

Assistive technology

in the Eastern Mediterranean Region: results of a rapid assessment



World Health
Organization

REGIONAL OFFICE FOR THE Eastern Mediterranean

Assistive technology

in the Eastern Mediterranean Region: results of a rapid assessment



**World Health
Organization**

REGIONAL OFFICE FOR THE **Eastern Mediterranean**

WHO Library Cataloguing in Publication Data

Names: World Health Organization. Regional Office for the Eastern Mediterranean

Title: Assistive technology in the Eastern Mediterranean Region: results of a rapid assessment / World Health Organization. Regional Office for the Eastern Mediterranean

Description: Cairo: World Health Organization. Regional Office for the Eastern Mediterranean, 2019

Identifier: ISBN 978-92-9274-429-8 (pbk.) | ISBN 978-92-9274-430-4 (online)

Subjects: Self-Help Devices | Disabled Persons | Outcome Assessment, Health Care | Technology Assessment, Biomedical - methods | Data Collection - methods

Classification: NLM WB 320

This publication was originally published under ISBN 978-92-9022-303-0, 978-92-9022-304-7

© World Health Organization 2019

Some rights reserved. This work is available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo>).

Under the terms of this licence, you may copy, redistribute and adapt the work for non-commercial purposes, provided the work is appropriately cited. In any use of this work, there should be no suggestion that WHO endorses any specific organization, products or services. The use of the WHO logo is not permitted. If you adapt the work, then you must license your work under the same or equivalent Creative Commons licence. If you create a translation of this work, you should add the following disclaimer along with the suggested citation: "This translation was not created by the World Health Organization (WHO). WHO is not responsible for the content or accuracy of this translation. The original English edition shall be the binding and authentic edition".

Any mediation relating to disputes arising under the licence shall be conducted in accordance with the mediation rules of the World Intellectual Property Organization.

Suggested citation. Assistive technology in the Eastern Mediterranean Region: results of a rapid assessment. Cairo: WHO Regional Office for the Eastern Mediterranean; 2019. Licence: CC BY-NC-SA 3.0 IGO.

Sales, rights and licensing. To purchase WHO publications, see <http://apps.who.int/bookorders>. To submit requests for commercial use and queries on rights and licensing, see <http://www.who.int/about/licensing>.

Third-party materials. If you wish to reuse material from this work that is attributed to a third party, such as tables, figures or images, it is your responsibility to determine whether permission is needed for that reuse and to obtain permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

General disclaimers. The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by the World Health Organization to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use.

Design and Illustration by YAT Communication

Contents

Acknowledgements	v
Foreword	vi
Executive summary	vii
1. Background.....	1
2. Current status of assistive technology	3
2.1 Global level.....	3
2.2 Regional level	4
3. Assessment of assistive technology.....	6
3.1 Rationale for the assessment.....	6
3.2 Objective of the assessment.....	7
3.3 Methods	7
3.3.1 Assessment tool and data collection.....	7
3.3.2 Data analysis	8
3.3.3 Limitations.....	8
4. Results and discussion	9
4.1 Policy and financing.....	9
4.2 Information and research	10
4.3 Products	11
4.3.1 Regulations	12
4.3.2 Availability.....	12
4.3.3 Affordability	12
4.4 Personnel	17
4.4.1 Specialists and training.....	17
4.4.2 Non-specialist health workers.....	18
4.4.3 Professional associations.....	19
4.5 Service provision.....	19
4.5.1 Service providers.....	19
4.5.2 Service delivery.....	19
4.5.3 Monitoring and regulation of services.....	20
5. Conclusion.....	21
5.1 Recommendations	24
References	25
Annex 1. Glossary of terms	27
Annex 2. Survey tool	33
Annex 3. Results for individual assistive products	51
Annex 4. Results for assistive technology personnel and training....	67

Acknowledgements

WHO would like to thank the following for their contributions to the development and implementation of the rapid assessment survey and the development of this report.

WHO Regional Office for the Eastern Mediterranean: Dr Adham Ismail, Health and Biomedical Devices; Dr Maha El-Adawy, Health Protection and Promotion; Dr Zafar Mirza, Health Systems Development; Dr Hala Sakr, Violence, Injuries and Disabilities; Ms Zainab Eleiba and Dr Malek Qutteina (consultants); and Mr Muhammad Attlam (intern).

WHO headquarters: Dr Alarcos Cieza and Dr Carla Sabariego, Blindness, Deafness Prevention and Disability and Rehabilitation; Ms Licia Di Pietro, Mr Chapal Khasnabis, Mrs Emma Tebbutt and Dr Wei Zhang, Global Cooperation on Assistive Technology (GATE), Department of Essential Medicines and Health Products.

Country focal persons for the rapid assessment who coordinated data collection at country level: Dr Ahmad Zaher Sharifi (Afghanistan); Dr Rehab Marzooq Al-Marzooq (Bahrain); Dr Mohammad Taghi Joghataei (Islamic Republic of Iran); Dr Ahmad Hasan Rhadi (Iraq); Dr Natalia Anatolievna Mohammed (Jordan); Mrs Sizar Akoum (Lebanon); Dr Abo-Baker Alfogehy (Libya); Dr Diouri Mohamed Khalil (Morocco); Dr Adhra Al Mawali (Oman); Mr Mohammad Jawad Afzal (Pakistan); Dr Imad Almasri (Palestine); Mr Ali Rashid Al Marri (Qatar); Dr Murad A. Bin Sawad (Saudi Arabia); Mrs Arwa Elmardi (Sudan); Dr Ibrahim Mohamed Nor (Somalia); Dr Rafif Dahieh (Syrian Arab Republic); and Dr Ouenniche Saida Kerfai (Tunisia).

Expert peer reviewers: Dr Johan Borg, School of Education, Health and Social Studies, Dalarna University, Sweden; and Dr Malcolm MacLachlan, Professor of Psychology & Social Inclusion and Director of the Assisting Living & Learning (ALL) Institute, Maynooth University, Ireland and Extraordinary Professor of Disability & Development, Centre for Rehabilitation Studies, Stellenbosch University, South Africa.

Foreword

Assistive technology plays an important role in maintaining and improving people's functioning and thereby promoting their well-being. It enables people with difficulties in functioning to lead healthy, productive, independent and dignified lives, participating in education, the labour market and social life. Assistive products, a key subset of assistive technology, are needed by a broad range of population groups, such as older people, people living with noncommunicable diseases and people with disabilities and chronic conditions such as mental health problems, injuries and polio. Each and every one of us is likely to need assistive products at some stage of our lives due to temporary or permanent functional decline or difficulties.

It is estimated that nearly 100 million people in the Eastern Mediterranean Region are in need of one or more assistive products, but only 1 in every 10 of them have access to the products they need. This huge gap in access is observed across the countries of the Region, despite their diversity in terms of income level and development. Long-standing emergencies and conflict in some countries of the Region have resulted in injuries and disability on a large scale, with mounting unmet needs for assistive technology.

Access to assistive technology is thus an essential component in the continuum of health care and universal health coverage. It needs to be integrated into efforts to attain target 3.8 of the Sustainable Development Goals (SDGs) on universal health coverage. The United Nations Convention on the Rights of Persons with Disabilities (CRPD) also identifies access to mobility aids, assistive devices and technologies as a human rights obligation that every Member State must fulfil. Furthermore, access to assistive technology is an essential part of WHO's new vision for public health in the Eastern Mediterranean Region, *Vision 2023*, which emphasizes inclusiveness and respect for diversity, equity and equality for all.

In 2014, WHO launched the Global Cooperation on Assistive Technology (GATE) programme. In line with this initiative, the 63rd session of the WHO Regional Committee for the Eastern Mediterranean endorsed resolution EM/RC63/R.3 on improving access to assistive technology, which identified clear directions for Member States and WHO. Momentum was reinforced by World Health Assembly resolution WHA71.8 on the same subject.

To operationalize the provisions of the regional resolution, a rapid assessment of the situation regarding assistive technology in the Region was carried out. This assessment is a first step in addressing the serious lack of adequate information related to assistive technology that was noted in the regional resolution, especially in terms of: defining met and unmet needs; policy including financing, data and research; products; personnel and service provision.

This report presents the findings of that assessment. For the first time, WHO and our Member States in the Region have the data that show what we have to do. There is an urgent need to change the way we have traditionally perceived, designed, produced, manufactured, distributed, serviced and financed assistive products, drawing on a people-centred approach, with the ultimate aim of inclusive universal health coverage – leaving no one behind, and realizing the aspirations of the CRPD. Business as usual is no longer an option – we need to act right now to improve access to assistive technology.

Executive summary

Assistive technology is needed by a wide range of people worldwide, including people with chronic health conditions, people with disabilities and elderly people, as well as the broader population who may experience temporary or life-long impairment or functional decline across the life course. The increasing need for assistive technology and rehabilitation services is driven by the rise in noncommunicable diseases, injuries and ageing populations. Given the growing demand, assistive technology services need to be available within health care services.

Most countries of the Region have ratified the Convention on the Rights of Persons with Disabilities and made a commitment to provide access to assistive products. They have also endorsed different World Health Assembly resolutions on global action plans on noncommunicable diseases, mental health, ageing and health, and disability. In 2016, the World Health Organization (WHO) introduced the Priority Assistive Products List which increased attention on assistive technology worldwide. In the same year, the WHO Regional Committee for the Eastern Mediterranean adopted resolution EM/RC63/R.3 on improving access to assistive technology.

In light of the Priority Assistive Products List and resolution EM/RC63/R.3, a rapid assessment was carried out in 2017 of assistive technology in countries of the Eastern Mediterranean Region. The objective of the assessment was to collect baseline information on the provision of assistive products in the Region.

The global assistive technology needs assessment tool was adapted for use, which addresses five key components of delivery of assistive technology services: policy and financing, information and research, products, personnel, and service provision. Data were collected for 17 of the 22 countries of the Region by focal persons for each country who were nominated by the respective ministries of health. In view of the absence of registries, databases, and tracking or monitoring systems in most of the countries, the focal persons faced many challenges to obtain the data, especially from outside the health ministries.

This report presents the results of the assessment. The findings reveal a number of common challenges facing countries, to varying degrees, in their effort to improve access to assistive technology. The main challenges include: lack of adequate information on populations in need of assistive products; lack of a national assistive technology strategy or plan; lack of or insufficient government funding for assistive products; lack of or inadequate relevant information systems and research on assistive technology; weak systems for the registration, approval and pricing of assistive products; lack of reliable information on the availability and affordability of individual assistive products; shortages in certain specialist personnel and local training opportunities; weak coordination and/or referral between the different sectors for delivery of assistive technology services; and lack of systems for monitoring and regulating delivery of assistive technology services in most countries. Overall, the assessment shows that policies, programmes and service delivery systems are inadequate in many countries of the Region.

The report also presents recommendations based on the findings. The countries of the Region will need assistance to implement resolution EM/RC63/R.3, including developing an evidence-based policy to improve access to assistive technology within their health service systems and developing a national list of priority assistive products. Countries should seek

technical assistance from international experts in the field and recognized resources (e.g. relevant guidelines), but improved regional networking, exchange of experiences and sharing of resources can also support countries in their efforts to strengthen provision of assistive technology in their countries. Establishing a regional centre for assistive technology research, education and innovation is recommended.

The information in the report can help countries of the Region fulfil their obligations with regard to assistive technology, especially in implementing resolution EM/RC63/R.3 to improve access to assistive technology. However, to ensure access to assistive products for everyone, everywhere and leave no one behind, all countries of Region should follow up with a more in-depth assessment of the need for and supply of assistive products in their country and develop a national plan for the provision of assistive technology accordingly.

With these preliminary data, findings and recommendations, this report aims to start the process of developing or strengthening the provision of assistive technology in countries of the Eastern Mediterranean Region.

1 Background

Assistive technology is a subset of health technology that “refers to assistive products and related systems and services developed for people to maintain or improve functioning and thereby promote well-being. It enables people with difficulties in functioning to live healthy, productive, independent and dignified lives, participating in education, the labour market and social life. Assistive products are essential tools: to compensate for impairment or loss of intrinsic capacity; reduce the consequences of gradual functional decline; reduce the need for carers, for primary and secondary prevention; and to help rationalize health and welfare costs” (1). Assistive products are also used to prevent impairments and secondary health conditions.

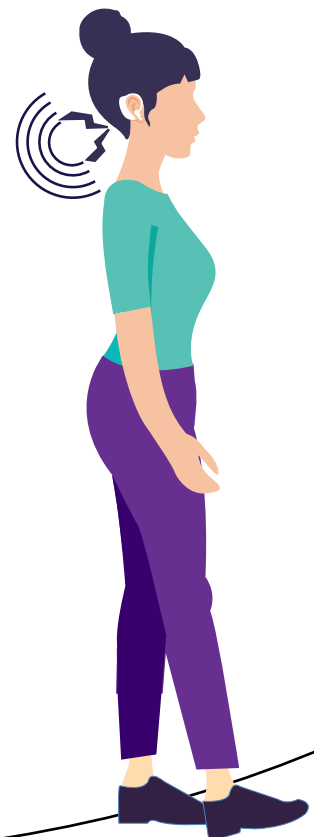
Assistive products include devices, equipment and instruments, such as wheelchairs, hearing aids, spectacles, pill organizers and artificial limbs, as well as information and communication technology, such as memory aids, specialized computer hardware and software and customized telephones. Priority assistive products are the products that are essential to “maintain or improve an individual’s functioning and which therefore need to be available at a price the community/state can afford” (2).

Assistive technology is required by a wide range of people, including people with chronic health conditions, people with disabilities and elderly people, and also the broader population, who may experience temporary or life-long impairment or functional decline across the life course. The increasing need for assistive technology and rehabilitation services is driven by the rise in noncommunicable diseases, injuries (from road traffic crashes, war and natural disasters) and ageing populations. To manage these challenges, assistive technology services need to be available along with promotive, preventive, curative, rehabilitative and palliative services (3).

Investing in the provision of assistive technology will help build the capacity of people in need of assistive products and reduce the need for formal health and support services, long-term care and the work of caregivers. Without assistive products, people who need them are at risk of exclusion, isolation and poverty, and may become a burden on their family and society (2).

The positive effect of assistive products goes far beyond improving the health and well-being of individual users and their families. There are also socioeconomic benefits as a result of reduced direct health and welfare costs (such as recurrent hospital admissions or state benefits) and a more productive labour force, which indirectly stimulate economic growth (2).

