



BENCHMARK STATEMENT

PROSTHETICS AND ORTHOTICS SERVICES IN LEBANON



REPUBLIC OF LEBANON
MINISTRY OF PUBLIC HEALTH



rehabskills
Consultancy and Support



ICRC

PROSTHETICS AND ORTHOTICS IN LEBANON

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ABBREVIATIONS AND ACRONYMS

GATE	Global Cooperation on Assistive Technology
ICRC	International Committee of the Red Cross
IRI	Industrial Research Institute
ISO	International Organization for Standardization
ISPO	International Society for Prosthetics and Orthotics
IWAS	International Wheelchair and Amputee Sports
MoPH	Ministry of Public Health
MoSA	Ministry of Social Affairs
NGO	Non-Government Organisation
NSSF	National Social Security Fund
OCHA	United Nations Office for the Coordination of Humanitarian
PRP	Physical Rehabilitation Programme
SDG	Sustainable Development Goals
UNCRPD	United Nations Convention of the Rights of Persons with Disabilities
UNRWA	United Nations Relief and Works Agency for Palestine refugees in the near east
WHO	World Health Organization
WRF	World Rehabilitation Fund

DEFINITIONS

Appropriate technology

Systems that provide fit and alignment that suit the needs of the individual and can be sustained by the country at the lowest price. Proper fit and alignment should be based on sound biomechanical principles (1).

Assistive products

Any external product (including devices, equipment, instruments and software), specially produced or generally available, the primary purpose of which is to maintain or improve an individual’s functioning and independence and thereby promote their well-being. Assistive products are also used to prevent impairments and secondary health conditions (2).

Assistive technology

Organized knowledge and skills related to assistive products, including systems and services. Assistive technology is a subset of health technology (2).

Benchmark

A standard of quality against which something is evaluated or compared.

Disability

An umbrella term for impairments, limitations of activity and restrictions on participation resulting from the interaction between people with health conditions and the environmental barriers they encounter (3).

Impairment

Loss of or abnormality in a body structure or physiological function (including mental function), where “abnormality” is used to mean significant variation from established statistical norms (4).

Lebanon Order

Republic of Lebanon.

Order

A professional body.

Orthosis, orthotic device or product

Externally applied device used to modify the structural and functional characteristics of the neuromuscular and skeletal systems (5).

Orthotics

Science and art of treating patients by the use of orthoses (5).

Prosthesis, prosthetic device or product

Externally applied device used to replace wholly or partly an absent or deficient limb segment (5).

Prosthetics

Science and art of treating patients by the use of prostheses (5).

Prosthetist and orthotist

Person who has completed an approved course of education and training and is authorized by an appropriate national authority to design, measure and fit prostheses and orthoses (5).

Rehabilitation

A set of interventions designed to optimize functioning and reduce disability in individuals with health conditions in interaction with their environment (6).

Third party payer

An entity (other than the patient or the health care provider) that reimburses and manages health care expenses. In Lebanon this includes insurance companies, government agencies and employers.

Universal health coverage

Ensuring that all people can use the promotive, preventive, curative, rehabilitative and palliative health services they need, of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship (7).

FOREWARD



The benchmarking of prosthetics and orthotics produced a framework developed by specialists, experts, local and international actors. This will lead to better outcomes for persons in need of devices by upgrading quality and excellence in mobility and assistive technologies.

Dr. Mostapha Itani

*Chair of the National Committee of Prosthetics and Orthotics
Ministry of Public Health*



Despite all the challenges we face, we are pioneering on the right track to reach our goals. Standardising the field of prosthetics and orthotics was a vision which we are achieving by each passing day in our mission.

Mr. Issam Mawla

President of the Prosthetics and Orthotics Syndicate



The Benchmark Statement on Prosthetics and Orthotics Services in Lebanon is a well-developed condensed product of all the decisions and recommendations that were reached in the meetings and workshops we had together. It clearly gives a vital role to be followed by the different contributing sides concerned. The practical work should start now with each of us doing our role in order to achieve the proposed goal by the recommended strategic planning timeframe of 2030 within a proper framework and with the accumulation of all the efforts, for the moral is in the implementation and the follow-up. We look forward to seeing the aimed for results coming to life. Thank you for all the efforts put into making this benchmark possible.

Mrs. Ghada Borjas

*Head of the Department of Health of Persons with Disabilities
Ministry of Public Health*

PREFACE

Persons with physical disabilities are often unable to access proper physical rehabilitation services. This leads to reduced mobility and reduced social (and economic) integration. Many are forced into poverty and excluded from everyday life. Exclusion happens at multiple levels: health care services; education; employment; and transport with information and assistive technology often remaining out of reach. Being excluded from key societal components has a dramatically negative impact on the person's (and their family's) ability to live a full and healthy life. They are less capable of contributing to the family's welfare and cannot be self-sufficient.

Restoring mobility is the guiding force of all International Committee of the Red Cross (ICRC) Physical Rehabilitation Projects. This is the first step towards conquering basic rights such as access to food, shelter, education, earning an income and, more generally, having the same opportunities as other members of society. Ensuring access to physical rehabilitation – which entails the provision of physiotherapy and mobility devices (prostheses, orthoses, walking aids and wheelchairs) – is the general objective of the ICRC's Physical Rehabilitation Programme (PRP). Since 1979, the ICRC has focused on widening access to appropriate physical rehabilitation services, and its physical rehabilitation activities have diversified and expanded worldwide.

The ICRC PRP pursues a twin-track approach, combining a person-centred and a systemic approach, assisting national systems and

their service users. Its four pillars (access, quality, long-term sustainability and societal integration) are interdependent and interrelated.

In order to ensure the quality of the services provided, the ICRC promotes the application of internationally accepted best practices. Ensuring long-term sustainability also includes advocating for policies for physical rehabilitation and social protection, leadership and governance.

The World Health Organization's (WHO) Standards for prosthetics and orthotics (8) has established a precedent for the prosthetic and orthotic sector globally. Through the WHO standards and implementation manual, as well as the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) (9) and the World Health Organization's Global Cooperation on Assistive Technology (GATE) (10), countries across the world now have the ability to align their prosthetic and orthotic services with international standards and rights to ensure that all people who require these services have access.

Lebanon has taken the first steps in aligning with these standards by undertaking this benchmarking process thus highlighting Lebanon's commitment to work towards transforming and improving their service provision.

We commend Lebanon on undertaking this process and encourage more countries to engage in this process so that we can globally achieve the Sustainable Development Goals (SDGs) (11) and strengthen universal health coverage.



Christophe Martin

*Head of Delegation
International Committee
of the Red Cross, Lebanon*



EXECUTIVE SUMMARY

Lebanese, Syrian and Palestinian people with physical disabilities living in Lebanon are confronted with a variety of barriers to accessing healthcare services and especially rehabilitation that includes prosthetic and orthotic devices. The absence of a unified and standardised prosthetic and orthotic coverage procedure makes access even more difficult.

Developing the prosthetics and orthotics sector is identified as one of the priority measures to address the needs of people with physical disabilities by the ICRC Physical Rehabilitation Programme in Lebanon, working in close partnership with the Ministry of Public Health (MoPH), the Prosthetics and Orthotics Syndicate and the University of Balamand with the support of Rehabskills Limited.

This benchmark statement compares the situation in Lebanon with the WHO Standards for prosthetics and orthotics (8) and makes recommendations for improvement. The statement covers four areas of the health system: policy; products; personnel and provision of services.

The policy landscape at the governance and leadership level highlights that some important policy documents have not been updated since 1997 and are not fully implemented. Development of policy and a guiding framework is needed to enable prosthetics and orthotics services to progress in the Lebanese health system. A reformed National Committee of Prosthetics and Orthotics should be established to include a wide range of stakeholders. This Committee with the appropriate authority should work on the development of policy, planning, monitoring and evaluation of services with the Prosthetics and Orthotics Syndicate. The Syndicate has limited authority and should be amended into a mandatory order. In addition, a national priority product list of prosthetic and orthotic technologies should be established alongside a national population-based needs assessment. These policy developments will support funding decisions to improve equal access for all services users.

