or independent organization with structure referral system</td>
<td>Integrated in hospital services or independent organization with structure referral system</td>
</tr>
<tr>
<td><strong>1.3. Context</strong></td>
<td>Hospital-based or alone standing in-patient centre</td>
<td>Hospital-based or alone standing out-patient centre</td>
<td>Hospital-based or alone standing practice of (single) rehabilitation professional</td>
</tr>
<tr>
<td><strong>1.4. Facility</strong></td>
<td>In-patient service structure</td>
<td>Day clinic service structure</td>
<td>Treatment services only</td>
</tr>
<tr>
<td><strong>1.5. Human resources</strong></td>
<td>PRM doctor (or other doctor trained in acute rehabilitation), Physiotherapists, Occupational Therapists, Speech and Language Therapist, Dysphagia Therapist, Rehabilitation Nurse, Psychologist Social worker (depending on indication of treated patients)</td>
<td>PRM doctor (or other doctor trained in acute rehabilitation), Physiotherapists, Occupational Therapists, Speech and Language Therapist, Dysphagia Therapist, Rehabilitation Nurse, Psychologist Social worker (depending on indication of treated patients)</td>
<td>PRM doctor, Physiotherapists, Occupational Therapists, Speech and Language Therapist, Dysphagia Therapist, or Psychologist Social worker</td>
</tr>
<tr>
<td><strong>1.6. Technical resources and equipment</strong></td>
<td>Basic diagnostic equipment for patients follow-up (depending on indication of patients), specialised treatment facilities, medical training, return-to normal life are, vocational training, gym, pool and others</td>
<td>Basic diagnostic equipment for patients follow-up (depending on indication of patients), specialised treatment facilities, medical training, return-to normal life are, vocational training, gym, pool and others</td>
<td>Specialised treatment facilities</td>
</tr>
<tr>
<td><strong>1.7. Quality assurance</strong></td>
<td>Rehabilitation assessment, regular documented team meeting on the patients functioning</td>
<td>Rehabilitation assessment, regular documented team meeting on the patients functioning</td>
<td>Mono-professional assessment</td>
</tr>
<tr>
<td><strong>1.8. Profit-orientation</strong></td>
<td>Depending on health system and ownership</td>
<td>Depending on health system and ownership</td>
<td>Depending on health system and ownership</td>
</tr>
<tr>
<td><strong>Funding</strong></td>
<td>Depends on health funding system</td>
<td>Depends on health funding system</td>
<td>Depends on health funding system</td>
</tr>
<tr>
<td><strong>2.1. Source of money</strong></td>
<td>Per-day or single therapies refund or other funding systems</td>
<td>Per-day or single therapies refund or other funding systems</td>
<td>Single therapies refund</td>
</tr>
<tr>
<td><strong>2.2. Criteria of cost refund (DRG-system, day-based payment, or other systems)</strong></td>
<td>Post acute rehabilitation (treatment of impaired functions and activities, independent living, return to normal life and/or job, empowerment)</td>
<td>Post acute rehabilitation (treatment of impaired functions and activities, independent living, return to normal life and/or job, empowerment)</td>
<td>Treatment of impaired functions</td>
</tr>
<tr>
<td><strong>2.3. Target groups</strong></td>
<td>Patients with complex rehabilitation needs (mostly with need of more than two therapies), and need of medical supervision and nursing</td>
<td>Patients with complex rehabilitation needs (mostly with need of more than two therapies). Patients must be independent in activities of daily living and have mobility to reach rehab centre from home everyday</td>
<td>Patients with deficits in functions and activities. Patients must be mobile and independent</td>
</tr>
<tr>
<td><strong>2.4. Service goals</strong></td>
<td>Independent living, optimal functioning, ability to work</td>
<td>Independent living, optimal functioning, ability to work</td>
<td>Improved functions and activities</td>
</tr>
<tr>
<td><strong>2.5. Aspects of time</strong></td>
<td>(Immediately) after discharge from hospital (or maximum one to two weeks later), mostly for 3 to 6 weeks of treatment (in severe cases, e.g. SCI length of treatment could be up to several months)</td>
<td>(Immediately) after discharge from hospital (or maximum one to two weeks later), mostly for 3 to 6 weeks of treatment (in severe cases, e.g. SCI length of treatment could be up to several months)</td>
<td>Variable (around 2 weeks to 3 months depending on individual needs)</td>
</tr>
<tr>
<td><strong>2.6. Team structure</strong></td>
<td>Interdisciplinary team structure with all professions involved in treatment process (see 1.5)</td>
<td>Interdisciplinary team structure with all professions involved in treatment process (see 1.5)</td>
<td>One professional only</td>
</tr>
<tr>
<td><strong>2.7. Mode of production</strong></td>
<td>In-patient service in specialized units</td>
<td>Out-patient service in specialized units</td>
<td>Out patient treatments</td>
</tr>
<tr>
<td><strong>2.8. other category</strong></td>
<td>Services mostly specialized to specific</td>
<td>Indication also related to availability</td>
<td>Home-visits also possible</td>
</tr>
</tbody>
</table>
C. Long term rehabilitation services