With the 2030 Sustainable Development Agenda, Member States of the United Nations (UN) are committed to achieving the Sustainable Development Goals (SDGs) and their related targets. Member States



have an obligation under SDG 3 (ensure healthy lives and promote well-being for all at all ages), in particular target 3.8, to ensure universal health coverage. Without the inclusion of assistive technology as an essential component of universal health coverage and integrated people-centred health services, it will not be possible to achieve this target. Assistive technology is also needed in order to achieve targets of other SDGs, such as access to public services including education (SDG 4), and employment (SDG 8). Assistive technology is a crucial enabling factor and a prerequisite for integration and inclusion (3).

In October 2016, the 63rd Session of the WHO Regional Committee for the Eastern Mediterranean endorsed resolution EM/RC63/R.3¹ on Improving access to assistive technology. This was reinforced in 2018 by World Health Assembly resolution WHA71.8² on the same subject.

Other important global commitments that countries have endorsed include the UN Convention on the Rights of Persons with Disabilities (4), and World Health Assembly resolutions on the prevention and control of noncommunicable diseases (2013)³, mental health (2013)⁴, ageing and health (2016)⁵, eye health care (2013)⁶ and disability (2013)⁷.

Unless progress is made on the provision of assistive technology, it is unlikely that UN Member States will be able to achieve the SDGs, with their ambitious vision to leave no one behind, or fulfil their other related obligations.

¹ EM/RC63/R.3: http://applications.emro.who.int/docs/RC63_Resolutions_2016_R3_19120_EN.pdf?ua=1

² WHA71.8: https://apps.who.int/gb/ebwha/pdf_files/WHA71/A71_R8-en.pdf

³ WHA66.10: http://apps.who.int/gb/ebwha/pdf_files/wha66/a66_r10-en.pdf

⁴ WHA66.8: http://apps.who.int/gb/ebwha/pdf_files/WHA66/A66_R8-en.pdf?ua=1

⁵ WHA69.3: http://apps.who.int/gb/ebwha/pdf_files/WHA69/A69_R3-en.pdf

⁶ WHA66.4: http://apps.who.int/gb/ebwha/pdf_files/WHA66/A66_R4-en.pdf

⁷ WHA66.9: http://apps.who.int/gb/ebwha/pdf_files/wha66/a66_r9-en.pdf

2 Current status of assistive technology

2.1 Global level

WHO estimates that more than one billion people around the world need one or more assistive product (5). People most in need of assistive technology include older people, people with noncommunicable diseases, people with disabilities, people with mental health conditions including dementia and autism, and people with gradual functional decline. As people age, their functioning declines in multiple areas and their need for assistive products increases accordingly. With the progressive ageing of the global population and rising prevalence of noncommunicable diseases and injuries, the number of people needing assistive products is projected to increase to more than two billion by 2050 (1).

Many barriers exist to the provision of assistive technology services, including: lack of awareness and prioritization; absence of policies and plans; high costs and non-existent or inadequate funding mechanisms; insufficient numbers of appropriately trained professionals; absence of facilities and equipment; ineffective service models; and lack of integration and decentralization of services. In addition, lack of research and data on needs, unmet needs, type and quality of services provided, costs, and benefits also impede the development of effective assistive technology services (6).

It is estimated that currently only about 10% of those in need of assistive products have access to them (7). This is because of high costs, limited availability and inadequate financing in many settings, as well as a widespread lack of awareness of the issue and suitably trained personnel (2). For example, only 5–15% of the 70 million people who need a wheelchair have access to one (8), and the production of hearing aids only meets 10% of the need worldwide and 3% of the need in low-income countries (9). In addition, 200 million people with low vision across the world have no access to spectacles or other low-vision devices they need (10).

To improve access to high-quality, affordable assistive products in all countries, WHO introduced the Priority Assistive Products List in 2016 (2). The list includes 50 priority assistive products, selected on the basis of widespread need and impact on a person's life. The list can be used to guide product development, production, service delivery, procurement and reimbursement policies (including insurance coverage), and help shape the market (2).



The Priority Assistive Products List is the first stage of implementing a global commitment to improve access to assistive products – WHO’s Global Cooperation on Assistive Technology (GATE) initiative, which is being carried out in partnership with UN agencies, international organizations, donor agencies, professional organizations, academia, and organizations of and for people with disabilities (11).

WHO’s GATE initiative aims to enable children with disabilities to access education and adults to earn a living, overcome poverty, participate in all societal activities, and live with dignity, which are some of the key objectives of the SDGs. Investment in technology to make assistive technology available and affordable is a practical step in line with the theme of the 2014 International Day of Persons with Disabilities “Sustainable development: the promise of technology” (12).

2.2 Regional level

A technical paper on the status of assistive technology in the Eastern Mediterranean Region was presented to the 63rd session of the WHO Regional Committee for the Eastern Mediterranean in October 2016 (3). This paper indicated that existing gaps in knowledge and specific data made it difficult to assess the need for and access to assistive technology by those who require it in the Region. However, several studies and reports on disabilities, visual and hearing impairments, ageing populations, noncommunicable diseases, mental health conditions, and injuries, as well as data in emergency situations, show limited access to appropriate, affordable and good quality products (3).

For example, available data show that the proportion of the ageing population (60 years and older) of the overall regional population will increase from about 6.6% in 2015 to almost 15.0% in 2050 (13). Noncommunicable diseases are also increasing in the Region and the prevalence of the main behavioural risk factors is among the highest in the world (14). Given that for every road traffic death, 20–50 people are estimated to have non-fatal road traffic injuries with possible permanent disability (15), and that the Region has the third highest rate of road traffic deaths worldwide (16), the number of disabilities as a result of road traffic injuries is expected to be high. In addition, many of the people who contracted and survived poliomyelitis in the Region over past few decades are now living with disabilities. The only two countries in the world that are still polio-endemic are Afghanistan and Pakistan, both in the Region. Since 2007, WHO has been implementing the polio rehabilitation initiative in Pakistan and more than 800 children have received orthotic devices so far. These figures are a proxy indicator of the polio-related needs still to be addressed (3).

The need for assistive technology is also likely to increase and become more prominent in emergency situations. For many years, the Region has faced an unprecedented number of emergencies requiring humanitarian assistance, with more than 62 million people affected. These emergencies have increased health care needs and the potential demand for assistive products (17). For example, the 2016 humanitarian needs review in the Syrian Arab Republic lists trauma and injuries (including disabilities) and noncommunicable diseases as the priority health needs. About 1.5 million people with disabilities and 600 000 with chronic illness are in need of humanitarian assistance and have limited access to needed services (18). Of internally displaced populations in the country, 88.5% indicated that they did not have satisfactory access to rehabilitation services (19).

No studies have been conducted that provide adequate data on the current needs of the population in the Region for assistive technology and the potential size of the market. Moreover, the financial and human resources required to market, finance, operate, train and manage assistive products are not known (3). The feasibility of local production of certain types of products, especially those considered essential, has never been reported. If the prevalence of functional decline from different causes is used as a proxy measure for estimating the needs of the population (3), then the regional market for assistive technology is likely large and would appeal to local and global manufacturers.

In terms of number and type of needed products, more than one product for each person in need may be required and a wide range of current and potential users is expected. By applying the global estimations of the GATE initiative (11), tens of millions of people in the Region are in need of assistive technology. Following the same global trend for types of assistive technology (20), the number of people in the Region who need glasses and low-vision aids, wheelchairs, mobility aids, prostheses or orthoses, hearing aids and cognitive aids ranges between 3.1 and 86.1 million (Table 1).

In addition to limited and inadequate data, including lack of uniform definitions and standardized methodologies, other important regional challenges with regard to assistive technology are: lack of national policies, programmes and financial resources; inadequate needs assessment; and unavailability of appropriate services and trained human resources. In the absence of adequate public services, legislation and policies, assistive technology services are often provided by the private sector, nongovernmental organizations, donors and international institutions. This situation has implications for the universal and equitable coverage of assistive products. In addition, crises and conflicts can result in health systems being dismantled and fragmented, thus limiting their capacity to deliver essential care, including assistive technology (3).

Table 1 Estimated number of people in need of assistive technology in the WHO Eastern Mediterranean Region

Assistive product group	Number in need of assistive technology (millions)
Glasses and low-vision aids	86.1
Wheelchairs	6.7
Mobility aids	13.3
Prostheses or orthoses	3.1
Hearing aids	8.3
Cognitive aids	13.3

3. Assessment of assistive technology

3.1 Rationale for the assessment

The technical paper presented to the 63rd session of the WHO Regional Committee for the Eastern Mediterranean concluded that data were lacking on the need for and supply of assistive technology in the Region, and on existing legislation, policies and programmes on the provision and supply of assistive technology and related services, including skilled personnel and assistive products. The paper proposed a regional action plan to increase access to assistive technology in the Region, with a focus on policy and financing, service provision, products and personnel. In response, Member States passed resolution EM/RC63/R.3¹ (2016) on improving access to assistive technology, which urged Member States to:

1. develop an evidence-based integrated policy to improve access to assistive technology for all as an essential component of health service delivery systems, supported by adequate financing;
2. conduct a needs assessment using appropriate WHO tools to inform the proper planning of services;
3. develop a national priority assistive products list with minimum quality and safety standards, drawing on the WHO Priority Assistive Products List and based on national needs, context and resources;
4. ensure that provision of priority assistive products is included in all stages of emergency preparedness and response planning; and
5. ensure adequate and trained human resources for the provision of assistive products are available at all levels of health service delivery.

Due to the unavailability of specific data on needs and demand for assistive technology, regional data on ageing, noncommunicable diseases, injuries and disability had to be used as a proxy measure of the need for and required supply of assistive products when developing the technical paper. At the same time, no adequate information was available on legislation, policies or programmes on assistive technology and related services, including skilled personnel and assistive products.



¹ EM/RC63/R.3: http://applications.emro.who.int/docs/RC63_Resolutions_2016_R3_19120_EN.pdf?ua=1

In view of the lack of data and as a first step to take action on resolution EM/RC63/R.3, the WHO Regional Office for the Eastern Mediterranean undertook a rapid assessment to gauge the current status of assistive technology provision in the Region. This report is based on the findings of the assessment. A glossary of terms related to assistive technology used in this report is given in Annex 1.

3.2 Objective of the assessment

The objective of the assessment was to evaluate the provision of assistive technology services in countries of the Region in light of the newly adopted WHO list of priority assistive products (2) and resolution EM/RC63/R.3. The assessment collected baseline information on the system for providing assistive products. This information could be used by countries to plan and develop assistive product services and to carry out a more detailed assessment and analysis at a later stage if needed.

3.3 Methods

3.3.1 Assessment tool and data collection

The questionnaire used for this rapid assessment was adapted from a tool developed by the WHO as part of the GATE initiative to assess the capacity of countries to provide assistive technology (11). Additional questions were included for the regional questionnaire on the availability and affordability of individual assistive products.

The regional tool assesses 25 of the 50 products on the Priority of Assistive Products List, including six categories: cognition, communication, hearing, mobility, vision, and environment and personal care. WHO identified these 25 assistive products as ones that are very much needed and which can be delivered at the community level with minimum training of health care workers or community-based rehabilitation personnel, taking into consideration the regional context (2).

The assessment tool consisted of the following five sections (see Annex 2 for the survey questionnaire).

- Policy and financing
- Information and research
- Products, including availability and affordability
- Personnel
- Provision (service delivery)

All questions were in a yes/no or multiple choice format so the tool could be completed quickly and the responses easily analysed. Respondents were encouraged to provide any additional details, where applicable.

The assessment was implemented in the 17 countries of the Region that responded to an

email from the WHO Regional Office requesting their participation: Afghanistan, Bahrain, Iran (Islamic Republic of), Iraq, Jordan, Lebanon, Libya, Morocco, Oman, Pakistan, Palestine, Qatar, Saudi Arabia, Somalia, Sudan, Syrian Arab Republic and Tunisia. Ministries of health of the countries were asked to nominate one focal person for their country who was officially assigned to administer the assessment tool. An orientation session for focal persons was held online, with additional follow-up meetings and communications throughout the implementation process.

Data collection took place from April to July 2017 with WHO support, and the final data sets were sent to respective governments to approve and endorse.

3.3.2 Data analysis

Data analysis was conducted by the WHO technical teams concerned. Data collected from the assessment were aggregated and analysed across countries to produce information that would be representative of the 17 Member States that took part. Descriptive statistical analysis was used to analyse the data. Results were categorized according to the different sections: policy and financing, information and research, products, personnel, and service provision. Non-responses were revalidated or checked by communication with the focal person. Therefore, the non-response rate can be interpreted as an indicator of a lack of knowledge and information on the question investigated.

3.3.3 Limitations

Several limitations and constraints affected the implementation of the survey and, as a result, the quality of the findings. These include the following.

- The responsiveness and implementation varied greatly between countries.
- A standardized protocol was lacking for the selection of the national officials responsible for data collection. Some held managerial positions, whereas most were practising assistive technology professionals.
- Focal persons had some difficulty in obtaining data from informants (ministries of health or nongovernmental organizations that provided the secondary data), especially from outside the health ministry. Gaps in reported data were observed, especially those related to products and personnel sections.

4 Results and discussion

4.1 Policy and financing

Section 1 of the survey looked at whether the country had: a national body (committee, commission or council) to oversee assistive technology and whether user groups were represented in this body; a national or subnational strategy, plan or programme; government budget allocations for assistive technology; and government financing schemes and tax exemptions for assistive products. Table 2 shows the number of countries in the Region that have these components of assistive technology policy and financing.

Ten of 17 countries have a national body to oversee assistive technology. This body is mostly led by the ministry of social welfare and/or a national disability council. Assistive technology thus seems to be addressed under the overall umbrella of disability. It is worth mentioning that these bodies may not be involved in the provision of assistive products despite being the ones responsible for the overall management of the national assistive technology programme. In nine of the 10 countries with a national body, organizations for disabled persons or other user groups of assistive products are represented on the national body. Such representation, regardless of its level, indicates an awareness of the need to engage and consult with users of assistive products.

Just over half of the responding countries (nine countries) have a national or subnational strategy, plan or programme on assistive technology. Two of these countries are in the process of developing a strategy. In two countries, the strategy is part of a wider disability-related strategy or programme.

Table 2 Number of countries of the Eastern Mediterranean Region with components of assistive technology policy and financing

Component of assistive technology policy and financing	No. of countries (n = 17)
National body overseeing assistive technology	10
Users of assistive technology represented on the national body	9
Strategy, plan or programme on assistive technology	9
Government budget allocations for assistive technology	10
Tax exemptions for assistive products	11

Components are not mutually exclusive.



Ten countries have a dedicated government budget for the provision of assistive products. In eight countries, this budget is allocated at the central government level only, while in two countries the budget is allocated at both the central and provincial or district or local government levels.