For the health system area of products, there is no national approach to procurement and the MoPH price list (last updated in 1997) lacks coverage for people with specific medical conditions. The recommended priority list of prosthetic and orthotic products and their classification (from basic to advanced) must be proposed by the Prosthetics and Orthotics Syndicate and agreed by the reformed National Prosthetics and Orthotics Committee based on the population's clinical needs and cost-effectiveness. Products are not categorized as health care products which prevents exemption from import

duties and custom fees. The reformed National Committee with the support of the Syndicate should determine the regulation of the importation, approval and quality control of components.

Personnel have no national competence framework with little opportunity for continuous professional development or career planning. The establishment of workforce planning, and a professional competency framework will provide a reference for maintaining and developing basic to advanced skills.

For the provision of services, the main recommendation is to complete a needs assessment, to review users' access to services and the possibility for them to choose their providers and products. Service users should be involved in decision-making and in policy-making for prosthetic and orthotic services. A service check list, quality control procedures, prescription protocols, referral system and care pathway developed together with the Syndicate and other stakeholders will also enable safe practice and high-quality of service provision.

To conclude, the outcomes of the Benchmark Statement for Prosthetics and Orthotics Services in Lebanon and the recommendations will pave the way for the sector to progress and to develop a long-term 2030 vision. The creation of a national prosthetics and orthotics policy framework should be established alongside the reform of the National Committee of Prosthetics and Orthotics and the upgrade of the Syndicate into a mandatory order. The publication of this report is also an important advancement to strengthen universal health coverage in Lebanon by strengthening the rehabilitation services in the country. Within this scope, it will lead into the eight recommended areas of WHO Rehabilitation in health systems (6) and the subsequent WHO Rehabilitation 2030 call for action (12). Finally, this groundbreaking benchmarking approach forged in Lebanon can also be used as a model for other countries.

STATEMENT ABOUT THE IMPACT OF COVID-19

In Lebanon, the outbreak of COVID-19 is having a significant impact. It came at a time when the country was already facing a severe economic and socio-political crisis, with countrywide mass protests starting in October 2019¹. As in other parts of the world, the disease outbreak put extra pressure on an already over-burdened and under-resourced national health system².

The reduced ability to access healthcare reflects a “convergence of crisis” in Lebanon. As stated in the COVID-19 Emergency Appeal Lebanon by the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), access to basic services has been increasingly challenging³. Reasons included roadblocks following wide-spread protests in late 2019, and government-imposed movement restrictions in response to COVID-19. The nationwide lockdown has further compounded the socio-economic hardship³.

The economic crisis has restricted the access to opportunities for livelihoods and basic services for both Lebanese and refugee populations and worsened pre-existing vulnerabilities⁴. Older persons and households with persons with disabilities are also much more likely to report an incapacity to procure vital medicine, stressing the link between poverty and disability. Humanity and Inclusion's previous assessments have demonstrated that persons with disabilities face additional barriers in accessing healthcare, primarily due to services being too expensive and inaccessible⁵. In addition, field experiences have shown that persons with disabilities face disproportionate vulnerability as they are not systematically included in contingency, planning, assessment, design and delivery of humanitarian relief⁶.

The outbreak has exacerbated insecurity in the country and compounded an already challenging situation. There is uncertainty as to whether critical activities will be affected by banks' reduced operations with a nationwide shortage of dollars. In addition, Lebanon produces very few goods for export and the country's primary source of dollars has been large deposits from wealthy investors in the central bank. The Lebanese pound has lost approximately two-thirds of its value and the shortage has now affected individual Lebanese account holders and small private businesses; whose banks have limited dollars' withdrawals⁷.

Now more than ever it is essential for stakeholders to work together to build up health services to meet the needs of the population, including the need for mobility devices. This report supports the Government to identify strategic priorities and coordinate concrete actions for improved access to prosthetics and orthotics devices.

¹ COVID-19 Multi-Sectoral Needs Assessment / Plan International Lebanon, April 2020 <https://plan-international.org/publications/covid-19-multi-sectoral-needs-assessment>

² COVID-19 Emergency Appeal- Lebanon OCHA, 7 May 2020. Available from https://reliefweb.int/sites/reliefweb.int/files/resources/COVID19LebanonAppeal_20200508.pdf

³ Relief web; COVID-19 Disorder Tracker: Spotlight-A New Wave of Unrest in Lebanon, 26 Apr- 2 May 2020. Available from <https://reliefweb.int/report/lebanon/covid-19-disorder-tracker-spotlight-new-wave-unrest-lebanon-26-apr-2-may-2020>

⁴ Worsening access to healthcare in crisis-hit Lebanon- May 2020; Humanity Inclusion, Norwegian Refugee Council, International Rescue Committee and UK AID.

⁵ Removing Barriers; the Path Towards Inclusive Access Lebanon Report, Humanity and Inclusion and iMMap July 2018, p42 <https://data2.unhcr.org/en/documents/download/66213>

⁶ Disability in Humanitarian Context: views from affected people and field organizations: Handicap International, 2015 <https://handicap-international.ch/sites/ch/files/documents/files/disability-humanitarian-context.pdf>

⁷ New York Times; Lebanon's Economic Crisis Explodes, Threatening Decades of Prosperity (by Ben Hubbard) published May 10, 2020 <https://www.nytimes.com/2020/05/10/world/middleeast/lebanon-economic-crisis.html>

NAJI'S STORY (ORTHOSIS USER)

The devastating impact of a virus has been experienced in Lebanon in the past. Naji Yazbek is a survivor of polio and a lifelong user of orthotic services. Naji contracted the virus when he was just 6 months old during the epidemic in the 1970s. At the time, the virus caused a fever and paralysed movement in his legs and hands. Having received intensive physiotherapy as a child, today paralysis only remains in the muscles of his left leg. To overcome the weakness in his leg, Naji uses an orthoses and crutches to support his movement.

Naji has achieved a lot in his life. He studied at Kafaat School; it has a physical rehabilitation centre that provided him with his first orthoses and taught him how to use it. Naji says “What I liked about my school was that it wasn’t only for children with disability, it was for all children”. On finishing his high school, Naji started working in many fields, such as shoe trading and printing. He continued to develop his interest in printing and opened his own business.

“ I lived a normal childhood and adulthood like my able-bodied friends, no one was treating me as a person with disability. ”

Naji is married with two children and celebrates 25 years working with the Ministry of Social Affairs in Lebanon, with a passion for supporting other people with disability. Naji has a keen interest in sport and in 1997 he founded a wheelchair basketball club that includes Lebanese players with disability, regardless of their political background. In 2019 he won the bronze medal at the Sharjah 2019 International Wheelchair and Amputee Sports (IWAS) World Games for Badminton.



1. ABOUT THIS DOCUMENT

PURPOSE

This benchmark statement compares the situation in Lebanon with WHO Standards for prosthetics and orthotics (8). The WHO standards support the growth and development of the sector globally by positioning prosthetics and orthotics as part of the health system. They describe 4 key areas of the health system: policy, products, personnel and the provision of services.



Figure 1: The 4 key areas of health systems addressed by the benchmark statement (8), graphics by WHO.

The WHO standards are designed for countries to develop and/or strengthen essential, affordable, accessible, effective, efficient, safe prosthetics and orthotics services of high quality. The standards align with the UNCRPD (9). In addition, the standards aim to align with the United Nations SDGs (11). The priority areas adhere to strengthening the prosthetic and orthotic sector and this benchmark statement covers the areas of policy, products, personnel and provision of services for Lebanon.

AIMS

The aim of the benchmarking statement is to:

- Provide a situation analysis of prosthetics and orthotics services in Lebanon;
- Inform the strategic planning process for the nation’s prosthetic and orthotic sector;
- Highlight where the priorities are compared to the 4 areas of the WHO standards; and
- Provide recommendations for development and growth to achieve better access to service provision.

Lebanon has a diverse population of 6,848,925 with 1 in 4 people being a refugee (13–16) and 95,618 people having a disability (17).

Over half of those with a disability (55.1%) have motor (kinaesthetic) disabilities. Ensuring equal access to all service users requiring prosthetic and orthotic services so that they achieve improvements in function and participation within society is challenging.

ALI’S STORY (PROSTHESIS USER)

Ali is now in his 40s. One day, sometime in the early 1990s, he stepped on a landmine near his home in Kafra in southern Lebanon. It cost him an arm and a leg. His immediate reaction was anger. He immersed himself in books and articles about the use of weapons and explosive devices and discovered that many of these weapons and devices, including the one that had maimed him, were banned internationally. Ali channeled his energy into his postgraduate studies. First, he took a master’s degree in law. Then he began working towards a Ph.D. in International Humanitarian Law. The ICRC assisted

physical rehabilitation centre in Saida, a prosthetics and orthotics service in southern Lebanon, continues to be a source of support for him.