<table>
<thead>
<tr>
<th>ICSO-R Dimension</th>
<th>C.1 Intermittent in-patient rehabilitation service</th>
<th>C.2 Primary care rehabilitation centre</th>
<th>C.3 Mono-professional long-term services</th>
<th>C.4 Community Based Rehabilitation Service</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Service type</strong></td>
<td>Provider</td>
<td>Provider</td>
<td>Provider</td>
<td>Provider</td>
</tr>
<tr>
<td><strong>1.1. Location</strong></td>
<td>Centralized or decentralised</td>
<td>Decentralized</td>
<td>Decentralised</td>
<td>Decentralised, community based</td>
</tr>
<tr>
<td><strong>1.2. Organization</strong></td>
<td>Depends on health system and local situation Dépends sur le système de santé et les conditions locales</td>
<td>Depends on health system and local situation</td>
<td>Depends on health system and local situation Dépends sur le système de santé et les conditions locales</td>
<td>Depends on health system and local situation Dépends sur le système de santé et les conditions locales</td>
</tr>
<tr>
<td><strong>1.3. Context</strong></td>
<td>Specialized units (in-patient clinics)</td>
<td>Stand alone practice or primary health care centre</td>
<td>Stand alone practice or primary health care centre</td>
<td>Community workers</td>
</tr>
<tr>
<td><strong>1.4. Facility</strong></td>
<td>In-patient service structure</td>
<td>Facilities for single treatments</td>
<td>Facilities for single treatments</td>
<td>Facilities for single treatments or home based interventions</td>
</tr>
<tr>
<td><strong>1.5. Human resources</strong></td>
<td>PRM doctor, Physiotherapists, Occupational Therapists, Speech and Language Therapist, Dysphagia Therapist, or Psychologist Social worker</td>
<td>PRM doctor, other specialist, or primary care physician, Therapists</td>
<td>Therapists</td>
<td>Therapists, Community workers</td>
</tr>
<tr>
<td><strong>1.6. Technical resources and equipment</strong></td>
<td>Comprehensive treatment facilities</td>
<td>Specialised treatment facilities</td>
<td>Specialised treatment facilities</td>
<td>Room, basic treatment facilities</td>
</tr>
<tr>
<td><strong>1.7. Quality assurance</strong></td>
<td>Rehabilitation assessment, regular documented team meeting on the patients functioning</td>
<td>Mono-professional assessment</td>
<td>Mono-professional assessment</td>
<td>Basic assessment</td>
</tr>
<tr>
<td><strong>1.8. Profit orientation</strong></td>
<td>Depending on health system and ownership</td>
<td>Depending on health system and ownership</td>
<td>Depending on health system and ownership</td>
<td>Depending on health system and ownership</td>
</tr>
</tbody>
</table>

**Funding**

| **2.1. Source of money** | Depends on health funding system | Depends on health funding system | Depends on health funding system | Depends on health funding system (or in may cases funded by communities and/or NGO's) |
| **2.2. Criteria of cost refund** | Per-day or single therapies refund or other funding systems | Single therapies refund | Single therapies refund | Depends on 2.1 |

**Service delivery**

<p>| <strong>3.1. Strategy</strong> | Rehabilitation, health promotion, return-to-work, independent living | Treatment of functions and training of activities, rehabilitation (independent living) | Treatment of functions and training of activities, rehabilitation (independent living) | Independent living |
| <strong>3.2. Target groups</strong> | Patients with chronic health conditions experiencing disability (including incapability for work) | Patients with chronic health conditions experiencing disability (including incapability for work) | Patients with chronic health conditions experiencing disability (including incapability for work) | Independent living |
| <strong>3.3. Service goals</strong> | Optimal functioning | Improvement and maintenance of functions and activities (and participation) | Improvement and maintenance of functions and activities (and participation) | Improvement and maintenance of functions and activities (and participation) |
| <strong>3.4. Aspects of time</strong> | 3 to 6 weeks, treatment 5 days per week, mostly more than 2 treatment per day | 3 to 6 weeks or (in complex cases) long-term treatments, mostly from 2 interventions per week or single visits | 3 to 6 weeks or (in complex cases) long-term treatments, mostly around 2 interventions per week | Very variable |
| <strong>3.5. Intensity</strong> | More than two treatments per day, mostly 5 days a week | Low intensity (single treatments or visits) | Low intensity (single treatments) | Low intensity, service on demand |
| <strong>3.6. Team structure</strong> | Interdisciplinary team structure with all professions involved in treatment process (see 1.5) | One or more professions | One professional only | Single workers or team of community workers |</p>
<table>
<thead>
<tr>
<th>3.7. Mode of production</th>
<th>In-patient service</th>
<th>Out patient</th>
<th>Out patient</th>
<th>Out patient or home based</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.8. other categories of service delivery</td>
<td>Should be linked to primary care and vocational medicine</td>
<td>Referral systems to more specialised rehabilitation interventions needed</td>
<td>Referral systems to more specialised rehabilitation interventions needed</td>
<td>Referral systems to more specialised rehabilitation interventions needed</td>
</tr>
</tbody>
</table>
Appendix 2: Recommendations from the chapter “Rehabilitation” of the WRD