In terms of government financing schemes for the provision of assistive products, these products are provided free of charge (or at a subsidized cost) in 14 countries at outlets other than the health system, such as through social welfare and nongovernmental organizations. In nine countries, free or subsidized assistive products are provided in facilities with a medical prescription, while in six countries, assistive products are included within the national health insurance scheme. In three countries, vouchers or cash for assistive products are provided after a needs assessment. Only one country reported that the government did not provide for assistive products at all. The budgets for provision of assistive technology range from US\$ 1.56 to 960.00 per person in need. This illustrates the wide range of budgets allocated to assistive technology in the countries of the Region. Imports of assistive products are exempt from taxation in 11 of the 17 countries.

The above findings suggest a lack of consistency in how countries of the Region approach policy and financing for assistive technology. It is also apparent that assistive technology is mostly dealt with under the wider umbrella of disability, which may reflect a narrow perception of the role of assistive technology, limiting it to people with disability and overlooking its role in supporting other population groups, such as elderly people.

4.2 Information and research

Section 2 of the survey asked about information and research on assistive technology. In eight countries, the government does not have an information system on assistive technology. Nine countries reported having an information system at the central government and/or sub-central levels; eight indicated that it was available at the central government level (Table 3).

Of the nine countries that have an information system on assistive technology, data are mostly collected on the number of users (in seven countries), the number of products provided (seven countries) and on the registry of assistive products (six countries).

Table 3 Number of countries of the Eastern Mediterranean Region with a national information system on assistive technology

National information system on assistive technology	No. of countries (<i>n</i> = 17)
No	8
Yes (at the central government level)	6
Yes (at the central government and subcentral level)	2
Yes (at the provincial/district/local government level only)	1

Table 4 Number of countries of the Eastern Mediterranean Region with agencies or institutes that conduct research on assistive technology and type of research being conducted

Research	No. of countries (<i>n</i> = 17)
<i>Agencies or institutes conducting research on assistive technology</i>	
No	8
Yes (government-led)	7
Yes (non-government-led)	1
Yes (government-led and non-government-led)	1
<i>Areas of research</i>	(<i>n</i> = 9)
Provision of assistive technology	7
Assistive products	6
Need for assistive technology	5
Policy and financing	4
Personnel working in assistive technology	2

Nine countries have agencies or institutes that conduct research on assistive technology. Most are government-led (seven of nine countries). Research by non-government agencies was reported by one country. In one country, both government-led and non-government-led research on assistive technology is carried out (Table 4). Provision of assistive technology services is the most common area of research (reported by seven countries), followed by assistive products (six), needs (five), policy and financing (four), and personnel (two) (Table 4). The key funding agencies of such research are usually national. None of the responding countries reported foreign funding for assistive technology research areas.

4.3 Products

Section 3 of the survey started with introductory questions on regulations and registration of assistive products for marketing and the existence of a price regulatory system for assistive products. Data were then requested on the availability, affordability and economic evaluation of individual assistive products.

Assessment of availability and affordability of specific assistive products was based on 25 essential products. This part of the survey was the most difficult for respondents to complete as information was often lacking on certain types of products. Therefore, this area had the highest level of non-response and/or “don’t know” answers. Nevertheless, the information provided could be very useful for planners and decision-makers and can provide a basis for a more thorough assessment in the future.

The main findings on availability and affordability of assistive products are presented in six categories of product: mobility, vision, hearing, environment and personal care, communication and cognition. The results for individual assistive products can be found in Annex 3.

Comparison of the different groups of products needs to be done with caution as the groups vary widely in size and composition. The mobility group is the largest and consists of 11 products; the vision group includes six products; the environment group has three products; the hearing and cognition groups each have two products; and the communication group has just one product. The 25 products also vary in complexity, from simple products to more advanced and sophisticated ones. The variation is most evident in mobility products, which range from walking sticks to lower-limb prostheses.

4.3.1 Regulations

In 10 of the 17 countries, regulations or standards exist that assistive products need to comply with before being allowed on the market. In 11 countries, assistive products need to be registered with a government authority or a similar body before being allowed on the market. In seven countries, this authority is under the health ministry or an authority related to medicines and medical equipment. In four countries, it is an authority related to industry and/or economy and/or commerce.

Only three countries have a price regulatory system for assistive products. In one of these countries, the price regulatory system is part of the generic regulations for consumer protection, while in another, it comes under health ministry regulations, and in the third, it comes under the economy ministry. Only one country has associations or networks of producers/manufacturers of assistive products, which have a role in regulating and ensuring distribution of products.

4.3.2 Availability

Mobility products are the most available products compared with the other groups. They were the group reported to be the most commonly available in the national list of approved medical devices (with regulatory market approval), to have generic technical specifications for their procurement, to be supplied by local manufacturers, and to have the supplies and services available (e.g. consumables, spare parts and maintenance) to maintain continued functionality of products. Communication and cognition products were reported to be the least available while vision, hearing and environment products occupy varying positions somewhere in the middle.

Table 5 shows the percentage of countries reporting the presence of availability indicators for each assistive product group (mobility, vision, hearing, environment and personal care, communication, and cognition). The percentage of countries reporting the availability of the different product categories on national lists of approved products ranged from 14.7% to 50.8%. Technical specifications for mobility, vision and hearing products were reported by 48.1%, 48.0% and 47.1% of countries respectively but by only 17.6% of countries for cognition products. In 35.3% of countries, local manufacturers supplied mobility products but in only 5.9% were hearing products supplied locally. Between 29.4% and 37.9% of countries reported that international manufacturers supplied the required assistive products; the remaining were supplied through unauthorized representatives. The availability of required supplies, spare parts and other services varied considerably between the different product types.

Table 5 Availability of assistive technology: percentage of the countries of the Eastern Mediterranean Region reporting the presence of availability indicators, averaged across the product types in each assistive product group

Assistive product group	Availability indicators				
	On national list of approved medical devices	Technical specifications available for procurement	Local manufacturers are suppliers	International manufacturers are suppliers	Supplies and services are available
Mobility (n = 11)	50.8	48.1	35.3	37.1	60.4
Vision (n = 6)	38.2	48.0	12.8	37.9	45.1
Hearing (n = 2)	32.4	47.1	5.9	39.2	50.0
Environment and personal care (n = 3)	31.4	27.5	23.5	37.9	35.3
Communication (n = 1)	23.5	23.5	11.8	35.3	23.5
Cognition (n = 2)	14.7	17.7	11.8	29.4	20.6

For mobility products, the answers were more or less consistent for the individual products. However, this was not the case with vision and hearing groups; spectacles and optical magnifiers and hearing aids were more likely to be on the national list of approved medical devices, have technical specifications for their procurement and have supplies and services necessary to maintain continued functionality of the assistive product than other products. Only two products in the mobility group, lower limb prosthesis and therapeutic footwear, were reported to be supplied by local manufacturers in more than half of the responding countries.

4.3.3 Affordability

Table 6 and Table 7 show the percentage of countries reporting the different categories of cost (very low, low, average, high or very high, or giving no response) for each type of assistive product, and the transportation, maintenance and training costs. The data shown are the average of all the products in each assistive product group. Two key observations are noted in the findings on affordability. First, costs varied widely and second the frequency of non-response was high for most product groups.

The cost of assistive products on the market reported by the countries ranged from very low to very high per product for the mobility and vision groups. However, most countries reported the costs as low or average. The cost of transportation of the types of products was mostly low, less than 3% of the total cost of assistive products. The cost of maintenance was mostly reported as average for three groups (mobility, vision and hearing) and low for the other three (communication, cognition and environment and personal care), i.e. less than 1–3% of the cost of the product. The cost of training was mostly between no cost/no need for training and low cost. These results indicate that the cost of making these products available and accessible to those in need might not be a barrier, which is different from global findings.

Table 6 Affordability of assistive technology: product and transportation costs for each assistive product group^a

Assistive product group	Cost of assistive product on the market ^b						Transportation costs ^c			
	Very low	Low	Average	High	Very high	No response	Low	Average	High	No response
Mobility (n = 11)	9.1	40.1	35.8	5.9	2.7	6.4	44.9	14.4	18.2	22.5
Vision (n = 6)	4.9	31.4	30.4	2.0	1.0	30.4	37.3	22.6	2.9	37.2
Hearing (n = 2)	5.9	17.7	35.3	11.8	0.0	29.4	29.4	29.4	2.9	38.2
Environment and personal care (n = 3)	5.9	49.0	17.7	3.9	0.0	23.5	39.2	13.7	9.8	37.2
Communication (n = 1)	5.9	35.3	23.5	0.0	0.0	35.3	29.4	11.7	5.9	52.9
Cognition (n = 2)	20.6	38.2	14.7	0.0	0.0	26.5	44.1	17.7	2.9	35.3

^aPercentage of the countries reporting the cost as: very low, low, average, high or very high, or giving no response, averaged across the product types in each assistive product group.

^bVery low cost: < US\$ 10; low cost: US\$ 10–100; average cost: US\$ 100–1000; high cost: US\$ 1000–10 000; very high cost: > US\$ 10 000.

^cLow: < 3% of product cost; average: 3–5% of product cost; high: > 5% of product cost.

Table 7 Affordability of assistive technology: maintenance and training costs for each assistive product group^a

Assistive product group	Cost of maintenance of assistive products ^b				Training costs ^b				
	Low	Average	High	No response	No cost/ no need for training	Low	High (conducted once)	High (continuous)	No response
Mobility (n = 11)	27.3	31.0	15.0	26.8	35.8	22.5	1.6	6.4	33.7
Vision (n = 6)	17.7	28.4	11.8	42.2	22.6	27.5	6.9	4.9	38.2
Hearing (n = 2)	5.9	38.2	14.7	41.2	20.6	26.5	8.8	0.0	44.1
Environment and personal care (n = 3)	29.4	13.7	11.8	45.1	43.1	11.8	2.0	2.0	41.2
Communication (n = 1)	29.4	17.7	5.9	47.1	23.5	23.5	0.0	5.9	47.1
Cognition (n = 2)	50.0	8.8	0.0	41.2	44.1	17.7	0.0	0.0	38.2

^aPercentage of the countries reporting the cost as: none, low, average, high, or giving no response, averaged across the product types in each assistive product group.

^bResponses are the customer perception of the training costs.

The non-response rate for the four cost-related questions was high – more than 20% of the countries for all products except for market cost of mobility products (6.4%). Non-response was especially high (> 40% of the countries) for maintenance costs for all product groups except mobility products (26.8%). Non-response on transportation costs was generally high, with the highest non-response rate for transportation in the communication group (52.9%), which had one product type only.

Table 8 Affordability of assistive technology: bulk procurement contract and frequency of replacement

Assistive product group	Bulk procurement contract ^a	Frequency of replacement of products (years) ^b				
		<n 1	1–3	3–7	> 7	No response
Mobility (n = 11)	46.0	2.1	27.3	20.3	11.8	38.5
Vision (n = 6)	44.1	2.9	20.6	18.6	10.8	47.1
Hearing (n = 2)	52.9	0.0	35.3	11.8	14.7	38.2
Environment and personal care (n = 3)	39.2	11.8	19.6	13.7	15.7	39.2
Communication (n = 1)	35.3	0.0	17.7	17.7	5.9	58.8
Cognition (n = 2)	38.2	8.8	20.6	8.8	5.9	55.9

^aPercentage of the countries reporting bulk procurement, averaged across the product types in each assistive product group.

^bPercentage of the countries reporting the frequency of replacement as: < 1, 1–3, 3–7 or > 7 years, or giving no response, averaged across the product types in each assistive product group.

With regard to individual product types, reported costs varied widely for items such as rollators, clubfoot braces, orthoses, therapeutic footwear, chairs for a shower, all vision products except white canes, and all hearing, communication and cognition products. The cost of transportation and maintenance was difficult to assess for individual products because of the high non-response rate. Responses on the cost of training for individual products mainly indicated no cost/no need for training and low cost. Nevertheless, wide variation in training costs was seen for audio players and Braille equipment. Non-response was also high for most products.

The wide variation in responses and high non-response rate suggest that systems to track costs associated with assistive technology are lacking, and the answers may reflect subjective judgments of the respondents.

Table 8 and Table 9 present the findings on other factors that affect the affordability of assistive products: method of product procurement, replacement frequency, body responsible for running costs, and the possibility of local production at lower costs.

Table 8 shows the percentage of countries that have bulk procurement contracts, averaged across the products types in each assistive product group, and the frequency of replacement. Fewer than half of the 17 countries reported procuring assistive products using a bulk procurement contract, the lowest being for communication products (35.3% of countries) and the highest for hearing products (52.9%). The highest reported bulk procurement was for products assisting walking (walking sticks, tripod walking sticks and crutches) and for hearing aids. The highest non-response was for portable ramps and communication boards (seven of 17 countries did not respond).

The reported frequency of replacement of the assistive product (in years) varied widely, from less than one year to more than seven years in almost all assistive product groups (Table 8). This wide variation was also evident in almost all individual products. It should be noted that the non-response rate for all groups was high (more than 38% of countries did not respond) and also for all individual products, most notably for communication, cognition and vision

products. Several countries did not answer this question as they thought the frequency of replacement would depend on many factors and thus it would not be possible to determine. However, the variation in responses (when provided) also suggest that countries do not have an adequate system to predict what assistive products will need to be replaced and when.

Table 9 shows the percentage of the running costs of assistive products covered by the various sectors (donors, public or private sectors, or other organizations) and the percentage of countries that indicated that assistive products could be produced locally at a lower cost. The public sector played a prominent role in meeting the running costs for mobility products (32.4% of the running costs were provided by the public sector) and hearing products (40.0%), in particular, and for vision (27.3%) and environment products (26.6%) to a lesser degree. The public sector contributed less to the running costs of communication (20.0%) and cognition (15.3%) products than other sectors. Donors and nongovernmental organizations played the leading role with vision, environment and communication products (31.4%, 34.4% and 40.0% of the running costs, respectively, were provided by donors and nongovernmental organizations). The private sector also contributed to running costs, particularly for vision and cognition products (31.4% and 34.5%, respectively). The non-response rate was high for communication and cognition products.

With regard to local production of assistive products at a lower cost, fewer than one third of the responding countries thought this was possible. A positive response was highest for mobility products and was zero for hearing products. In addition, only 7% of the responding countries on average thought vision products could be produced locally at a lower cost. At the level of individual product types, lower limb prosthesis was the product that more responding countries considered could be produced locally at lower cost.

The frequency of don't know or non-response answers was high, especially for cognition, vision, hearing and environment products. This observation suggests that countries in the Region may require assistance to assess whether certain types of products can be produced locally or regionally at a lower cost.