Ali says “At first, I felt that nothing linked my past life to my new life. But, with time the prosthetic leg provided that connection. It grew into something more than a mass of plastic and metal. It became a kind of bridge and an indispensable part of me.”

METHODOLOGY

Several activities throughout 2019 provided the supporting evidence for this benchmark statement. A systematic desk review covering a wide range of national and international literature in both English and Arabic was conducted. A draft report of the desk review was prepared for discussion.

A national summit with 60 participants representing different stakeholders was held in July 2019 to discuss the WHO Standards for prosthetics and orthotics (8) and the preliminary findings of the draft desk review. The stakeholders had a diverse range of interests in prosthetics and orthotics services and were new to the concepts of the standards and health system strengthening. In order to harmonise their capacity to participate in a national summit, a coaching workshop was held with 15 key stakeholders to share the standards and agree summit discussion questions.

During and after the summit, more literature was shared by summit participants and collated into the desk review with the final report (in English and Arabic) completed and approved in September 2019 (18).

Unfortunately, a period of civil unrest occurred with demonstrations, roads and airport closures. This meant that a planned stakeholder meeting on benchmarking was not possible. Two pieces of work were conducted as an alternative to ensure that stakeholder input took place

as part of participative development of the project. The research team from the University of Balamand set up small structured discussions in three regional workshops for service providers. In addition, a user survey was completed with a convenience sample of 59 service user participants with physical disabilities from six areas of Lebanon completing a survey (19). Data from the service provider discussions and the user surveys helped to inform the research team about the final content for the benchmark statement.

Finally, four “task force meetings” were convened among prosthetic and orthotic professionals and people with disability under the leadership of MoPH. The draft benchmark statement was reviewed by three Lebanese prosthetics and orthotics professionals and feedback was provided during meetings and by e-mails. The content was also agreed by WHO Lebanon office on 11 May 2020. This benchmark statement compares 60 WHO standards across the four areas of service provision with the national situation and makes recommendations for development.

ABOUT PROSTHETICS AND ORTHOTICS

Prosthetics and orthotics is the science and art of treating patients by the use of prostheses and orthoses. Prostheses and orthoses are externally applied mobility devices in close contact with the body and have various purposes, for example: to improve mobility, function, alleviate pain, prevent impairments or secondary impairments (5).

Internal prostheses or other mobility devices such as wheelchairs, crutches and walking aides are not included as part of the scope of this benchmark statement.

PROSTHESIS

Externally applied device used to replace wholly or partly an absent or deficient limb segment.



ORTHOSIS

Externally applied device used to modify the structure and function of the neuromuscular system.



Figure 2: Definition of a prosthesis and an orthosis

The following section states each WHO standard, outlines the corresponding situation in Lebanon and provides recommendations for each area of the health system to inform strategic planning.

A. POLICY

Moussa was farming his land on the Lebanese–Syrian border when an unexploded device went off.

Weeks after receiving his prosthetic leg Moussa went back to work. Policy is needed to ensure access to prosthetics and orthotics services.



Figure 3: Policy

STAKEHOLDERS AND COORDINATION		
1	WHO standard	Governments should assume a leading role in the development and coordination of national prosthetics and orthotics service provision.
	Situation in Lebanon	The MoPH appoints a National Committee of Prosthetics and Orthotics to advise upon the provision of prosthetics and orthotics services and it has oversight of patient referrals to MoPH registered service providers. The National Committee of Prosthetics and Orthotics is unable to provide sufficient leadership in the ongoing development of the sector.
	Recommendation	The Government of Lebanon should provide leadership in the development and coordination of prosthetics and orthotics services in collaboration with government departments (i.e. MoPH, Ministry of Social Affairs (MoSA), the military), service users and other key stakeholders (e.g. ICRC, United Nations Relief and Works Agency for Palestine refugees in the near east (UNRWA) and World Rehabilitation Fund (WRF)).
2	WHO standard	Governments should involve all relevant stakeholders – including service users, caregivers and user groups – in policy development, planning, implementation, monitoring and evaluating prosthetics and orthotics services.
	Situation in Lebanon	Since 1997 there have been no significant changes to policy development, planning, implementation, monitoring and evaluating of prosthetics and orthotics services. Stakeholders who are service users, caregivers or user groups are not empowered in policy making.
	Recommendation	The Government of Lebanon should involve all relevant stakeholders in policy development, planning, implementation, monitoring and evaluating prosthetics and orthotic services. A review strategy and process to take place every 3 to 5 years should be included.
3	WHO standard	A national prosthetics and orthotics committee or similar entity, with a wide range of stakeholders, should be in place for the coordination and development of national prosthetics and orthotics service provision.
	Situation in Lebanon	<p>The National Committee of Prosthetics and Orthotics is comprised of a limited range of stakeholders consisting of prosthetists/orthotists, providers, doctors, and representatives from the MoPH. It has limited powers of coordination and capacity to develop the provision of services.</p> <p>Lebanon also has the Prosthetics and Orthotics Syndicate which aims to implement several administrative and educational activities to develop the sector and the personnel working in it. Membership comprises of prosthetists and orthotists, but the Syndicate currently has limited power to enable and facilitate change and would require a restructure to form an Order (professional body) to have power to influence change within the sector.</p>
	Recommendation	<p>Reform of decision-making and administrative structures are needed to effectively coordinate and develop national prosthetics and orthotics service provision.</p> <p>MoPH should establish a reformed National Committee of Prosthetics and Orthotics comprised of a wide range of stakeholders with appropriate authority for policy development, planning, implementation, monitoring and evaluation of prosthetics and orthotics services.</p> <p>The reformed National Committee of Prosthetics and Orthotics will need training and ongoing support to develop leadership, governance competencies and capacity.</p> <p>Developing the current Prosthetics and Orthotics Syndicate towards a mandatory order will improve decision-making within the sector.</p>

“

Coordination of prosthetics and orthotics services is strengthened by the creation of a national prosthetics and orthotics committee or similar entity. This body is best established within existing structures for the coordination of health, rehabilitation and assistive technology, perhaps as a subgroup of a broader entity, as long as sufficient attention is given to the details of prosthetics and orthotics. The structure will depend on the local context.

A committee with varied membership and a prominent role for the government can coordinate the development of national policies, legislation and strategic plans and monitor services, to ensure that all stakeholders are working towards the same goals. To be effective, the committee should set clear aims and objectives for its work and meet regularly, as required by the local situation.

World Health Organization. Standards for prosthetics and orthotics. Part 2: implementation manual. Geneva; 2017 (20)

”

GUIDING FRAMEWORK FOR PROSTHETICS AND ORTHOTICS SERVICE PROVISION		
4	WHO standard	There should be a national guiding framework for prosthetics and orthotics service provision.
	Situation in Lebanon	There are limited guiding frameworks for prosthetics and orthotics service provision.
	Recommendation	Lebanon should develop a national guiding policy framework for prosthetics and orthotics. This policy should include structures for the development of policy, planning, implementation, monitoring and the evaluation of prosthetics and orthotics services. It should include policy related to service provision, personnel, and products.
5	WHO standard	Prosthetics and orthotics service provision should be regulated by the State.
	Situation in Lebanon	The Government of Lebanon partially regulates some aspects of prosthetics and orthotics service provision. There are a limited number of policy instruments mainly covering a product list and referrals for state funded devices.
	Recommendation	Determine an appropriate and unified national regulation process that is overseen by the reformed National Committee of Prosthetics and Orthotics and supported by the Prosthetics and Orthotics Syndicate.

MONITORING		
6	WHO standard	Prosthetics and orthotics service should be monitored nationally and regionally.
	Situation in Lebanon	There is neither a national approach to the monitoring of prosthetics and orthotics services nor a regional approach in the 8 administrative divisions of Lebanon. Each government provider has their own monitoring process (e.g. MoPH, MoSA and the military). Only MoPH funded provision is monitored by the current National Committee of Prosthetics and Orthotics.
	Recommendation	Develop a monitoring and evaluation system that can be accessed with data provided by all providers and audited/monitored on a yearly basis by the MoPH and all third-party payers (e.g. MoSA, the military, and international organisations).