Conclusion and recommendations

The priority is to ensure access to appropriate, timely manner, affordable, and high-quality rehabilitation interventions, consistent with the CRPD, for all those who need them.

In middle-income and high-income countries with established rehabilitation services, the focus should be on improving efficiency and effectiveness, by expanding the coverage and improving the relevance, quality, and affordability of services.

In lower-income countries the focus should be on introducing and gradually expanding rehabilitation services, prioritizing cost-effective approaches.

A broad range of stakeholders have roles to play:

- Governments should develop, implement, and monitor policies, regulatory mechanisms, and standards for rehabilitation services, as well as promoting equal access to those services.
- Service providers should provide the highest quality of rehabilitation services.
- Other stakeholders (users, professional organizations etc.) should increase awareness, participate in policy development, and monitor implementation.
- International cooperation can help share good and promising practices and provide technical assistance to countries that are introducing and expanding rehabilitation services.

Policies and regulatory mechanisms

- Assess existing policies, systems, services, and regulatory mechanisms, identifying gaps and priorities to improve provision.
- Develop or revise national rehabilitation plans, in accord with situation analysis, to maximize functioning within the population in a financially sustainable manner.
- Where policies exist, make the necessary changes to ensure consistency with the CRPD.
- Where policies do not exist, develop policies, legislation and regulatory mechanisms coherent with the country context and with the CRPD. Prioritize setting of minimum standards and monitoring.

Financing

Develop funding mechanisms to increase coverage and access to affordable rehabilitation services. Depending on each country’s specific circumstances, these could include a mix of:

- Public funding targeted at persons with disabilities, with priority given to essential elements of rehabilitation including assistive devices and people with disability who cannot afford to pay.
- Promoting equitable access to rehabilitation through health insurance.
- Expanding social insurance coverage
- Public-private partnership for service provision.
- Reallocation and redistribution of existing resources
- Support through international cooperation including in humanitarian crises.

Human resources

Increase the numbers and capacity of human resources for rehabilitation. Relevant strategies include:

- Where specialist rehabilitation personnel are in short supply, develop standards in training
for different types and levels of rehabilitation personnel that can enable career development and continuing education across levels.

- Establish strategies to build training capacity in accord with national rehabilitation plans.
- Identify incentives and mechanisms for retaining personnel especially in rural and remote areas.
- Train non-specialist health professionals (doctors, nurses, primary care workers) on disability and rehabilitation relevant to their roles and responsibilities.

**Service delivery**

Where there are none, or only limited, services introduce minimum services within existing health and social service provision. Relevant strategies include:

- Developing basic rehabilitation services within the existing health infrastructure.
- Strengthening rehabilitation service provision through community-based rehabilitation.
- Prioritizing early identification and intervention strategies using community workers and health personnel.
- Where services exist, expand service coverage and improve service quality. Relevant strategies include:
  - Developing models of service provision that encourage multidisciplinary and client-centred approaches.
  - Ensuring availability of high quality services in the community.
  - Improving efficiency by improved coordination between levels and across sectors.
- In all settings, three principles are relevant:
  - Include service-users in decision-making.
  - Base interventions on sound research evidence.
  - Monitor and evaluate outcomes.

**Technology**

Increase access to assistive technology that is appropriate, sustainable, affordable, and accessible. Relevant strategies include:

- Establishing service provision for assistive devices.
- Training users and following up.
- Promoting local production.
- Reducing duty and import tax.
- Improving economies of scale based on established need.

To further enhance capacity, accessibility and coordination of rehabilitation measures the use of information and communication technologies - telerehabilitation - can be explored.

**Research and evidence-based practice**

- Increase research and data on needs, type and quality of services provided, and unmet need (disaggregated by sex, age, and associated health condition).
- Improve access to evidence-based guidelines on cost-effective rehabilitation measures.
- Disaggregate expenditure data on rehabilitation services from other health care services.
- Assess the service outcomes and economic benefits of rehabilitation.