Table 9 Affordability of assistive technology: sectors covering running costs of assistive products and the possibility of local production at lower costs

Assistive product group	Percentage of running costs provided by:				Assistive products could be produced locally at lower costs ^a
	Donors/NGOs	Public sector	Private sector	Other	
Mobility (<i>n</i> = 11)	30.7	32.4	21.0	16.0	31.0
Vision (<i>n</i> = 6)	31.4	27.3	31.4	9.9	6.9
Hearing (<i>n</i> = 2)	25.0	40.0	25.0	10.0	0.0
Environment and personal care (<i>n</i> = 3)	34.4	26.6	26.6	12.5	23.5
Communication (<i>n</i> = 1)	40.0	20.0	26.7	13.3	29.4
Cognition (<i>n</i> = 2)	26.8	15.5	34.5	23.2	14.7

NGO: nongovernmental organization.

^aPercentage of the countries reporting that assistive technology could be produced locally at lower costs, averaged across the product types in each assistive product group.

4.4 Personnel

Section 4 of the survey assessed the availability of personnel working in assistive technology and their training. In addition, the provision of assistive technology products by non-specialized health workers (e.g. nurses and community-based rehabilitation workers) and the existence and role of professional associations for assistive technology in the country were also assessed.

4.4.1 Specialists and training

Of the 25 professional categories for assistive technology included in the questionnaire (see Annex 4 for the results for assistive products personnel and training), orthopedists, ear, nose and throat specialists, neurologists, and psychiatrists were reported to be available in all 17 countries. Almost all other types of professional associated with assistive technology were also present in most countries – only orthotists and wheelchair technicians and assistive technology practitioners (any personnel working in assistive technology not included within the other professional categories) were reported by fewer than half of the countries (Fig. 1).

The picture is less positive when it comes to degree qualifications related to assistive technology offered by local educational institutions (Fig. 2). Physiotherapy is the most common discipline offered locally (in 13 countries), followed by orthopaedics and psychology. Again professional qualifications for orthotists, assistive technology practitioners and wheelchair technicians were least reported with only one or two countries offering related professional training locally. The lack of local training programmes for specific specialities related to assistive technology appears to be a common feature, as only four countries reported having local programmes to train prosthetists, Braille teachers and mobility orientation trainers. Furthermore, only about one third of the countries reported having training for audiologists, audiometric technicians and speech and language therapists. Surprisingly, local training for special education teachers and community-based rehabilitation workers was reported by just over half of the responding countries.

Fig. 1 Number of countries of the Eastern Mediterranean Region reporting the availability of specialists related to assistive technology in the country

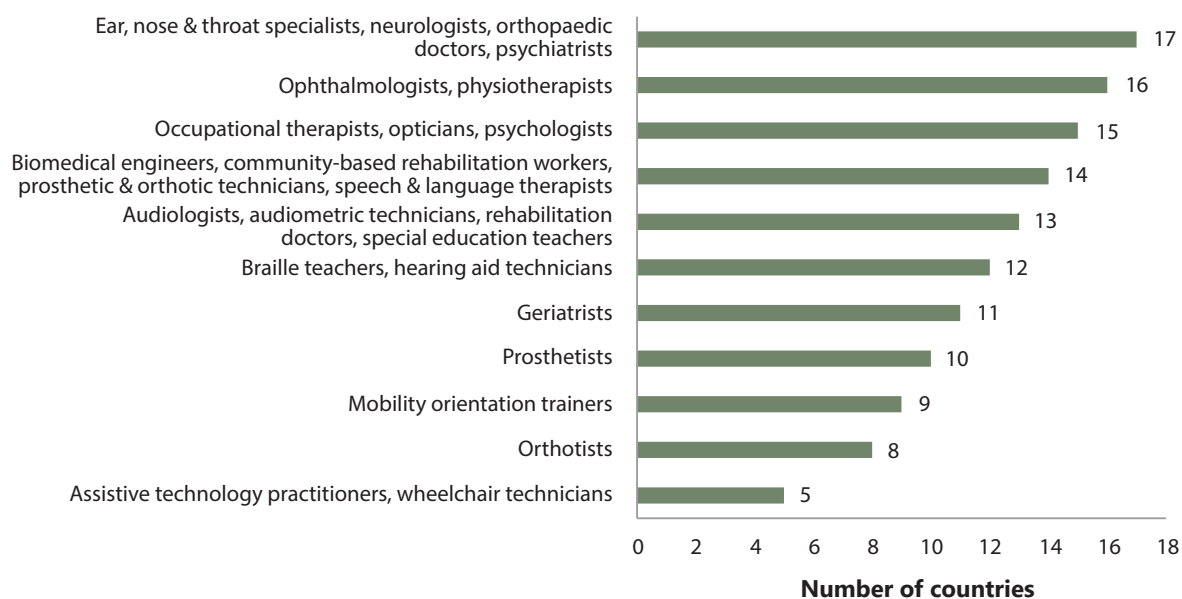
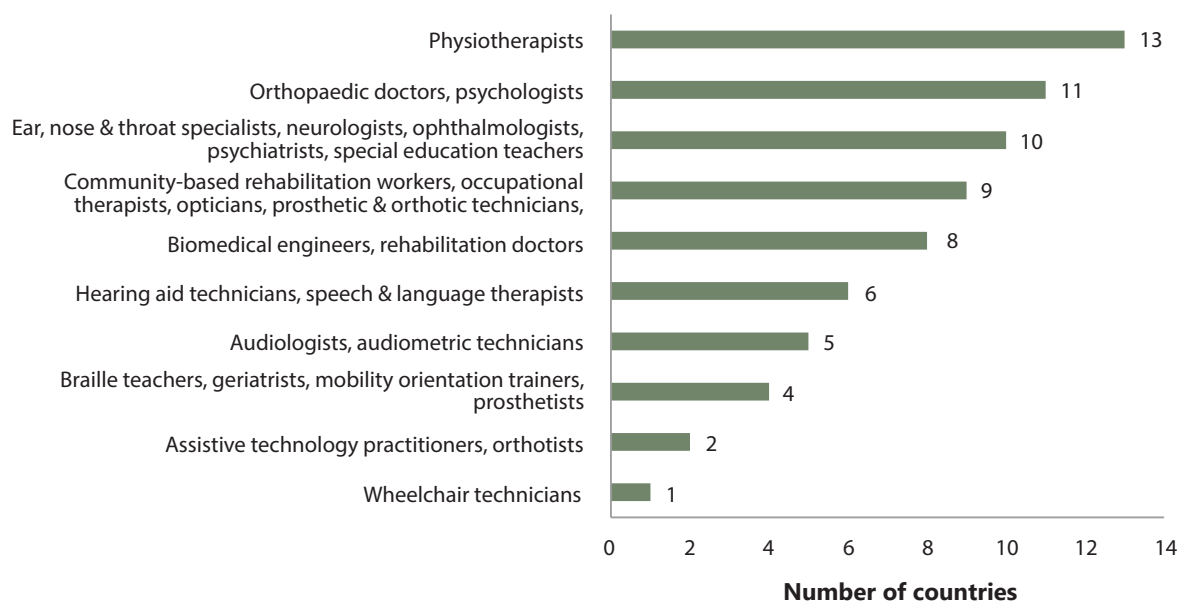


Fig. 2 Number of countries of the Eastern Mediterranean Region reporting degrees and professional qualifications related to assistive technology offered by educational institutions in the country



Data on the length of training were reported by relatively few countries (64% of the countries that reported local training) and data on the number of graduates were reported by even fewer (only 38% of the countries that reported local training). The length of training for specific disciplines appears to vary from one country to another. For example, the length of training for community-based rehabilitation workers varied between 1 and 4 years. However this should be interpreted with caution given the small number of countries providing such information.

While professionals associated with assistive technology were reported to exist in most countries, shortages of specific disciplines closely related to assistive technology were evident in many countries. The local provision of training in such disciplines was also very limited. Clearly, the ability to track the training programmes and numbers of graduates should be enhanced in most countries to ensure a more reliable and regulated supply of professionals in fields related to assistive technology.

4.4.2 Non-specialist health workers

The involvement of non-specialized health workers (e.g. nurses and community-based rehabilitation workers) in the provision of assistive products was also assessed. In nine of the 17 participating countries, non-specialized health workers provide assistive products, mostly simple mobility products, such as crutches, walking sticks and walkers, but wheelchairs and other simple vision and hearing products are included to a lesser extent. In eight of the nine countries reporting that non-specialized assistive technology health workers provide assistive products, these health workers receive training on assistive technology. This training is part of their basic training in four countries, part of their continuing education programmes in three countries and part of both types of training in one country. In one country, non-specialized health workers who provide some assistive products do not receive any specific training.

4.4.3 Professional associations

Respondents were asked about the existence of any professional associations for those involved in assistive technology and assistive products in the country. Only five countries said they had such an association, 11 said such associations did not exist and one country did not answer. In the five countries that reported having associations, their role was not related to accreditation or quality assurance but was often limited to training and research.

4.5 Service provision

Section 5, the final section of the survey, assessed service providers, level of service delivery by the different sectors, and monitoring and evaluation of the provision of assistive technology services in the different countries.

4.5.1 Service providers

Both ministries of health (or similar) and ministries of social welfare (or similar) take the leading role in the provision of assistive technology services. Both ministries reportedly provide (or are involved in the provision of) assistive products in 15 of the 17 responding countries. Ministries of defence (or similar) are also commonly involved in the provision of such services (in nine countries), providing for their personnel in particular. Ministries of education (or similar) provide assistive technology services in six countries. In two countries, other public institutions provide assistive technology services.

In addition, 16 of the 17 countries indicated that local or international nongovernmental organizations also provided assistive products.

4.5.2 Service delivery

Health sector

The health systems of the different responding countries provide services related to assistive technology in different ways and at different levels of the system. The secondary health care level is the usual level at which assistive technology services are provided in the Region (12 of the 17 countries), followed by the tertiary care level (11 countries). Primary health care facilities provide assistive products in six countries only. In five countries, assistive technology services are available at all three levels of the health care system.

When asked whether assistive technology services at secondary and tertiary health care levels were integrated or specialized (i.e. part of a wider health care unit or their own stand-alone unit), most countries reported that these services were integrated, usually within specialist and rehabilitation services. Two countries indicated that assistive technology services were a stand-alone unit at the secondary care level, and five indicated services were stand-alone at the tertiary care level.

To ensure better access to assistive technology services, a formal referral mechanism across the different levels of the health system where these services are provided is important. While most countries reported the existence of a referral system, five countries had no such system.

Social welfare and other sectors

Social welfare is involved in delivery of assistive technology services in 15 countries. These services are mostly provided at the national level (in 12 countries). Nevertheless, they are also available at the community level in nine countries and at the provincial/district level in eight countries.

In seven countries the education sector is involved in delivery of assistive technology services. These services are available at the national level in all seven countries, while five reported their availability at the community level and four at the province/district level as well as at the national level.

In addition, in 10 countries delivery of assistive technology services is provided through other bodies, such as nongovernmental organizations, charities, community-based rehabilitation programmes, municipalities and other ministries, such as the sports ministry. In five countries, the services provided by these bodies are available at the community level, at the province/district level in five countries and at the national level in four.

Six countries have a formal referral mechanism between the different sectors (health and others) that provide assistive products. Nine countries do not have such a referral system and two did not respond.

4.5.3 Monitoring and regulation of services

Most countries lack a system to monitor and regulate the provision of assistive technology services based on three indicators: monitoring and evaluation strategy, written service standards and a documented protocol for the provision of assistive technology products and services.

Only five of the 17 countries have a monitoring and evaluation strategy for provision of assistive technology. In these five countries, agencies responsible for monitoring and evaluation are mostly committees concerned with disability and rehabilitation, with the involvement of the ministries of health and welfare. Similarly, only six countries have written service standards for the provision of assistive products. In five of these six countries, persons with disabilities and user groups are consulted in developing service standards. Finally, only eight have a written protocol for the provision of assistive technology services available.

These findings indicate a need to prioritize the establishment of monitoring systems and regulation for the provision of assistive technology services in countries of the Region.

5 Conclusion

This survey is the first step in a process aimed at acting on resolution EM/RC63/R.3 to improve access to assistive technology. It was a rapid assessment of the current status of assistive technology provision in the WHO Eastern Mediterranean Region. Data were collected from 17 countries, representing almost 80% (521 480 000/656 192 000) of the population of the Region (13).

Assistive technology is needed by many different types of people including those with chronic health conditions and disabilities, elderly people, and the broader population who may experience temporary or life-long impairment or functional decline across the life course. However, the need for assistive technology and the types of product required are not fully known in the Region, mostly because of the inadequacy of data in most countries.

Therefore, this rapid assessment provides baseline information about the current status of assistive product provision in the Region. This information can be the basis for further more detailed assessment to inform planning and development of assistive technology services in countries of the Region. Gaps in specific data and non-responses, especially on products and personnel, were found in most countries. This may indicate a lack of awareness of assistive technology and political commitment to providing assistive technology services.

The main findings of the report are summarized in Table 10.



Table 10 Summary of the results

Section	Key findings
Policy and financing	<ul style="list-style-type: none">• A body to deal with assistive technology exists in 10 countries, with the ministry of social welfare and/or a national disability council taking the leading role• Governments allocate a specific budget for the provision of assistive products in 10 countries• Consistent policies and financing for assistive technology are lacking• Only six countries include assistive products in the national health insurance scheme• Imports of assistive products are exempt from tax in most countries

Section	Key findings
Information and research	<ul style="list-style-type: none"> • About half of the countries do not have a national information system on assistive technology • More than half of the countries carry out research on assistive technology, most of which is done by government-led agencies • Provision of assistive technology services is the most common area of research, followed by assistive products, needs, policy and financing, and personnel • The key funding agencies of this research are usually national
Products	<ul style="list-style-type: none"> • The availability and cost of assistive products on the market vary widely, depending on the type and group of the products • Mobility products are the most available products while communication and cognition products are the least available compared with the other groups • The cost of assistive products ranges from very low (< US\$ 10) to very high (> US\$ 10 000) for the mobility and vision groups, with US\$ 10 to US\$ 1000 being considered an average cost • The cost of assistive products varies for purchase price, transportation, maintenance and training • In more than half of the countries, regulations or standards exist that assistive products need to comply with before being allowed on the market • Only three of the 17 countries have a price regulatory system for assistive products • The role played by nongovernmental organizations and the public sector in covering the running costs of assistive products varies widely depending on the type of product, whereas the role of the private sector is more consistent across all types of product
Personnel	<ul style="list-style-type: none"> • Most professionals working with assistive technology exist in more than half of the countries except for orthotists, wheelchair technicians and assistive technology practitioners • Orthopaedists, ear, nose and throat specialists, neurologists, and psychiatrists are available in all 17 countries. Physiotherapy is the most common discipline offered locally, followed by orthopaedics and psychology • The least reported professional training offered locally is for orthotists, assistive technology practitioners and wheelchair technicians • The ability to track training programmes and numbers of graduates is weak in most countries • In nine countries, non-specialized health workers (e.g. nurses and community-based rehabilitation workers) are involved in the provision of assistive products, and they receive relevant training locally to enable them to do this work in eight of these countries • Only five countries have professional associations for those involved in assistive technology and assistive products in the country
Service provision	<ul style="list-style-type: none"> • Both health and social welfare ministries have a leading role in the provision of assistive technology services • When provided by the health ministry, assistive technology services are usually provided through the secondary and tertiary health care levels • When provided by the welfare ministry, assistive technology services are mostly provided at the national level, but also at the community level and the province/district level • In 16 countries, assistive products are also provided by local or international nongovernmental organizations • Most countries lack a system for monitoring and regulation of the delivery of assistive technology services

The main conclusion that can be drawn from the findings is that policies, services and delivery systems for assistive technology are inadequate in most countries of the Region. This finding has implications for the equality and universality of the provision of assistive technology. Despite the heterogeneous character of the countries of the Region, with different income levels, stages of development and emergency situations, the findings indicate that the Region faces common challenges in providing assistive technology and a wide-ranging approach is needed to address the assistive technology needs of the population. The following conclusions can be drawn from the results of the assessment.