INTERNATIONAL COORDINATION AND COOPERATION		
7	WHO standard	Governments and national stakeholders should collaborate internationally and share experience, data and research on prosthetics and orthotics service provision.
	Situation in Lebanon	Some prosthetics and orthotics service providers collect and conduct their own data and research, however, there is no national approach to collaboration or the sharing of information and no documented international research.
	Recommendation	Create and develop a national strategy for information exchange about prosthetics and orthotics to support evidence-based decision-making and sector development. Implementation would need to include the creation of a database with minimum datasets about prosthetics and orthotics that enable individual service provision input to create a national research collaboration. Access to and input from the global research community would be beneficial to help standardise the approach. The Disability Research and Advocacy Hub in Lebanon has a disability research, dissemination and awareness remit. The hub could be a potential partner for the prosthetics and orthotics sector to develop and implement the database.

INTERNATIONAL SUPPORT		
8	WHO standard	International support, when provided, should contribute to the establishment and implementation of national prosthetics and orthotics policies and strategic plans and be aligned with the provision system of the national health and welfare service.
	Situation in Lebanon	International support for prosthetics and orthotics services in Lebanon is provided by: <ul style="list-style-type: none"> international organisations working under a Memorandum of Understanding with MoPH; the private market; and unregulated support and donations from other organisations and individuals which undermines the health system and the market. There is inequitable international support provided to Lebanese and Syrian or Palestinian refugee populations in need of services. There is no current international body that contributes to strategic plans and the provision of services.
	Recommendation	Create a stakeholder list that identifies the current international relationships within the prosthetics and orthotics sector in Lebanon and facilitates working relationships to support development.

FINANCING

ECONOMIC ANALYSIS OF PROSTHETICS AND ORTHOTICS SERVICE PROVISION		
9	WHO standard	The cost of providing prosthetics and orthotics services should be assessed periodically.
	Situation in Lebanon	The full economic cost of providing prosthetics and orthotics services in Lebanon is unknown. Therefore, it is impossible for the government to make funding decisions as part of a strategy to ensure access to prosthetics and orthotics services for all citizens in need of them. In Lebanon the MoPH product price list governs the amount of cost reimbursement to service providers when a patient is referred to them by MoPH. It has not been updated since 1997 despite inflation and advances in basic, intermediate and advanced types of prosthetics and orthotics technology. Each governmental third-party payer (e.g. National Social Security Fund (NSSF), MoSA, and the military) have their own price lists.
	Recommendation	Establish a national priority product list of prosthetic and orthotic technologies based on clinical need. Determine an appropriate schedule of costs for each product. Agree and publish a new unified price list with clear criteria about referral routes and patient entitlement for MoPH and all third-party payers. This should be reviewed annually to keep it current and useful.
10	WHO standard	The direct and indirect economic benefits of prosthetics and orthotics services should be analysed at individual, family, community, society, health sector and national levels.
	Situation in Lebanon	There is no national approach to determining the direct and indirect benefits of prosthetics and orthotics services.
	Recommendation	As part of the development of a national monitoring and evaluation process, regular analysis of the benefits of services at an individual, family, community, society, health sector and national level should be included.

EXPENSES OF SERVICE USERS (20)

The expenses that are incurred personally by users when accessing a service unit and the loss of earnings should be considered in addition to service-related costs in order to derive the global cost of service delivery.

These expenses may include:

- Cost of travel to and from the service unit (sometimes requiring special transport);
- Cost of accommodation at the service unit location;
- Increased cost of meals during treatment;
- Loss of earnings while away from work;
- Cost of inability to perform normal activities in the community or household chores;
- Cost of an accompanying person or persons (such as parents of children);
- Child care expenses.

World Health Organization. Standards for prosthetics and orthotics. Part 2: implementation manual. Geneva; 2017 (20)

FUNDING PROSTHETICS AND ORTHOTICS SERVICES		
11	WHO standard	Prosthetics and orthotics services should be an integral part of universal health coverage.
	Situation in Lebanon	Although prosthetics and orthotics services in Lebanon are under the umbrella of the health system, the concept of universal health coverage as a funding mechanism has never been explored.
	Recommendation	Develop a unified awareness campaign that educates the wider health sector on universal health coverage for prosthetics and orthotics services and how appropriate referrals and access can be achieved.
12	WHO standard	Prosthetics and orthotics services should be included in national health and social insurance systems, like other health interventions.
	Situation in Lebanon	MoPH demonstrates partial inclusion of prosthetics and orthotics services in national health insurance coverage. However, access for all who require services in Lebanon is limited.
	Recommendation	Coordination between third-party payers (governmental and non-governmental) to update the national priority product list and price list is the first step in improving access for service users to health insurance coverage. The strategy would require a standardised process to ensure all service users have equal access to products and components, and would be supported by the reformed National Committee of Prosthetics and Orthotics and the Prosthetics and Orthotics Syndicate.

CALCULATION OF COSTS AND PRICE OF PROSTHETICS AND ORTHOTICS SERVICES (20)

All service providers – public, private, NGO, philanthropic – should know the exact cost of service delivery and that of each type of treatment offered. Costs and prices can be calculated with a tool that can also be used to contain costs by identifying areas in which costs can be reduced and cost–effectiveness improved. Calculations should take into account all service–related costs and make provisions for e.g. follow–up, maintenance and repairs.

For public services, salaries and infrastructure costs should also be included in the calculation, even if these items are covered by separate budgets. If these costs are not included, private service providers will not be able to compete on an equal basis, as their prices cover all their expenses.

Stakeholders can estimate the cost (or package price) of a complete treatment of a specified type for one person. This can be based on the prices calculated by service providers but is often higher. In low–income settings, for example, some of the costs of users might have to be covered in order to ensure that all people who need services can access them.

In the same way that the price of one vaccination has been calculated for immunization campaigns, a package price for prosthetics or orthotics treatment can illustrate the amount required to access the services. This figure is important for raising awareness at policy levels, lobbying for funds and selling the services. Calculations should preferably be made for each diagnosis, so that the cost for the entire population can be made on the basis of data on the prevalence of each disability.

Data on costs are also of interest to the international prosthetics and orthotics community, for making international comparisons and identifying models of cost–effective service delivery. The support of international bodies might be required in developing and standardizing comprehensive methods for costing.

World Health Organization. Standards for prosthetics and orthotics. Part 2: implementation manual. Geneva; 2017 (20)

INFORMATION

13	WHO standard	Data on prosthetics and orthotics service provision should be collected periodically, analysed at service level and shared at national level.
	Situation in Lebanon	Many services within Lebanon collect their own data, however, there is no national approach to data collection and sharing.
	Recommendation	Create a unified national database that can be accessed and viewed by all providers to assist in creating a national approach to data collection and the sharing of information and research for the sector in Lebanon.
14	WHO standard	A national prosthetics and orthotics database should be established to identify total need, types of need and unmet need.
	Situation in Lebanon	Whilst service providers may collect information based on user demand there is no national needs assessment for prosthetics and orthotics services in Lebanon.
	Recommendation	A population–based needs assessment should be conducted on the need for prosthetics and orthotics services across Lebanon. This would result in the creation of a first national database which could be supported by the Disability Research and Advocacy Hub.

PROMOTION OF PROSTHETICS AND ORTHOTICS SERVICES

15	WHO standard	Strategies for raising awareness about prosthetics and orthotics services should be established, including rights–based, social and economic arguments.
	Situation in Lebanon	There is little awareness among users and the general public about prosthetics and orthotics services in Lebanon. Although individual providers and organisations promote their services within their geographical area, there is no national awareness campaign.
	Recommendation	A national approach to raising awareness for service users, caregivers and the wider community should be established and supported by all stakeholders.

B. PRODUCTS

This baby is being treated with orthoses to cure club foot deformities. One day they will walk normally.

Assistive products like this are needed as treatments in Lebanon.



Figure 4: Products

TYPES

16	WHO standard	An appropriate range of prosthetic and orthotic products should be available in countries to suit local needs and realities.
	Situation in Lebanon	An appropriate range of prosthetics and orthotics products is not universally available in Lebanon to suit local needs or realities. A few services provide an appropriate range of products to some users who have the financial capacity to pay for them.
	Recommendation	An appropriate range of prosthetic and orthotic products should be available in Lebanon to suit the local needs and realities of the Lebanese and refugee populations.

17	WHO standard	A national list of priority prosthetic and orthotic products should be drawn up, respected and updated regularly.
	Situation in Lebanon	The national MoPH price list for prostheses and orthoses was published in 1997 with specific coverage conditions and was never updated. It does not reflect a national list of priority prosthetic and orthotic products. The implications (costs and benefits) of updating the price list is unknown.
	Recommendation	A 2-phase process should be implemented. Firstly, a priority list of prosthetics and orthotics products for Lebanon should be agreed and published by the reformed National Committee of Prosthetics and Orthotics according to the needs of the population. This may either be published as a stand-alone document or as part of a Lebanon Priority Assistive Products List. This process should be supported by the Prosthetics and Orthotics Syndicate. Note: This should not be based on price, but on clinical need. Secondly, a national price list for basic, intermediate and advanced prosthetic and orthotic products should be drawn up by the Prosthetics and Orthotics Syndicate and proposed to the reformed National Committee of Prosthetics and Orthotics with recommendations for universal health coverage. This should involve an estimate of need for prosthetics and orthotics products in the population outlining the full economic costs and benefits of any proposal for MoPH coverage.
18	WHO standard	International standards should be used for national classification of prosthetic and orthotic products.
	Situation in Lebanon	There is no classification of prosthetics and orthotics products in Lebanon.
	Recommendation	The classification of prosthetics and orthotics products by the International Organization for Standardization (ISO) should be made available in Arabic to the Prosthetics and Orthotics Syndicate (5, 21–23). The Prosthetics and Orthotics Syndicate should then review the classification and submit a proposal to the reformed National Committee of Prosthetics and Orthotics to adopt the classification for Lebanon.

SUPPLY OF MATERIALS

19	WHO standard	Components, materials, consumables, tools, machines and other equipment used exclusively for fabrication of prosthetic and orthotic products that are not available in a country should be exempt from import duty and customs fees.
	Situation in Lebanon	There is an open market for the supply of components, materials, consumables, tools, machines and other equipment in Lebanon for the fabrication of prosthetic and orthotic products. These items are not categorised as healthcare products and there is no exemption from import duties and custom fees.
	Recommendation	The reformed National Committee of Prosthetics and Orthotics should form a working group, supported by the Prosthetics and Orthotics Syndicate, to investigate regulations for the importation of other medical devices in Lebanon and explore the possibilities for exemption from import duties and custom fees for the fabrication of prosthetic and orthotic products.
20	WHO standard	Reuse of prosthetic and orthotic components should be regulated by a designated authority or group of experts with no conflict of interests and involve proper quality control and documentation.
	Situation in Lebanon	There is no regulation for the reuse of prosthetic and orthotic components in Lebanon. Sometimes second-hand components are donated free from other countries and used without regulation. This undermines local systems and services.
	Recommendation	The reformed National Committee of Prosthetics and Orthotics supported by the Prosthetics and Orthotics Syndicate, should determine any regulations for the reuse of prosthetic and orthotic components and donations. They should consider national and international regulations for medical devices and the health and safety of users.

TYPOLOGY OF PROSTHETICS AND ORTHOTICS PRODUCTS

3 types of product are available.



“The main criterion for choosing a prosthesis, orthosis or component part is its general appropriateness to the needs of the user and the setting in which it is fabricated, fitted, used and financed.”

This typology refers to specific design element characteristics:

“geometric configuration (shape and alignment), materials, resistance to movement and powering of movement.”

	BASIC	INTERMEDIATE	ADVANCED	WORKING METHODS
Geometric configuration	Single axis joints. Prostheses with Solid-Ankle Cushion Heel feet. Orthoses with side bars.	Four axis knee joints. Prostheses with articulated (single or multi-axis feet). Orthoses with more advanced side bars and polycentric joints.		Working methods are sometimes linked to a certain product level but are usually not. For example, computer-aided design, manufacturing tools and equipment, such as 3D printing can be used for products at all three levels.
Materials	Made from a narrow range of materials including thermoplastics, steel and/or aluminium.	Made from a wider range of materials including thermoplastics, thermosetting (composites), steel, aluminium and titanium.		
Resistance to movement	Simple elastics or springs.	Friction, pneumatic or hydraulic components. Prostheses with pneumatic or hydraulic cylinders for swing phase control or stance phase stability.		
			Additional smart controls that capture signals and detect the movements of the user to control them automatically. Prostheses include microprocessor-controlled prosthetic knees.	
Powering of movement	None	Body powered movement.	Additional smart controls that process signals from the user and use them to control power switching and electrical moving parts. Prostheses include myoelectric hands.	
Use	All countries. Reaching large populations in need. A step towards higher levels of product.	The standard product in most high income countries.	Production methods require a higher level of skills.	
Cost	Lowest cost.		Usually more expensive.	

Derived from:
World Health Organization. Standards for prosthetics and orthotics. Part 2: implementation manual. Geneva; 2017 (2o)

TECHNICAL STANDARDS

21	WHO standard	National regulation of prosthetic and orthotic products, components and materials should be an integral part of the national health care regulatory system.
	Situation in Lebanon	There is no national regulation of prosthetic and orthotic products, components and materials. Components are imported from foreign markets for distribution in Lebanon. Components are imported with or without having a European Union CE mark or Food and Drug Administration certificate. The clearing process in Lebanon, however, requires all components to be approved by the Industrial Research Institute (IRI) and the MoPH.
	Recommendation	The Prosthetics and Orthotics Syndicate should firstly determine a quality charter for prosthetic and orthotic products, components and materials. The Syndicate should then work towards regulation within the national health care regulatory system with a view to supporting and growing the sector to achieve better access for service users.
22	WHO standard	Prosthetic and orthotic products should be tested structurally for compliance with ISO or equivalent standards before being sold on the market.
	Situation in Lebanon	In Lebanon, any prosthetic and orthotic product may be sold with no requirement that they are structurally safe.
	Recommendation	The reformed National Committee of Prosthetics and Orthotics should review the standards of prosthetics and orthotics products on the market and use this as a baseline for quality improvement and standard setting within Lebanon. The National Committee, supported by the Syndicate, should oversee the approval of components and materials utilised across Lebanon.

RESEARCH AND DEVELOPMENT

23	WHO standard	Clinical and technical research should be conducted in prosthetics and orthotics, and the results should be shared nationally and globally.
	Situation in Lebanon	Research and development initiatives for prosthetics and orthotics sector in Lebanon are individualised and limited to service unit level.
	Recommendation	The reformed National Committee of Prosthetics and Orthotics should develop a national strategy for research and development in prosthetics and orthotics, with the Prosthetics and Orthotics Syndicate being responsible for implementation at national and international level. This should be aligned with national and international initiatives in rehabilitation and assistive technology. This strategy could be supported by the creation of a research consortium to include the University of Balamand and the Disability Research and Advocacy Hub through coordination and support of research activities.
24	WHO standard	Affordable prosthetic and orthotic products that are cost-effective, of good quality and context-appropriate should be developed and made widely available.
	Situation in Lebanon	In Lebanon, many people in need cannot access prosthetic and orthotic products. For those who are able to access such products, the cost effectiveness, quality or appropriateness is generally unknown.
	Recommendation	The government and third-party payers should fulfil their obligation for making prosthetic and orthotic products available at an affordable cost. This can be achieved with the involvement of a range of stakeholders, including the private sector and with targeted international funding. Reviewing the product priority list and price list for Lebanon will also assist in achieving affordable prosthetic and orthotic services.

C. PERSONNEL

Skilled personnel like Hussein are needed to work in prosthetics and orthotics services. Hussein produces mobility devices for people in need in Lebanon.



Figure 5: Personnel

PERSONNEL WHO PROVIDE PROSTHETICS AND ORTHOTICS SERVICES

25	WHO standard	Prosthetics and orthotics services should be provided by competent, adequately trained professionals.
	Situation in Lebanon	Prosthetics and orthotics services in Lebanon are provided by experienced clinicians and technicians. Clinical personnel include prosthetists/orthotists, physicians, and physiotherapists with varying levels of qualifications. There are no national professional standards of competence or training for personnel working in the sector. There is no pathway for training prosthetists/orthotists (clinicians), but there is a 2-year technician training programme. The programme does not have the staff or resources to extend the programme to a third year. Without completing a third year, graduates cannot be recognised as prosthetics and orthotics technicians in Lebanon.
	Recommendation	Existing personnel should develop a national competence framework for prosthetics and orthotics service personnel. This would provide a reference for training, maintaining or developing professional skills and competence.