- The lack of national strategies or plans on assistive technology and the fact that those that exist are often under the umbrella of disability or social welfare may limit coverage to other users and confine provision to traditional disability-specific sectors.
- Because assistive products are not generally included in the national health insurance scheme, people in need of these products have to pay for them themselves, and the costs may be very high, or have to rely on nongovernmental sources that may not be regulated or reliable.
- The general lack of government information systems on assistive technology and research on assistive technology means that governments may not be able to monitor coverage and identify gaps in the delivery of assistive technology services and this would hinder proper planning to improve access.
- Weak systems for registration, approval and pricing of assistive products and lack of associations or networks of assistive technology producers may prevent improved coverage and supply of services and cause duplication and unproductive competition.
- Lack of reliable information on the availability and affordability of individual assistive products for most of the indicators used in the survey suggests a market failure, including weak market assessment, and poor supply chain and maintenance capacity. The more favourable responses on mobility products compared with other groups may also suggest that more attention is paid to users with mobility impairments at the expense of others.
- The inadequate involvement of the public sector in providing for the running costs of assistive products and the more prominent role of nongovernmental organizations and the private sector in the provision of certain groups of products may indicate a higher financial burden on users and an unreliable supply of products and/or services.
- Local manufacturers supply only a small proportion of assistive products in the Region, and there are no plans or vision to increase their share, which would reduce the costs associated with the procurement, transportation and maintenance of the imported products.
- Given the shortage of certain types of specialist personnel for assistive technology, scaling up training for non-specialist health workers to deliver some assistive technology, such as nurses and community-based rehabilitation workers, could help improve the situation. The limited number of educational institutions offering degree or diploma courses for training in assistive technology disciplines is also a common problem.
- In view of the weak coordination and/or referral between the health sector and other sectors on delivery of assistive technology services and the lack of systems for monitoring and regulating delivery of services, the establishment of such systems needs to be prioritized urgently in countries of the Region.

- In countries where conducting a thorough needs assessment is difficult or too costly, the starting point could be a sample survey for assessing a national service delivery system.

5.1 Recommendations

Given the main findings and conclusions of this rapid assessment and the recommended actions in the Regional Committee's resolution EM/RC63/R.3, the following recommendations are suggested.

1. Countries should be supported to implement the Regional Committee's resolution EM/RC63/R.3 to improve access to assistive technology, particularly with regard to:
 - a. developing an evidence-based policy to improve access to assistive technology within the health service systems;
 - b. conducting a more in-depth needs assessment;
 - c. developing a national priority assistive products list with minimum quality and safety standards;
 - d. including provision of priority assistive products within universal health coverage or similar initiatives;
 - e. ensuring that provision of priority assistive products is included in all stages of emergency preparedness and response planning; and
 - f. training adequate human resources for the provision of assistive products at all levels of health service delivery, including emergency response.
2. Technical support can be obtained from international experts in this field and recognized resources (e.g. relevant guidelines). At the same time, improving regional networking and exchange of experiences and resources could support countries' efforts to strengthen/develop assistive technology services. Establishing a regional centre for research, education and innovation on assistive technology could provide a useful forum for this endeavour.
3. Detailed analysis of the data collected in this rapid assessment should be undertaken to provide a better understanding of the gaps identified and the priority interventions needed and to be a more useful foundation for planning the next steps, both regionally and at the country level.
4. This assessment could lay the foundation for more in-depth future studies in individual countries as a first step for the development of a national assistive technology policy and programme.
5. Based on the challenges identified, a regional framework that addresses the different areas of assistive technology should be developed to tackle the common and specific issues the countries face. This framework could help countries develop national roadmaps to deal with access to assistive technology services and products for people in need.

References

1. Global priority research agenda for improving access to high-quality affordable assistive technology. Geneva: World Health Organization; 2017 (Licence: CC BY-NC-SA 3.0 IGO) (<http://apps.who.int/medicinedocs/documents/s23346en/s23346en.pdf>, accessed 19 March 2019).
2. Priority assistive products list: improving access to assistive technology for everyone everywhere. Geneva: World Health Organization; 2016 (<http://apps.who.int/medicinedocs/documents/s22396en/s22396en.pdf>, accessed 19 March 2019).
3. Improving access to assistive technology. Technical paper. Cairo: World Health Organization, Regional Office for the Eastern Mediterranean; 2016 (http://applications.emro.who.int/docs/RC_technical_papers_2016_4_19025_EN.pdf?ua=1, accessed 19 March 2019).
4. A/RES/61/106: Convention on the Rights of Persons with Disabilities. New York: UN General Assembly, 24 January 2007 (https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_61_106.pdf, accessed 23 January 2019).
5. World report on disability. Geneva: World Health Organization; 2011 (https://www.who.int/disabilities/world_report/2011/en/, accessed 19 March 2019).
6. WHO global disability action plan 2014–2021: better health for all people with disability. Geneva: World Health Organization; 2015 (https://apps.who.int/iris/bitstream/handle/10665/199544/9789241509619_eng.pdf?sequence=1, accessed 19 March 2019).
7. Assistive technology. Fact sheet. Geneva: World Health Organization; 2018 (www.who.int/mediacentre/factsheets/assistive-technology, accessed 24 January 2019).
8. Guidelines on the provision of manual wheelchairs in less-resourced settings. Geneva: World Health Organization; 2008 ([https://www.who.int/disabilities/publications/technology/English%20Wheelchair%20Guidelines%20\(EN%20for%20the%20web\).pdf?ua=1](https://www.who.int/disabilities/publications/technology/English%20Wheelchair%20Guidelines%20(EN%20for%20the%20web).pdf?ua=1), accessed 23 August 2018).
9. Deafness and hearing loss. Fact sheet. Geneva: World Health Organization; 2017 (www.who.int/mediacentre/factsheets/fs300, accessed 23 February 2018).
10. WHA71 Report by the Director General on improving access to assistive technology. Geneva: World Health Organization; 2018 (http://apps.who.int/gb/ebwha/pdf_files/WHA71/A71_21-en.pdf, accessed on 23 August 2018).
11. Global Cooperation on Assistive Technology (GATE) [website]. Geneva: World Health Organization; 2014 (<https://www.who.int/disabilities/technology/gate/en/>, accessed 19 March 2019).
12. International Day of Persons with Disabilities, 2014 [website]. New York: United Nations; 2014 (<https://www.un.org/development/desa/disabilities/international->

day-of-persons-with-disabilities-3-december/international-day-of-persons-with-disabilities-3-december-2014.html, accessed 19 March 2019).

13. World population prospects: the 2017 revision [online database]. New York: United Nations Department of Economic and Social Affairs, Population Division; 2017 (<https://population.un.org/wpp/Download/Standard/Population/>; accessed 23 April 2018).
14. Global status report on noncommunicable diseases 2014. Geneva: World Health Organization; 2014 (https://apps.who.int/iris/bitstream/handle/10665/148114/9789241564854_eng.pdf?sequence=1, accessed 19 March 2019).
15. World report on road traffic injury prevention. Geneva: World Health Organization; 2004 (<https://apps.who.int/iris/bitstream/handle/10665/42925/9241591315.pdf?sequence=1>, accessed 19 March 2019).
16. Global status report on road safety 2018. Geneva: World Health Organization; 2018.
17. WHO Health Emergencies. Countries in crisis [website]. Geneva: World Health Organization; 2019 (www.emro.who.int/eha/countries-in-crisis/index.html, accessed 27 January 2019).
18. 2016 Humanitarian needs overview, Syrian Arab Republic. Geneva: United Nations Office for the Coordination of Humanitarian Affairs; October 2016 (http://reliefweb.int/sites/reliefweb.int/files/resources/2016_hno_syrian_arab_republic.pdf, accessed 23 August 2018).
19. Causes and types of injuries encountered by Handicap International while working with internally displaced persons in Syria: A focus on the impact of explosive weapons. Lyon: Handicap International; 2014. (www.handicapinternational.be/sites/default/files/bijlagen/nieuws/hi_factsheet-syria-_21_01_2014_en.pdf, accessed 23 August 2018).
20. Global Cooperation on Assistive Technology (GATE). Assistive Technology infographic. Geneva: World Health Organization; 2018 (www.who.int/phi/implementation/assistive_technology/2206_infographic.pdf?ua=1, accessed 16 August 2018).

Annex 1. Glossary of terms

- Assistive products** Any external product (including devices, equipment, instruments or software), 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 (1).
- Assistive technology** The application of organized knowledge and skills related to assistive products, including systems and services. Assistive technology is a subset of health technology (1).
- Barriers** Factors in a person's environment that, through their absence or presence, limit functioning and create disability – for example, inaccessible physical environments, a lack of appropriate assistive technology, and negative attitudes towards disability (2).
- Caregiver** Caregivers are people who provide care and support to someone else. Caregivers may include family members, friends, neighbours, volunteers, care workers, trained personal assistants and health care professionals. The support they provide may include: helping with self-care, household tasks, mobility, social participation and meaningful activities; offering information, advice and emotional support as well as engaging in advocacy, facilitation of decision-making and peer support, and helping with advance-care planning; offering respite services; and engaging in activities to foster intrinsic capacity (3).
- Cognition products** Assistive products designed to improve or maintain the knowledge and comprehension of people with cognitive impairment. They help to focus on categorization, matching, association, reasoning, decision-making, problem-solving, memory skills, perceptual skills, word processing, word prediction, cognitive retraining or rehabilitation, among other things (4). They include, among others, products for time management/orientation, location tracking, personal digital assistants, personal emergency alarm systems, pill organizers and recorders.

Cognitive impairment

A loss or abnormality in several mental functions including attention functions, memory functions or higher-level cognitive functions. Attention functions focus on an external stimulus or internal experience for a specific period of time. Memory functions register and store information and retrieve it as needed. Higher-level cognitive functions, often called executive functions, include complex goal-directed behaviours such as decision-making, abstract thinking, making and carrying out plans, mental flexibility and deciding which behaviours are appropriate in specific circumstances (3).

Communication products

A category of assistive products designed to maintain or improve the communication abilities of individuals with impairments in receiving or expressing communication. Communication products may include electronic and non-electronic devices, for example communication boards/books/cards, alternative keyboards and communication software (adapted from 5).

Community-based rehabilitation workers

Community-based rehabilitation workers facilitate rehabilitation services at the community level. They carry out a range of activities within community-based rehabilitation programmes including identifying people with disabilities, addressing their needs, supporting family members, reducing stigma and prejudice, facilitating equal opportunities and participation, and referring to a higher health care level for relevant services (2).

Disability

According to the International Classification of Functioning, Disability and Health, disability is an umbrella term for impairments, activity limitations, and participation restrictions, denoting the negative aspects of the interaction between an individual (with a health condition) and that individual's contextual factors (environmental and personal factors) (2).

Disabled people's organizations

Organizations or assemblies established to promote the human rights of disabled people where most the members and the governing body are people with disabilities (2).

Emergency preparedness

Actions taken in anticipation of an emergency to facilitate a rapid, effective and appropriate response to the situation (based on *Inter-agency contingency planning guidelines for humanitarian assistance*, 2001) (6).

Environment and personal care products

Electronic or non-electronic products which maintain or improve the ability of persons with functional impairment to carry out personal care activities and to access their environment. This includes chairs for bath/shower/toilet and incontinence products or absorbents. Access to the environment includes physical accessibility such as ramps and grab bars as well as digital environmental controls.

Functional status

The extent to which an individual is able to perform activities that are associated with the routines of daily living (7).

Functioning	According to the International Classification of Functioning, Disability and Health, functioning is an umbrella term for body functions, body structures, activities, and participation. It denotes the positive aspects of the interaction between an individual (with a health condition) and that individual's contextual factors (environmental and personal factors) (2).
Health conditions	According to the International Classification of Functioning, Disability and Health, health conditions are an umbrella term for disease (acute or chronic), disorder, injury or trauma. A health condition may also include other circumstances such as ageing, stress, congenital anomaly, or genetic predisposition (2).
Hearing products	Any product that maintains or improves the functioning of people who are deaf or have hearing impairment to better perceive sounds in their surroundings and/or interact with their environment and other people. Hearing products include devices for listening and alerting and devices for augmentative and alternative communication. Listening devices are mainly for concentrating, amplifying and modulating sound for a person with hearing problems, for example hearing aids and loops. Alerting or alarm devices use sound, light, vibrations, or a combination of these techniques to let someone know when a particular event is occurring. Hearing products can also include devices for alternative communication to improve understanding, to help people with communication disorders resulting from hearing impairment express themselves, for example video communication devices. (8,9).
Humanitarian assistance	Humanitarian assistance is aid to a stricken population that complies with the basic humanitarian principles of humanity, impartiality and neutrality. Assistance can be divided into three categories based on the degree of contact with the stricken population: 1) Direct assistance is the face-to-face distribution of goods and services; 2) Indirect assistance is at least one step removed from the population and involves such activities as transporting relief goods or relief personnel; 3) Infrastructure support involves providing general services, such as road repair, airspace management and power generation that facilitate relief, but is not necessarily visible to or solely for the benefit of the stricken population (6).
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 (2).
Intrinsic capacity	The combination of the individual's physical and mental, including psychological, capacities (3).
Mental health condition	A health condition characterized by alterations in thinking, mood, or behaviour associated with distress or interference with personal functions. Also known as mental illness, mental disorders, psychosocial disability (2).