26	WHO standard	Complicated prosthetics and orthotics treatment and care of complex cases should be provided by a multidisciplinary team of professionals with complementary skills.
	Situation in Lebanon	People requiring complicated prosthetics and orthotics treatment and complex cases could be assessed by a multidisciplinary team in Lebanon, however, there are limited opportunities for treatment provision due to a lack of appropriate technology solutions and the capacity for provision.
	Recommendation	Opportunities for continuing professional development of the multidisciplinary team about treatment options and technologies for complex care should be created. This would include the ability to assess, prescribe and produce intermediate and advanced prosthetic and orthotic technology types.

NUMBERS OF PROSTHETIC AND ORTHOTIC PERSONNEL REQUIRED (20)

The numbers of prosthetics and orthotics clinicians (prosthetists, orthotists and associates) and non-clinicians (prosthetics and orthotics technicians and support staff) are determined by factors such as the need; the organization of service systems and units (geographical distribution and whether services are centre-based or decentralized); the type and range of products provided (e.g. technology, complexity, proportions of prostheses and orthoses); the knowledge, skills and attitude of personnel; and the financial context.



Clinicians

On average, a country requires 5–10 prosthetics and orthotics clinicians per million population, although data and evidence are lacking. In high-income countries, the number of clinicians is usually higher, at 15–20 per million population or more in some countries. In low-income countries, the number may be as low as 1 per million population, complicating the provision of sufficient services of appropriate quality.

In a standard prosthetics and orthotics service unit, a clinician (supported by nonclinical personnel) can be expected to provide complete services to 300–600 users per year (including first provision, renewals, follow-up and maintenance and repairs). The number of users who can be assisted depends on the type and complexity of treatments. International comparative data are needed for more accurate figures.

Based on the WHO Standard, estimates for the number of clinicians needed in Lebanon are:

Mid-level estimate = 35 – 70 prosthetic/orthotic clinicians

Non-clinicians

Each clinician is normally supported by 2 non-clinicians, so that a country would need some 10–20 non-clinicians per million population. Assistance by 4–5 non-clinicians allows more users to be treated per team, and this is important in settings where there are few trained professionals, particularly in smaller, decentralized service units. Increasing the ratio of non-clinicians to clinicians is an economical way of developing services until more clinicians can be trained. In contrast, for specialized services (at tertiary level or in designated specialist clinics), a lower ratio of non-clinicians to clinicians, such as 1:1, is usually more appropriate.

Based on the WHO Standard, estimates for the number of non-clinicians needed in Lebanon are:

Mid-level estimate = 70 – 140 prosthetic/orthotic clinicians

More non-clinicians would be needed in the short term to support service provision because there are few trained professionals in Lebanon.

Minimum requirements

Each service unit should have at least one qualified prosthetist and orthotist. In countries where there are few professionals, the quality of clinical services should be assured by an experienced associate prosthetist or orthotist with the support and supervision of a prosthetist and orthotist. In workforce planning, the fact that at least two to four times more people require orthotic treatment than prosthetic treatment should be considered. Clinicians who work in small service units and are the only qualified professionals available should usually be trained in both disciplines. In units in which responsibility can be assumed by several clinicians, specialization in either discipline is usually sufficient.

World Health Organization. Standards for prosthetics and orthotics. Part 2: implementation manual. Geneva; 2017 (20)

TRAINING IN PROSTHETICS AND ORTHOTICS

CORE PERSONNEL		
27	WHO standard	Training in prosthetics and orthotics should be aligned with national and international educational standards.
	Situation in Lebanon	There are no national training standards for prosthetists, orthotists or technicians.
	Recommendation	The existing technician training programme should inform a national competence-based training standard. Lebanon has no national prosthetist/orthotist undergraduate training programme. The Prosthetics and Orthotics Syndicate should participate in developing a national competence framework (see Recommendation 25). The framework could then be used to assess international graduate applicant training competencies prior to registration.
28	WHO standard	Training in prosthetics and orthotics should be available at various levels to fully meet national needs.
	Situation in Lebanon	There is no pathway for training prosthetists/orthotists (clinicians) in Lebanon, but there is a technician training programme.
	Recommendation	The Prosthetics and Orthotics Syndicate should identify preferred international prosthetist/orthotist undergraduate training programmes that meet the proposed competence framework (see Recommendation 25).

OTHER PERSONNEL		
29	WHO standard	Health care professionals, especially rehabilitation professionals, who provide treatment relevant to prosthetics and orthotics services should have adequate knowledge about prosthetics and orthotics.
	Situation in Lebanon	Physicians' and therapists' knowledge about prosthetics and orthotics tends to come from on the job experience and personal reading, rather than undergraduate or postgraduate training.
	Recommendation	Greater access to information about prosthetics and orthotics should be made available. Learning about prosthetics and orthotics in physician and therapist training should be encouraged.

CONTINUING PROFESSIONAL DEVELOPMENT		
30	WHO standard	Continuing professional development should be compulsory in prosthetics and orthotics professional practice.
	Situation in Lebanon	Opportunities for continuing professional development on prosthetics and orthotics are scarce in Lebanon.
	Recommendation	Prosthetics and orthotics personnel should be encouraged to find and engage with their own continuing professional development.

PLANNING THE PROSTHETICS AND ORTHOTICS WORKFORCE

31	WHO standard	Workforce planning should take into account all the disciplines required in prosthetics and orthotics services at all levels.
	Situation in Lebanon	There is no documented workforce data to clearly describe the current personnel working in prosthetics and orthotics services making workforce planning very difficult.
	Recommendation	Establish what personnel are currently providing prosthetics and orthotics, determine the future workforce needed and develop a strategic plan that takes into account the disciplines needed at all levels of the health system.

32	WHO standard	Prosthetics and orthotics service units should have at least one prosthetist and orthotist to supervise and guide clinical and technical work.
	Situation in Lebanon	Services in Lebanon have a prosthetist/orthotist to supervise and guide clinical and technical work. However, many prosthetists/orthotists are overstretched, and more are needed to deliver an appropriate quality of care.
	Recommendation	Services should identify an acceptable caseload for prosthetists/orthotists and technicians, and consider the requirements for safe services and the effective supervision of the workforce.
33	WHO standard	A strategy to retain prosthetics and orthotics personnel should be in place.
	Situation in Lebanon	There is no national strategy for the retention of prosthetics and orthotics personnel. International 3-year programmes for prosthetist/orthotist training are recognised in Lebanon if graduates pass a Lebanon based colloquium test (facilitated by the Prosthetics and Orthotics Syndicate and Ministry of Education) which then provides them with a work permit from MoPH.
	Recommendation	Workforce planning should include strategies for the retention of personnel and a review of the Prosthetics and Orthotics Syndicate registration processes for the employment of international candidates.

PROFESSIONAL REGULATION AND RECOGNITION

34	WHO standard	Prosthetics and orthotics clinicians should be regulated by the State within regulations for health professionals.
	Situation in Lebanon	In Lebanon the Prosthetics and Orthotics Syndicate have a list of prosthetists/orthotists and technicians. There are 69 registered personnel. Forty-one are active professionals and two are Palestinians unable to practice under MoPH. From the 41 working professionals, 27 centres have personnel that can receive MoPH referrals. As of 2019 only 18 centres were receiving referrals.
	Recommendation	Possibilities for professional state recognition complementary to Law 397 (24), with a stronger alignment to other health professionals should be explored. This would require advice from experts on legislative instruments for the health professions in Lebanon.
35	WHO standard	Prosthetists and orthotists should assume responsibility for services provided by associated and non-clinical personnel under their supervision.
	Situation in Lebanon	Prosthetists/orthotists in the larger services in Lebanon assume responsibility for a relatively high number of associated and non-clinical personnel. The supervision roles are determined locally in each service.
	Recommendation	Models of supervision within teams of service personnel should be clarified to ensure that safe and effective supervision is in place.
36	WHO standard	Prosthetics and orthotics personnel should have a clear career structure and employment conditions that are aligned with those of other health care professionals, associates and technical personnel.
	Situation in Lebanon	There is no clear national career structure or employment conditions for prosthetics and orthotics personnel. Currently employees would fall under the general Lebanese Work Law (25).
	Recommendation	A national career structure for prosthetics and orthotics personnel should be agreed as part of workforce planning and be aligned with a competence framework.

D. PROVISION OF SERVICES

Provision of prosthetics and orthotics services in Lebanon is needed to enable people with disabilities. After prosthetic leg rehabilitation, Fadwa is able to take care of her four children and walk them to school.



Figure 6: Provision of services

USER-CENTRED SERVICE DELIVERY

37	WHO standard	A documented policy to safeguard the rights of users of prosthetics and orthotics services should be in place and in effect, outlining the features of user-centred services.
	Situation in Lebanon	User-centred service delivery and involvement in decision-making processes are absent within Lebanon’s prosthetics and orthotics sector due to the limitation of third-party payers having only one option for most components.
	Recommendation	Creation of a national safeguarding policy should be established in collaboration with service users and caregivers.

38	WHO standard	Service users and their representatives should be involved in policy-making, planning, implementing, monitoring and evaluating prosthetics and orthotics services, take part in decision-making at all levels and be represented on relevant committees.
	Situation in Lebanon	Service users within Lebanon are rarely involved in decision-making about their services. Service users rarely participate in the development of policies or in the planning, implementing, monitoring or evaluating of prosthetics and orthotics services.
	Recommendation	By creating an inclusive reformed National Committee of Prosthetics and Orthotics (see Recommendation 3), the revision of policies and development of a strategic plan and policy framework should have service users' and caregivers' participation.
39	WHO standard	Service users should be given the opportunity to choose their service provider and technology, including components and materials, according to their need, among the options available in the country and the limits set for financing or reimbursement.
	Situation in Lebanon	Most people in need of services in Lebanon do not have a choice of service provider or technology for their required devices. While self-funding users have choice depending on their budget, most service users have a device that is not part of the outdated MoPH price list.
	Recommendation	Determine a regulation process that allows service users to choose their provider and products.

SYSTEMS FOR DELIVERING SERVICES

INCLUSIVE SERVICE DELIVERY		
40	WHO standard	Prosthetics and orthotics should be accessible to all people who need them: girls, boys, women, men and older adults.
	Situation in Lebanon	Access to prosthetics and orthotics is not available for all service users within Lebanon.
	Recommendation	Complete a national needs assessment that reviews accessibility for all people residing in Lebanon regardless of age. This could be supported by the Disability Research and Advocacy Hub.
41	WHO standard	Prosthetics and orthotics services should be part of the health sector or be closely linked to it.
	Situation in Lebanon	In Lebanon prosthetics and orthotics services are clearly under the umbrella of health in principle, but the health system requires strengthening.
	Recommendation	With the support of the MoPH, create increased awareness of services amongst the health sector via a range of collaborative approaches.
42	WHO standard	Prosthetics and orthotics services should be delivered in a three-tier system, at primary, secondary and tertiary levels, with established links and two-way pathways for referral and follow-up.
	Situation in Lebanon	While some prosthetics and orthotics services are well integrated within the health system, others function in parallel to it.
	Recommendation	A policy to support the development of prosthetics and orthotics services and integration in the Lebanese health system is needed.

43	WHO standard	Maintenance and repair services should be an integral part of a prosthetics and orthotics service delivery system.
	Situation in Lebanon	Maintenance and repair services are being done at an individual practice/organisation level. There is no national approach to maintenance and repairs, other than for MOPH funded services which must include a guarantee and a 1-year maintenance.
	Recommendation	A schedule of maintenance and repair services should be included in an updated national price list. Services should follow up users after supplying prostheses and orthoses so that: users can try using their device in their everyday lives; the service can learn about outcomes; and devices can be optimised for fit and function.

INCLUSIVE SERVICE DELIVERY IN DISASTER CONTEXTS		
44	WHO standard	The provision of prostheses and orthoses in disaster conditions should be an integral part of the health sector response and be planned to ensure a seamless transition to long-term service provision.
	Situation in Lebanon	International organisations (e.g. ICRC and UNRWA) assist in the provision of services for disaster conditions, specifically for refugees residing in Lebanon post conflict. There is also activity relating to private provision of regional international services. The MoPH supports a small percentage of the population of Lebanon.
	Recommendation	Specialist prosthetics and orthotics services providing national and regional international complex trauma rehabilitation should be recognised and supported. This should include integrated physical and psychological support.

SERVICE UNITS

SETTINGS		
45	WHO standard	Prosthetics and orthotics service units should be established within or closely linked to health and rehabilitation service facilities, such as district and referral hospitals.
	Situation in Lebanon	Whilst there are a few prosthetics and orthotics service providers linked to hospitals, most services are not well integrated.
	Recommendation	Determine a national and regional referral network and process to ensure those requiring prosthetics and orthotics services have access through a wide variety of local health services. Improve access by increasing the awareness of the availability of services through the wider range of health services.
46	WHO standard	The possibility of integrating prosthetics and orthotics service units into broader services for assistive products should be considered and explored.
	Situation in Lebanon	There are a few providers that operate within multidisciplinary teams with some also providing other assistive products. However, most services are single discipline focusing primarily on prosthetics and orthotics.
	Recommendation	The Prosthetics and Orthotics Syndicate, supported by stakeholders and the Disability Research and Advocacy Hub, should create prosthetics and orthotics care pathways and prescription protocols based on clinical need and best available evidence.

INFRASTRUCTURE		
47	WHO standard	At all service levels, prosthetics and orthotics units should be designed to ensure effective, efficient, high-quality service provision in a user-friendly, barrier-free, safe clinical environment.
	Situation in Lebanon	Some providers have their individual quality control, however, there is no national approach for services that also involves service users.
	Recommendation	Generate a service checklist that is developed collectively with the Prosthetics and Orthotics Syndicate, MoPH, service users and caregivers.

EQUIPMENT		
48	WHO standard	Prosthetics and orthotics service providers should define and adhere to a plan for equipment maintenance and replacement.
	Situation in Lebanon	Whilst some service providers may have a process for maintenance and replacement, there is no national approach.
	Recommendation	Service providers should create a maintenance and replacement protocol and related budget for capital expenditure on equipment.

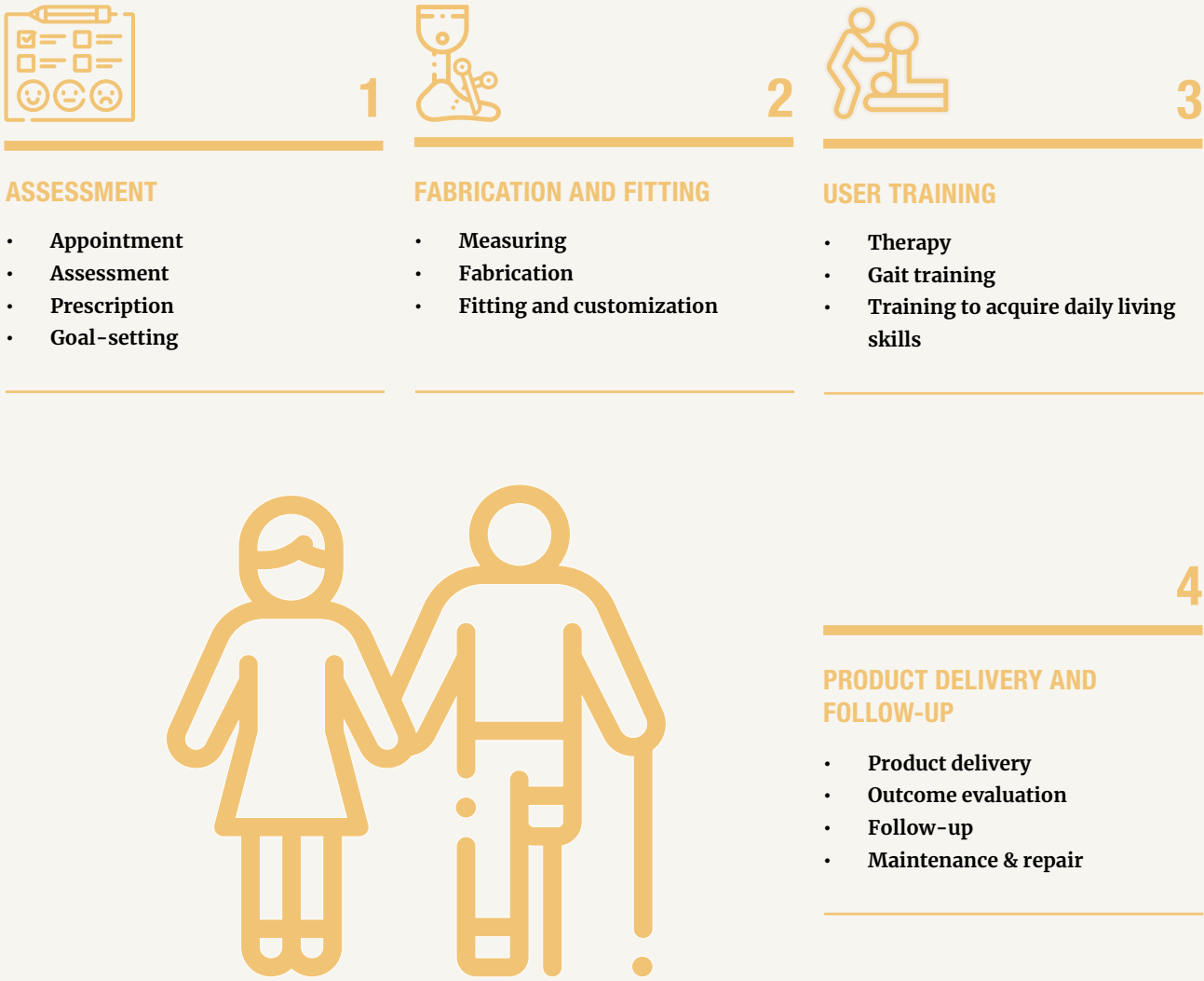
SAFETY		
49	WHO standard	The safety of service providers and users should be ensured by the establishment of documented health and safety regulations.
	Situation in Lebanon	Documented health and safety regulations are not mandatory in Lebanon but may exist at an individual service provider level.
	Recommendation	Develop a health and safety policy that is specific to service provision.