Mobility products	Products that assist or enable people with mobility limitation or impairment in sitting, standing, walking and/or transportation within their environment. Due to the wide range and levels of mobility impairment, mobility products encompass many types of devices. Some people with a physical disability may be able to walk with the assistance of a cane, walking frame, rollator, or using therapeutic footwear. Some people may use manual or electrically-powered wheelchairs, or prosthetic or orthotic devices/products (adapted from 5).
Nongovernmental organizations	Are non-profit entities that operate independently of governments. They are usually membership-based, with non-profit entities or individuals as members exercising voting rights in relation to the policies of the nongovernmental organization, or are otherwise constituted with non-profit, public-interest goals. They are free from concerns which are primarily of a private, commercial or profit-making nature. They could include, for example, grassroots community organizations, civil society groups and networks, faith-based organizations, professional groups, disease-specific groups, and patient groups (10).
Non-specialist health care providers	General physicians, family physicians, nurses and other clinical officers working in a health centre or as part of a clinical team, commonly within a primary health care setting (3).
Orthosis, orthotic device or product	Externally applied device used to modify the structural and functional characteristics of the neuromuscular and skeletal systems (11).
People-centred services/care	An approach to care in which the perspectives of individuals, caregivers, families and communities are consciously adopted so that people are participants in and beneficiaries of trusted health systems that respond to their needs and preferences in humane, holistic ways. People-centred care also requires that people have the education and support they require to make decisions and participate in their own care. It is organized around the health needs and expectations of people rather than diseases (11).
Prevalence	All the new and old cases of an event, disease, or disability in a given population and time (2).
Primary care	Often used interchangeably with first level of care. (i) the part of a health services system that assures person focused care over time to a defined population, accessibility to facilitate receipt of care when it is first needed, comprehensiveness of care in the sense that only rare or unusual manifestations of ill health are referred elsewhere, and coordination of care such that all facets of care (wherever received) are integrated. Quality features of primary care include effectiveness, safety, people-centredness, comprehensiveness, continuity and integration. (ii) the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community (12).

Priority assistive products	Are those products that are highly needed, an absolute necessity to maintain or improve an individual's functioning and which need to be available at a price the community/state can afford (1).
Prosthesis, prosthetic device or product	Externally applied device used to replace wholly or partly an absent or deficient limb segment (11).
Referral	The direction of people to an appropriate facility, institution or specialist in a health system, such as a health centre or a hospital, when health workers at a given level cannot diagnose or treat certain individuals by themselves, or face health or social problems they cannot solve by themselves (7).
Rehabilitation	A set of measures that assists individuals who experience or are likely to experience disability to achieve and maintain optimal functioning in interaction with their environment (2).
Secondary care	Specialist care provided on an ambulatory or inpatient basis, usually following a referral from primary care (7).
Tertiary care	The provision of highly specialized services in ambulatory and hospital settings, usually following a referral from primary or secondary care (7).
Universal health coverage	Universal health coverage is defined as "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" (11).
Vision products	Electronic and non-electronic devices that maintain or improve the functioning of people with visual impairment or blindness. It includes aids or systems to access, enhance, interpret, record and retrieve visual and print information. Examples include digital and optical magnifiers, braille writing equipment, braille displays, spectacles, white canes and screen readers for computers (software) (4).
Visual impairment	A loss or abnormality in sensory functions relating to the perception of the presence of light, or to sensing the form, size, shape or colour of the visual stimuli (3).
Vulnerability	Vulnerability refers to the degree to which individuals, communities and systems are susceptible to or have diminished capacity to cope with exposure to risk factors (13).

Sources

1. Priority assistive products list. Geneva: World Health Organization; 2016 (https://apps.who.int/iris/bitstream/handle/10665/207694/WHO_EMP_PHI_2016.01_eng.pdf?sequence=1, accessed 19 March 2019).
2. World report on disability. Geneva: World Health Organization; 2011 (https://www.who.int/disabilities/world_report/2011/report.pdf?ua=1, accessed 19 March 2019).
3. Integrated care for older people: guidelines on community-level interventions to manage declines in intrinsic capacity. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO (<http://apps.who.int/iris/bitstream/handle/10665/258981/9789241550109-eng.pdf?sequence=1>, accessed 19 March 2019).
4. Definitions and categories of AT [website]. Assistive Technology Guide; 2019 (<http://www.assistivetechologyguide.co.uk/guides/definitions-and-categories-of-at/>, accessed 19 March 2019).
5. Assistive technology glossary. Washington, DC: Center on Technology and Disability; 2017 (https://www.ctdinstitute.org/sites/default/files/file_attachments/CTD-ATglossary-v3.pdf, accessed 19 March 2019).
6. Humanitarian health action. Definitions: emergencies [website]. Geneva: World Health Organization; 2019 (<http://www.who.int/hac/about/definitions/en/>, accessed 19 March 2019).
7. A glossary of terms for community health care and services for older persons. Geneva: World Health Organization; 2004 (<https://apps.who.int/iris/handle/10665/68896>, accessed 19 March 2019).
8. Assistive products for persons with disability -- Classification and terminology. ISO 9999:2016. Geneva: International Organization for Standardization; 2016. (<https://www.iso.org/standard/60547.html>, accessed 7 July 2019).
9. Assistive devices for people with hearing, voice, speech, or language disorders [website]. Bethesda, MD: National Institute on Deafness and Other Communication Disorders; 2011 (<https://www.nidcd.nih.gov/health/assistive-devices-people-hearing-voice-speech-or-language-disorders>, accessed 7 July 2019).
10. Handbook for non-state actors on engagement with the World Health Organization. Geneva: World Health Organization; 2018. Licence CC BY-NC-SA 3.0 IGO (<https://www.who.int/about/collaborations/non-state-actors/Handbook-for-non-State-actors-on-engagement-with-WHO.pdf?ua=1>, accessed 19 March 2019).
11. Standards for prosthetics and orthotics. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO (https://www.who.int/phi/implementation/assistive_technology/prosthetics_orthotics/en/, accessed 19 March 2019).
12. Health systems. Health systems strengthening glossary. Geneva: World Health Organization; 2019 (www.who.int/healthsystems/hss_glossary/en/index8.html#8, accessed 19 March 2019).
13. Gender mainstreaming for health managers: a practical approach. Geneva: World Health Organization; 2011 (https://apps.who.int/iris/bitstream/handle/10665/44516/9789241501064_eng.pdf?sequence=2, accessed 19 March 2019).

Annex 2. Survey tool

Rapid assessment of assistive technology needs in countries of the WHO Eastern Mediterranean Region

Purpose

The purpose of this tool is to allow rapid assessment of the provision of assistive technology in countries of the Region in light of the WHO's newly adopted Priority Assistive Products List.¹ The tool collects baseline information about the system for the provision of assistive products in a country. This information could be used for the planning and development of related services in the country. A more detailed assessment can be undertaken at a later stage if a country decides it needs more in-depth data.

Instructions

The tool relates specifically to the products on the Priority Assistive Products List. There are six categories of assistive products: for mobility, vision, hearing, the environment and personal care, communication, and cognition. At this stage, the tool looks at only the 25 most important products on the list. However, the tool can be adapted to include other products, depending on the population and the context, if a country decides to widen the scope of the assessment at a later stage.

The assessment tool has five sections.

- Section 1 – Policy and financing
- Section 2 – Information and research
- Section 3 – Products, including availability and affordability
- Section 4 – Personnel
- Section 5 – Service provision

All questions were formulated in a yes/no or multiple-choice format to facilitate administration of the tool and analysis of the results. The respondent can add further detail on any part on a separate sheet of paper to be attached to the tool.

¹ Priority assistive products list. Geneva: World Health Organization; 2016 (www.who.int/phi/implementation/assistive_technology/EMP_PHI_2016.01).

Section 1. Policy and financing

1.1	Is there a national body (committee/ commission/council) responsible for assistive technology? If "Yes", who leads this body?	<input type="checkbox"/> Yes. Lead body: <input type="checkbox"/> No
1.2	Are organizations for disabled people or other user groups for assistive products represented on the national body?	<input type="checkbox"/> Yes. <input type="checkbox"/> No
1.3	Is there national or subnational strategy, plan or programme on an assistive technology? ¹	<input type="checkbox"/> Yes. Please specify: Please, provide a copy of the relevant documentation, if any. <input type="checkbox"/> No
1.4	Does the government allocate a specific budget for the provision of assistive products? If possible, what is that budget?	<input type="checkbox"/> Yes, at the central government level Latest budget in US\$ (and for which year): <input type="checkbox"/> Yes, at the provincial/district/local government level <input type="checkbox"/> No
1.5	What government financing schemes exist for assistive products? (More than one option can be selected.)	<input type="checkbox"/> Assistive products are included in national health insurance <input type="checkbox"/> Assistive products are provided free of charge (or at subsidized cost): <ul style="list-style-type: none"> <input type="checkbox"/> At facilities with a medical prescription <input type="checkbox"/> At other outlets such as social welfare and nongovernmental organizations. <input type="checkbox"/> Vouchers or cash are provided for assistive products after a needs assessment. <input type="checkbox"/> Other. Please specify: <input type="checkbox"/> None
1.6	Are imports of assistive products exempt from tax?	<input type="checkbox"/> Yes <input type="checkbox"/> No

¹ Record only officially adopted/endorsed strategies or plans. For other strategies or plans, such as those developed by national nongovernmental organizations or international organizations, please use a separate sheet of paper.

Section 2. Information and research

2.1	<p>Does the government have an information system on assistive technology?</p> <p>If "Yes", what kind of data are collected?</p>	<p><input type="checkbox"/> Yes, at the central government level</p> <p><input type="checkbox"/> Yes, at the provincial/district/local government level</p> <p style="padding-left: 40px;">Data are collected on:</p> <p style="padding-left: 80px;"><input type="checkbox"/> Registry of assistive products</p> <p style="padding-left: 80px;"><input type="checkbox"/> Number of products provided</p> <p style="padding-left: 80px;"><input type="checkbox"/> Number of users</p> <p style="padding-left: 80px;"><input type="checkbox"/> Other. Please specify:</p> <p><input type="checkbox"/> No</p>
2.2	<p>Are there any agencies or institutes conducting research on assistive technology?</p> <p>If "Yes", which one(s)?</p>	<p><input type="checkbox"/> Yes</p> <p style="padding-left: 40px;"><input type="checkbox"/> Government-led agencies.</p> <p style="padding-left: 40px;"><input type="checkbox"/> Non-government-led agencies.</p> <p><input type="checkbox"/> No</p>
2.3	<p>What are the key areas of research in assistive technology?</p>	<p><input type="checkbox"/> Products</p> <p><input type="checkbox"/> Needs</p> <p><input type="checkbox"/> Policy and financing</p> <p><input type="checkbox"/> Personnel</p> <p><input type="checkbox"/> Provision of service</p> <p><input type="checkbox"/> Other. Please specify:</p>
2.4	<p>What are the key funding agencies of research on assistive technology?</p>	<p><input type="checkbox"/> National</p> <p><input type="checkbox"/> Other. Please specify:</p>

Section 3. Products

A. Introductory questions

3.1	Are there regulations or standards that assistive products need to comply with before being allowed on the market?	<input type="checkbox"/> Yes <input type="checkbox"/> No
3.2	Do assistive products need to be registered with a government authority or similar before being allowed on the market? If "Yes", what authority?	<input type="checkbox"/> Yes. Authority: <input type="checkbox"/> No
3.3	Is there a price regulatory system for assistive products? If "Yes", please describe the system	<input type="checkbox"/> Yes. Description: <input type="checkbox"/> No
3.4	Are there associations or networks of producers of assistive products in the country? If "Yes", what roles do they play?	<input type="checkbox"/> Yes. Roles: <input type="checkbox"/> No

B. Availability: Market assessment and considerations for the supply chain and maintenance capacity

Product	3.5 Is the assistive product available on the national list of approved medical devices (does it have regulatory approval)?			3.6 Are there generic technical specifications available for procurement of the assistive product?			3.7 Who are the current suppliers for the assistive product? (Choose more than one if applicable)				3.8 Are there supplies and services (e.g. consumables, spare parts, maintenance) available to maintain continued functionality of the assistive product?				
	Yes	No	Not applicable	Yes	No	Don't know	Local manufacturer	International manufacturer, with local distributor or authorized representative	International manufacturer, with regional representative	International manufacturer, with no distributor or authorized representative	Yes	No	Not applicable	Don't know	
<i>Mobility</i>															
Canes/walking sticks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tripod/quadripod walking sticks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crutches, axillary/elbow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rollators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Walking frames/walkers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wheelchairs, manual for active use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pressure relief cushions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clubfoot braces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Orthoses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

B. Availability: Market assessment and considerations for the supply chain and maintenance capacity

Product	3.5 Is the assistive product available on the national list of approved medical devices (does it have regulatory approval)?			3.6 Are there generic technical specifications available for procurement of the assistive product?			3.7 Who are the current suppliers for the assistive product? (Choose more than one if applicable)				3.8 Are there supplies and services (e.g. consumables, spare parts, maintenance) available to maintain continued functionality of the assistive product?			
	Yes	No	Not applicable	Yes	No	Don't know	Local manufacturer	International manufacturer with local distributor or authorized representative	International manufacturer with regional representative	International manufacturer with no distributor or authorized representative	Yes	No	Not applicable	Don't know
	Watches, talking/ touching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
White canes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hearing														
Alarm signallers with light/ sound/vibration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hearing aids (digital and batteries)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environment and personal care														
Portable ramps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Incontinence products (absorbent)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chairs for shower/toilet/ bath	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Communication														

C1. Affordability and economic evaluation

Product	3.9 Cost of the assistive product in the market					3.10 Cost of transportation of the assistive product			3.11 Cost of maintenance of the assistive product			3.12 Cost of training to use/handle the assistive product				
	Very low cost (less than US\$ 10)	Low cost (US\$ 10–100)	Average cost (US\$ 100–1000)	High cost (US\$ 1000–10 000)	Very high cost (US\$ more than 10 000)	Low (less than 3% of product cost)	Average (3–5% of product cost)	High (more than 5% of product cost)	Low (less than 1% of product cost)	Average (1–3% of product cost)	High (more than 3% of product cost)	No cost/ no need for training	Low	High, conducted only once	High, continuous	
<i>Mobility</i>																
Canes/walking sticks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tripod/quadrupod walking sticks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crutches, axillary/elbow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rollators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Walking frames/walkers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wheelchairs, manual for active use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pressure relief cushions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clubfoot braces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Orthoses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prostheses, lower limb	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Therapeutic footwear: neuropathic/diabetic/orthopaedic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Vision</i>																
Audio players (DAISY capability)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C1. Affordability and economic evaluation