SERVICE UNIT PROCESSES

THE SERVICE DELIVERY PROCESS		
50	WHO standard	Prosthetics and orthotics service providers should identify and train partners in identifying and referring potential users.
	Situation in Lebanon	Lebanon does not have a national approach to referrals except for those that are registered as MoPH providers or linked specifically with other organisations, such as ICRC, UNRWA or the military.
	Recommendation	Establish a clear and comprehensive referral system that: appropriately links with all service providers; covers all regions; and supports all service users across Lebanon.
51	WHO standard	All steps in the delivery of prosthetics and orthotics services should be based on the best available evidence and should adhere to local, national and international standards and practice.
	Situation in Lebanon	Standards of prosthetics and orthotics services vary across Lebanon. Users are not assured a minimum quality of care.
	Recommendation	Supported by the Prosthetics and Orthotics Syndicate, existing prosthetics and orthotics service providers and service users should co-create a charter that describes and specifies agreed service standards of prosthetics and orthotic service provision in Lebanon.

52	WHO standard	Service providers should involve service users and caregivers in assessment, setting goals and planning treatment.
	Situation in Lebanon	Service users and caregivers in Lebanon are not routinely included in their treatment process.
	Recommendation	The reformed National Committee of Prosthetics and Orthotics should create an awareness education programme for (a) service providers (b) service users and (c) health sector on the importance of service user inclusion in treatment plans and processes.
53	WHO standard	Peer support and counselling should be available to service users as appropriate.
	Situation in Lebanon	In Lebanon there does not appear to be any peer support or counselling available within the sector. Service users reported never having been offered peer support or counselling as part of their treatment.
	Recommendation	The reformed National Committee of Prosthetics and Orthotics should establish a national approach to peer support by utilising international resources.

FIGURE 7: SERVICE DELIVERY PROCESS



54	WHO standard	Prosthetics and orthotics personnel should follow the instructions and guidelines of the component manufacturer and document any deviation from standard practice.
	Situation in Lebanon	Following instructions and guidelines is still an individualised practice with no national standardisation.
	Recommendation	The Prosthetics and Orthotics Syndicate should create a national policy and training opportunities to support the use of manufacturing guidelines.
55	WHO standard	Service users should be given sufficient training to ensure safe, effective use of prostheses and orthoses. Family members and caregivers should be involved as appropriate.
	Situation in Lebanon	Most facilities have minimum gait training equipment. Those working within a multidisciplinary team have a more structured approach to training to ensure safe, effective use of prostheses and orthoses.
	Recommendation	Service user training procedures should be implemented within all facilities and overseen by the Prosthetics and Orthotics Syndicate.
56	WHO standard	Users or caregivers should make the final decision about the acceptability of the fit and function of the prosthesis or orthosis.
	Situation in Lebanon	Mostly service providers in Lebanon make the final decision about the acceptability of the fit and function of devices.
	Recommendation	A ‘beneficiary’s checklist’ should be co-created by service users and service providers and then adopted within clinical practice.
57	WHO standard	The outcome of prosthetics and orthotics treatment should be evaluated and documented.
	Situation in Lebanon	Some individual providers may have an evaluation process, but Lebanon does not have a national approach to evaluation and documentation.
	Recommendation	Outcome measures should be used to verify whether the treatment goals were met at fitting and review. A ‘discharge form’ based on the International Classification of Disability, Function and Health should be implemented and can be supported by the Prosthetics and Orthotics Syndicate.
58	WHO standard	Prosthetics and orthotics service users should be followed up regularly.
	Situation in Lebanon	There is no consistent approach to service user follow up.
	Recommendation	Standardised follow up practice should be implemented and nationally supported by the Prosthetics and Orthotics Syndicate.

MANAGEMENT

59	WHO standard	Annual and long-term strategic and operational plans should be in place, with performance indicators for continuous monitoring.
	Situation in Lebanon	Whilst individual service providers may have annual operational plans there is no common approach.
	Recommendation	A structured and coordinated approach to strategic planning and operations management should be supported.
60	WHO standard	The required quality should be defined and adhered to at all levels and in all parts of the prosthetics and orthotics service delivery system.
	Situation in Lebanon	Currently there is no systematic process for quality control in Lebanon due to the unregulated nature of the sector.
	Recommendation	Create a quality control procedure within the policy framework.

3. THE WAY FORWARD

More than a decade has passed since the Republic of Lebanon signed the UNCRPD in 2007 and people in need still only have limited access to assistive products, including prostheses and orthoses.

Prostheses and orthoses should be available to all who need them. Their provision positively affects the health and well-being of users and their families and has broader socio-economic benefits. These mobility devices help people to become more active and to live healthy, productive, independent, dignified lives and to participate in education, the labour market and social life.

At the time of publication of this benchmark statement, Lebanon’s health services have been severely affected by the COVID-19 pandemic. While some prosthetic and orthotic services have continued to keep people with limb impairments mobile (by supplying them with their mobility assistive technology) using safe contact, other services have contributed to the production of personal protective equipment (face visors) to support the national effort to protect their fellow health and care workers during the pandemic. There now needs to be a phased return to the provision of prosthetic and orthotic services to arrest the decline of these services, and then to build them up as part of a new phase of development.

This benchmark statement compares the situation for prosthetics and orthotics services in Lebanon with international standards (8). It provides a baseline against which positive development can be planned. The recommendations clearly show the developments needed in four areas of the system, namely: policy, products, personnel and provision of services. This publication is a decisive step towards strengthening universal health coverage and working towards the 2030 SDGs, making sure that “no one is left behind” (11).

NEXT STEPS FOR DEVELOPMENT

STEP 1: VISION AND POLICY FRAMEWORK

There is a need for MoPH to work with key stakeholders to develop a long-term vision for Lebanon’s prosthetics and orthotics sector by 2030. This should be done at the same time as creating a national prosthetics and orthotics policy framework in which the sector can operate. This will include strengthening and evolving existing institutions, such as the National Committee of Prosthetics and Orthotics and the Prosthetics and Orthotics Syndicate to have more powers.

STEP 2: AN IMPLEMENTATION PLAN FOR LEBANON

Key stakeholders should together develop the sector. This will involve:




- Agreeing priorities for development.
- Capacity building through training and mentoring to help gain support, understanding and knowledge about the 4 areas of the system of prosthetics and orthotics provision, namely policy, products, personnel, and provision.
- Developing a 10-year action-oriented implementation plan with SMART (specific, measurable, achievable, realistic and timely) objectives.
- Developing campaigns and a national resource bank for each area (policy, products, personnel and provision of services) with individual templates for services and businesses to include a communication plan, key messages, case stories, images, graphics and video content.

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