Product	3.9 Cost of the assistive product in the market					3.10 Cost of transportation of the assistive product			3.11 Cost of maintenance of the assistive product			3.12 Cost of training to use/handle the assistive product			
	Very low cost (less than US\$ 10)	Low cost (US\$ 10–100)	Average cost (US\$ 100–1000)	High cost (US\$ 1000–10 000)	Very high cost (US\$ more than 10 000)	Low (less than 3% of product cost)	Average (3–5% of product cost)	High (more than 5% of product cost)	Low (less than 1% of product cost)	Average (1–3% of product cost)	High (more than 3% of product cost)	No cost/no need for training	Low	High, conducted only once	High, continuous
Braille writing equipment/braille	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spectacles, low vision, short distance, filters, and protection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Magnifiers, optical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Watches, talking/touching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
White canes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Hearing</i>															
Alarm signalers with light/sound/vibration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hearing aids, digital and batteries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Environment and personal care</i>															
Portable ramps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Incontinence products, absorbent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chairs for shower/toilet/bath	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C1. Affordability and economic evaluation

Product	3.9 Cost of the assistive product in the market					3.10 Cost of transportation of the assistive product			3.11 Cost of maintenance of the assistive product			3.12 Cost of training to use/handle the assistive product			
	Very low cost (less than US\$ 10)	Low cost (US\$ 10–100)	Average cost (US\$ 100–1000)	High cost (US\$ 1000–10 000)	Very high cost (US\$ more than 10 000)	Low (less than 3% of product cost)	Average (3–5% of product cost)	High (more than 5% of product cost)	Low (less than 1% of product cost)	Average (1–3% of product cost)	High (more than 3% of product cost)	No cost/no need for training	Low	High, conducted only once	High, continuous
<i>Communication</i>															
Communication boards, books and cards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Cognition</i>															
Pill organizers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Time management products (e.g. whiteboards, memory calendars)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C2. Affordability and economic evaluation

Product	3.13 The assistive product is usually procured using a bulk procurement contract		3.14 When would the assistive product be replaced (after how many years)				3.15 Body responsible for running costs of the assistive product				3.16 If the assistive product is imported, can it be produced locally at a lower cost?		
	Yes	No	More than 7	3-7	1-3	Less than 1	Donor/ NGO	Public sector	Private sector	Other	Yes/already produced locally	No	Don't know
Mobility													
Canes/walking sticks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tripod/quadrupod walking sticks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crutches, axillary/ elbow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rollators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Walking frames/ walkers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wheelchairs, manual for active use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pressure relief cushions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clubfoot braces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Orthoses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prostheses, lower limb	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Therapeutic footwear: neuropathic/ diabetic/orthopaedic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vision													
Audio players (DAISY capability)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Braille writing equipment/brailers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C2. Affordability and economic evaluation

Product	3.13 The assistive product is usually procured using a bulk procurement contract		3.14 When would the assistive product be replaced (after how many years)				3.15 Body responsible for running costs of the assistive product				3.16 If the assistive product is imported, can it be produced locally at a lower cost?		
	Yes	No	More than 7	3-7	1-3	Less than 1	Donor/ NGO	Public sector	Private sector	Other	Yes/already produced locally	No	Don't know
Spectacles, low vision, short distance, filters, and protection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Magnifiers, optical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Watches, talking/ touching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
White canes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hearing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alarm signallers with light/sound/vibration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hearing aids digital and batteries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Environment and personal care</i>													
Portable ramps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Incontinence products, absorbent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chairs for shower/ toilet/bath	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Communication</i>													
Communication boards, books and cards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Cognition</i>													
Pill organizers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C2. Affordability and economic evaluation

Product	3.13 The assistive product is usually procured using a bulk procurement contract		3.14 When would the assistive product be replaced (after how many years)					3.15 Body responsible for running costs of the assistive product				3.16 If the assistive product is imported, can it be produced locally at a lower cost?		
	Yes	No	More than 7	3-7	1-3	Less than 1	Donor/ NGO	Public sector	Private sector	Other	Yes/already produced locally	No	Don't know	
Time management products (e.g. whiteboards, memory calendars)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

NGO: nongovernmental organization.

Section 4. Personnel

A. Specialists and training

Assistive technology-related workforce	4.1 Existence of speciality in the country			4.2 Are there educational institutions offering degrees or diploma courses in the following specialities?		4.3 If "Yes", minimum length of the programme	4.4 Number of people graduating each year
	Yes, at the national level	Yes, at subnational levels	No	Yes	No		
Rehabilitation doctors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Orthopaedic doctors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Prosthetists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Orthotists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Prosthetic and orthotic technicians	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Wheelchair technicians	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Physiotherapists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Occupational therapists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Ophthalmologists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Opticians	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Braille teachers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Mobility orientation trainers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Ear, nose and throat specialists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Audiologists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Hearing aid technicians	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Speech and language therapists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Audiometric technicians	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Geriatrists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Neurologists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Psychiatrists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Psychologists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Special education teachers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Biomedical engineers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Community-based rehabilitation workers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Assistive technology practitioners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Other (please specify):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

B. Non-specialist health workers and professional associations

4.5	Do health workers who are not specialized in assistive technology (e.g. nurses, Community-based rehabilitation workers) provide any assistive products? If "Yes", please specify which products.	<input type="checkbox"/> Yes. Which products? <input type="checkbox"/> No
4.6	If "Yes", do they receive training on assistive technology?	<input type="checkbox"/> Yes, as part of their basic training <input type="checkbox"/> Yes, as part of continuing education <input type="checkbox"/> No
4.7	Are there any professional associations for those working in assistive technology/products in the country? If "Yes", what roles do they play in recognizing and certifying expertise/specialists mentioned in the previous list under: A. Professionals and training?	<input type="checkbox"/> Yes. Please specify the roles: <input type="checkbox"/> No

Section 5. Service provision

5.1 Service providers

5.1.1	Which ministries provide (or are involved in providing assistive products in the country? (More than one option can be selected.)	<input type="checkbox"/> Ministry of Health (or similar) <input type="checkbox"/> Ministry of Welfare (or similar) <input type="checkbox"/> Ministry of Education (or similar) <input type="checkbox"/> Ministry of Defence (or similar) <input type="checkbox"/> Other. Please specify:
5.1.2	Do nongovernmental organizations or international organizations also provide assistive products in the country?	<input type="checkbox"/> Yes <input type="checkbox"/> No

5.2 Service delivery

	<i>Health care</i>	
5.2.1	Do health care facilities provide assistive products at the primary health care level?	<input type="checkbox"/> Yes <input type="checkbox"/> No
5.2.2	Are assistive technology services available at the secondary health care level?	<input type="checkbox"/> Yes <input type="checkbox"/> No
5.2.3	Are the assistive technology services at secondary health care level integrated or specialized? (i.e. part of a wider health care unit or stand-alone)	<input type="checkbox"/> Integrated. Within which services: <input type="checkbox"/> Stand-alone
5.2.4	Are assistive technology services available at the tertiary health care level?	<input type="checkbox"/> Yes <input type="checkbox"/> No
5.2.5	Are the assistive technology services at tertiary health care level integrated or specialized?	<input type="checkbox"/> Integrated. Within which services: <input type="checkbox"/> Stand-alone
5.2.6	Is there a formal referral mechanism for assistive technology services across the different levels of the health system?	<input type="checkbox"/> Yes <input type="checkbox"/> No

	<i>Social welfare or other</i>	
5.2.7	Who else, other than health care, provides assistive products and at which level? (More than one option can be selected.)	<input type="checkbox"/> Social welfare services <input type="checkbox"/> At the community level <input type="checkbox"/> At the province/district level <input type="checkbox"/> At the national level <input type="checkbox"/> Educational services <input type="checkbox"/> At the community level <input type="checkbox"/> At the province/district level <input type="checkbox"/> At the national level <input type="checkbox"/> Other services. Please specify <input type="checkbox"/> At the community level <input type="checkbox"/> At the province/district level <input type="checkbox"/> At the national level <input type="checkbox"/> None
5.2.8	Is there a formal referral mechanism between the different services (health and others) that provide assistive products?	<input type="checkbox"/> Yes <input type="checkbox"/> No

5.3 Monitoring and regulations

5.3.1	Is there a monitoring and evaluation strategy on the provision of assistive technology in the country? If "Yes", which agencies are responsible for monitoring and evaluation?	<input type="checkbox"/> Yes. Agencies: <input type="checkbox"/> No
5.3.2	Are there written service standards for the provision of assistive products?	<input type="checkbox"/> Yes <input type="checkbox"/> No
5.3.3	Are people with disabilities and user groups consulted during the development of service standards?	<input type="checkbox"/> Yes <input type="checkbox"/> No
5.3.4	Is there a documented protocol for the provision of assistive technology services?	<input type="checkbox"/> Yes <input type="checkbox"/> No

Annex 3. Results for individual assistive products

The tables below show the number of countries (total 17) providing responses to the survey questions for individual products.

Is the assistive product available on the national list of approved medical devices (does it have previous regulatory market approval)?

Product	No. of countries		
	Yes	No	Not applicable/ No response ^a
Mobility			
Canes/walking sticks	10	4	3
Tripod/quadripod walking sticks	9	4	4
Crutches, axillary/elbow	10	4	3
Rollators	8	5	4
Walking frames/walkers	8	5	4
Wheelchairs, manual for active use	10	3	4
Pressure relief cushions	8	5	4
Club foot braces	7	6	4
Orthoses	8	6	3
Prostheses, lower limb	8	5	4
Therapeutic footwear: neuropathic/diabetic/orthopaedic	9	3	5
Vision			
Audio players (DAISY capability)	6	8	3
Braille writing equipment/braille	5	7	5
Spectacles, low vision, short distance, filters and protection	10	4	3
Magnifiers, optical	9	5	3
Watches, talking/touching	4	8	5
White canes	5	7	5
Hearing			
Alarm signalers with light/sound/vibration	3	7	7
Hearing aids digital and batteries	8	5	4

Product	No. of countries		
	Yes	No	Not applicable/ No response ^a
Environment and personal care			
Portable ramps	3	8	6
Incontinence products, absorbent	6	6	5
Chairs for shower/toilet/bath	7	6	4
<i>Communication</i>			
Communication boards, books and cards	4	9	4
Cognition			
Pill organizers	3	8	6
Time management products (e.g. whiteboards, memory calendars)	2	9	6

^aNumber of countries answering not applicable and those giving no response were combined.

Are there generic technical specifications available for procurement of the assistive product?

Product	No. of countries		
	Yes	No	Don't know/no response ^a
Mobility			
Canes/walking sticks	9	5	3
Tripod/quadrupod walking sticks	10	4	3
Crutches, axillary/elbow	9	5	3
Rollators	8	4	5
Walking frames/walkers	8	4	5
Wheelchairs, manual for active use	9	4	4
Pressure relief cushions	8	4	5
Club foot braces	7	4	6
Orthoses	7	5	5
Prostheses, lower limb	8	4	5
Therapeutic footwear: neuropathic/diabetic/orthopaedic	7	4	6
Vision			
Audio players (DAISY capability)	5	4	8
Braille writing equipment/braille	8	4	5
Spectacles, low vision, short distance, filters and protection	11	3	3

Product	No. of countries		
	Yes	No	Don't know/no response ^a
Magnifiers, optical	11	4	2
Watches, talking/touching	7	5	5
White canes	7	4	6
Hearing			
Alarm signallers with light/sound/vibration	6	7	4
Hearing aids digital and batteries	10	4	3
Environment and personal care			
Portable ramps	3	7	7
Incontinence products, absorbent	6	5	6
Chairs for shower/toilet/bath	5	7	5
Communication			
Communication boards, books and cards	4	6	7
Cognition			
Pill organizers	3	7	7
Time management products (e.g. whiteboards, memory calendars)	3	7	7

^aNumber of countries answering don't know and those giving no response were combined.

Who are the current suppliers of the assistive product?

Product	No. of countries				
	Local manufacturer	International manufacturer, with a local distributor or authorized representative	International manufacturer, with a regional representative	International manufacturer, with no distributor or authorized representative	No response
Mobility					
Canes/walking sticks	6	12	3	5	0
Tripod/quadripod walking sticks	5	11	3	5	1

Product	No. of countries				
	Local manufacturer	International manufacturer, with a local distributor or authorized representative	International manufacturer, with a regional representative	International manufacturer, with no distributor or authorized representative	No response
Crutches, axillary/elbow	7	12	3	5	0
Rollators	5	11	3	3	2
Walking frames/ walkers	5	12	3	4	1
Wheelchairs, manual for active use	5	12	3	5	
Pressure relief cushions	4	10	3	5	1
Club foot braces	8	10	3	4	1
Orthoses	8	11	3	5	0
Prostheses, lower limb	9	9	3	5	1
Therapeutic footwear: neuropathic/ diabetic/ orthopaedic	9	12	3	5	0
Vision					
Audio players (DAISY capability)	1	9	4	5	4
Braille writing equipment/ brailers	1	11	5	4	4
Spectacles, low vision, short distance, filters and protection	3	13	3	5	2
Magnifiers, optical	3	13	5	6	1

Product	No. of countries				
	Local manufacturer	International manufacturer, with a local distributor or authorized representative	International manufacturer, with a regional representative	International manufacturer, with no distributor or authorized representative	No response
Watches, talking/ touching	1	9	3	6	3
White canes	4	8	3	5	3
Hearing					
Alarm signallers with light/ sound/vibration	1	8	5	5	6
Hearing aids digital and batteries	1	12	4	6	1
Environment and personal care					
Portable ramps	5	7	3	6	4
Incontinence products, absorbent	3	10	5	6	1
Chairs for shower/toilet/ bath	5	11	4	6	1
Communication					
Communication boards, books and cards	2	10	3	5	2
Cognition					
Pill organizers	1	9	2	4	3
Time management products (e.g. whiteboards, memory calendars)	3	8	2	5	3

Are supplies and services (e.g. consumables, spare parts and maintenance) necessary to maintain continued functionality of the assistive product available?

Product	No. of countries		
	Yes	No	Not applicable/ no response ^a
Mobility			
Canes/walking sticks	10	1	6
Tripod/quadripod walking sticks	10	1	6
Crutches, axillary/elbow	9	3	5
Rollators	9	2	6
Walking frames/walkers	10	1	6
Wheelchairs, manual for active use	11	3	3
Pressure relief cushions	9	2	6
Club foot braces	11	2	4
Orthoses	12	2	3
Prostheses, lower limb	11	2	4
Therapeutic footwear: neuropathic/diabetic/orthopaedic	10	2	5
Vision			
Audio players (DAISY capability)	7	3	7
Braille writing equipment/braille	7	3	7
Spectacles, low vision, short distance, filters and protection	10	2	5
Magnifiers, optical	9	2	6
Watches, talking/touching	7	3	7
White canes	6	3	8
Hearing			
Alarm signallers with light/sound/vibration	7	4	6
Hearing aids digital and batteries	10	3	4
Environment and personal care			
Portable ramps	4	4	9
Incontinence products, absorbent	5	4	8
Chairs for shower/toilet/bath	9	4	4
Communication			
Communication boards, books and cards	4	4	9
Cognition			
Pill organizers	3	5	9
Time management products (e.g. whiteboards, memory calendars)	4	5	8

^aNumber of countries answering not applicable and those giving no answer were combined.

What is the cost of the assistive product on the market? (very low cost = less than US\$ 10; low cost = US\$ 10–100; average cost = US\$ 100–1000; high cost = US\$ 1000–10 000; very high cost = more than US\$ 10 000)

Product	No. of countries					
	Very low cost	Low cost	Average cost	High cost	Very high cost	No response
Mobility						
Canes/walking sticks	5	10	2	0	0	0
Tripod/quadripod walking sticks	3	11	3	0	0	0
Crutches, axillary/elbow	2	13	2	0	0	0
Rollators	1	6	9	0	0	1
Walking frames/walkers	1	8	4	1	0	3
Wheelchairs, manual for active use	0	3	12	2	0	0
Pressure relief cushions	2	4	8	1	0	2
Club foot braces	1	6	6	1	0	3
Orthoses	1	6	6	1	2	1
Prostheses, lower limb	0	1	8	4	3	1
Therapeutic footwear: neuropathic/diabetic/orthopaedic	1	7	6	1	0	2
Vision						
Audio players (DAISY capability)	0	3	7	0	1	6
Braille writing equipment/braille	0	4	5	2	0	6
Spectacles, low vision, short distance, filters and protection	1	4	8	0	0	4
Magnifiers, optical	2	6	4	0	0	5
Watches, talking/touching	1	5	6	0	0	5
White canes	1	10	1	0	0	5
Hearing						
Alarm signallers with light/sound/vibration	1	4	5	0	0	7
Hearing aids digital and batteries	1	2	7	4	0	3
Environment and personal care						
Portable ramps	0	7	2	1	0	7
Incontinence products, absorbent	2	9	1	0	0	5
Chairs for shower/toilet/bath	1	9	6	1	0	0

Product	No. of countries					
	Very low cost	Low cost	Average cost	High cost	Very high cost	No response
Communication						
Communication boards, books and cards	1	6	4	0	0	6
Cognition						
Pill organizers	4	6	3	0	0	4
Time management products (e.g. whiteboards, memory calendars)	3	7	2	0	0	5

What is the cost of transportation of the assistive product? (low = less than 3% of the product cost; average = 3–5% of the product cost; high = more than 5% of the product cost)

Product	No. of countries			
	Low	Average	High	No response
Mobility				
Canes/walking sticks	7	2	3	5
Tripod/quadrupod walking sticks	7	2	3	5
Crutches, axillary/elbow	8	3	3	3
Rollators	8	1	3	5
Walking frames/walkers	7	3	3	4
Wheelchairs, manual for active use	6	5	3	3
Pressure relief cushions	9	2	3	3
Club foot braces	8	2	3	4
Orthoses	9	2	3	3
Prostheses, lower limb	8	2	4	3
Therapeutic footwear: neuropathic/diabetic/orthopaedic	7	3	3	4
Vision				
Audio players (DAISY capability)	7	4	0	6
Braille writing equipment/braille	6	4	0	7
Spectacles, low vision, short distance, filters and protection	6	4	1	6
Magnifiers, optical	7	3	1	6

Product	No. of countries			
	Low	Average	High	No response
Watches, talking/touching	6	5	0	6
White canes	6	3	1	7
Hearing				
Alarm signallers with light/sound/vibration	4	6	0	7
Hearing aids digital and batteries	6	4	1	6
Environment and personal care				
Portable ramps	5	3	1	8
Incontinence products, absorbent	7	2	1	7
Chairs for shower/toilet/bath	8	2	3	4
Communication				
Communication boards, books and cards	6	3	1	7
Cognition				
Pill organizers	9	3	0	5
Time management products (e.g. whiteboards, memory calendars)	6	3	1	7

What is the cost of maintenance of the assistive product? (low = less than 1% of the product cost; average = 1–3% of the product cost; high = more than 3% of the product cost)

Product	No. of countries			
	Low	Average	High	No response
Mobility				
Canes/walking sticks	9	3	1	4
Tripod/quadrupod walking sticks	7	5	1	4
Crutches, axillary/elbow	5	7	1	4
Rollators	5	6	1	5
Walking frames/walkers	4	6	2	5
Wheelchairs, manual for active use	1	6	5	5
Pressure relief cushions	5	5	2	5
Club foot braces	5	4	3	5
Orthoses	3	5	4	5
Prostheses, lower limb	3	4	6	4
Therapeutic footwear: neuropathic/diabetic/orthopaedic	4	7	2	4

Product	No. of countries			
	Low	Average	High	No response
Vision				
Audio players (DAISY capability)	2	5	2	8
Braille writing equipment/braille	3	4	1	9
Spectacles, low vision, short distance, filters and protection	2	5	3	7
Magnifiers, optical	5	4	2	6
Watches, talking/touching	2	6	3	6
White canes	4	5	1	7
Hearing				
Alarm signallers with light/sound/vibration	1	6	2	8
Hearing aids digital and batteries	1	7	3	6
Environment and personal care				
Portable ramps	5	3	1	8
Incontinence products, absorbent	4	2	1	10
Chairs for shower/toilet/bath	6	2	4	5
Communication				
Communication boards, books and cards	5	3	1	8
Cognition				
Pill organizers	8	2	0	7
Time management products (e.g. whiteboards, memory calendars)	9	1	0	7

What is the cost of training on using/handling the assistive product?

Product	No. of countries				
	No cost/ no need for training	Low	High, conducted only once	High, continuous	No response
Mobility					
Canes/walking sticks	9	2	1	1	4
Tripod/quadrupod walking sticks	8	3	1	1	4
Crutches, axillary/elbow	7	5	0	1	4
Rollators	6	4	0	2	5
Walking frames/walkers	8	3	0	1	5
Wheelchairs, manual for active use	7	5	0	1	4
Pressure relief cushions	6	6	0	0	5
Club foot braces	6	3	1	1	6
Orthoses	6	4	0	2	5

Product	No. of countries				
	No cost/ no need for training	Low	High, conducted only once	High, continuous	No response
Prostheses, lower limb	7	4	0	1	5
Therapeutic footwear: neuropathic/ diabetic/orthopaedic	8	3	0	1	5
Vision					
Audio players (DAISY capability)	2	4	3	1	7
Braille writing equipment/braille	2	4	2	1	8
Spectacles, low vision, short distance, filters and protection	7	5	0	0	5
Magnifiers, optical	7	5	0	1	4
Watches, talking/touching	4	6	1	1	5
White canes	5	4	1	1	6
Hearing					
Alarm signallers with light/sound/ vibration	3	4	2	0	8
Hearing aids digital and batteries	4	5	1	0	7
Environment and personal care					
Portable ramps	6	3	0	0	8
Incontinence products, absorbent	7	1	0	1	8
Chairs for shower/toilet/bath	10	2	1	0	4
Communication					
Communication boards, books and cards	4	4	0	1	8
Cognition					
Pill organizers	8	3	0	0	6
Time management products (e.g. whiteboards, memory calendars)	7	3	0	0	7

Is the assistive product usually procured using a bulk procurement contract?

Product	No. of countries		
	Yes	No	Not applicable/ no response ^a
Mobility			
Canes/walking sticks	10	4	3
Tripod/quadrupod walking sticks	10	4	3
Crutches, axillary/elbow	10	4	3
Rollators	9	5	3
Walking frames/walkers	9	5	3

Product	No. of countries		
	Yes	No	Not applicable/ no response ^a
Wheelchairs, manual for active use	9	6	2
Pressure relief cushions	8	7	2
Club foot braces	6	8	3
Orthoses	4	10	3
Prostheses, lower limb	4	10	3
Therapeutic footwear: neuropathic/diabetic/ orthopaedic	7	8	2
Vision			
Audio players (DAISY capability)	7	6	4
Braille writing equipment/braille	7	6	4
Spectacles, low vision, short distance, filters and protection	7	6	4
Magnifiers, optical	8	5	4
Watches, talking/touching	6	7	4
White canes	8	5	4
Hearing			
Alarm signallers with light/sound/vibration	8	5	4
Hearing aids digital and batteries	10	5	2
Environment and personal care			
Portable ramps	5	5	7
Incontinence products, absorbent	6	6	5
Chairs for shower/toilet/bath	9	4	4
Communication			
Communication boards, books and cards	6	5	6
Cognition			
Pill organizers	7	5	5
Time management products (e.g. whiteboards, memory calendars)	6	5	6

^aNumber of countries answering not applicable and those giving no answer were combined.

When would the assistive product be replaced (after how many years)?

Product	No. of countries				
	More than 7 years	3 to 7 years	1 to 3 years	Less than 1 year	No response
Mobility					
Canes/walking sticks	3	4	5	0	5
Tripod/quadripod walking sticks	3	4	5	0	5
Crutches, axillary/elbow	3	4	5	0	5
Rollators	2	5	3	0	7
Walking frames/walkers	2	4	4	0	7
Wheelchairs, manual for active use	2	5	4	0	6
Pressure relief cushions	1	4	5	1	6
Club foot braces	1	3	4	1	8
Orthoses	1	3	4	0	9
Prostheses, lower limb	2	1	6	0	8
Therapeutic footwear: neuropathic/ diabetic/orthopaedic	2	1	6	2	6
Vision					
Audio players (DAISY capability)	4	2	3	0	8
Braille writing equipment/braillers	3	1	4	0	9
Spectacles, low vision, short distance, filters and protection		4	4	1	8
Magnifiers, optical		4	4	1	8
Watches, talking/touching	2	4	3	0	8
White canes	2	4	3	1	7
Hearing					
Alarm signallers with light/sound/vibration	3	2	5	0	7
Hearing aids digital and batteries	2	2	7	0	6
Environment and personal care					
Portable ramps	5	2	3	0	7
Incontinence products, absorbent	1	1	2	6	7
Chairs for shower/toilet/bath	3	4	5	0	5
Communication					
Communication boards, books and cards	1	3	3	0	10
Cognition					
Pill organizers	1	1	3	3	9
Time management products (e.g. whiteboards, memory calendars)	1	2	4	0	10

Who is responsible for the running costs of the assistive product?

Product	No. of countries				
	Donors/ NGOs	Public sector	Private sector	Other	No response
Mobility					
Canes/walking sticks	10	9	7	5	2
Tripod/quadripod walking sticks	9	9	7	5	2
Crutches, axillary/elbow	10	9	7	5	2
Rollators	9	9	6	4	3
Walking frames/walkers	10	9	6	5	2
Wheelchairs, manual for active use	10	9	6	5	2
Pressure relief cushions	8	7	6	4	2
Club foot braces	9	10	5	4	2
Orthoses	8	11	5	4	2
Prostheses, lower limb	7	12	5	5	2
Therapeutic footwear: neuropathic/ diabetic/orthopaedic	8	9	7	5	2
Vision					
Audio players (DAISY capability)	7	4	6	1	6
Braille writing equipment/braille	7	6	5	1	5
Spectacles, low vision, short distance, filters and protection	6	4	7	3	5
Magnifiers, optical	6	4	7	3	5
Watches, talking/touching	6	6	6	2	5
White canes	7	7	6	2	3
Hearing					
Alarm signallers with light/sound/ vibration	5	7	5	1	7
Hearing aids digital and batteries	5	8	5	3	4
Environment and personal care					
Portable ramps	7	5	6	2	6
Incontinence products, absorbent	7	6	5	3	5
Chairs for shower/toilet/bath	8	6	6	3	3
Communication					
Communication boards, books and cards	6	3	4	2	7

Product	No. of countries				
	Donors/ NGOs	Public sector	Private sector	Other	No response
Cognition					
Pill organizers	4	2	5	3	7
Time management products (e.g. whiteboards, memory calendars)	3	2	4	3	8

NGO: nongovernmental organizations.

If the assistive product is imported, could it be produced locally at a lower cost?

Product	No. of countries		
	Yes/already produced locally	No	Don't know/ no response ^a
Mobility			
Canes/walking sticks	6	7	4
Tripod/quadripod walking sticks	6	7	4
Crutches, axillary/elbow	6	7	4
Rollators	3	8	6
Walking frames/walkers	4	7	6
Wheelchairs, manual for active use	4	10	3
Pressure relief cushions	4	7	6
Club foot braces	6	5	6
Orthoses	6	5	6
Prostheses, lower limb	8	5	4
Therapeutic footwear: neuropathic/diabetic/ orthopaedic	5	4	8
Vision			
Audio players (DAISY capability)	0	8	9
Braille writing equipment/braille	0	7	10
Spectacles, low vision, short distance, filters and protection	2	6	9
Magnifiers, optical	2	7	8
Watches, talking/touching	1	8	8
White canes	2	7	8

Product	No. of countries		
	Yes/already produced locally	No	Don't know/ no response ^a
Hearing			
Alarm signallers with light/sound/vibration	0	7	10
Hearing aids digital and batteries	0	10	7
Environment and personal care			
Portable ramps	5	4	8
Incontinence products, absorbent	1	6	10
Chairs for shower/toilet/bath	6	6	5
Communication			
Communication boards, books and cards	5	4	8
Cognition			
Pill organizers	2	2	13
Time management products (e.g. whiteboards, memory calendars)	3	2	12

^aNumber of countries answering don't know and those giving no answer were combined.

Annex 4. Results for assistive technology personnel and training

The table below shows the number of countries (out of 17) that answered “yes” to the questions on professionals working in assistive technology and the specialist training available in the country.

Specialist	No. of countries			
	Are there such specialists in the country?	Are degrees/ professional qualifications offered locally?	Is the minimum duration of training known?	Is the number of annual graduates known?
Rehabilitation doctors	13	8	5	4
Orthopaedic doctors	17	12	8	6
Prosthetists	10	4	3	3
Orthotists	8	2	2	2
Prosthetic and orthotic technicians	14	9	7	4
Wheelchair technicians	5	1	0	0
Physiotherapists	16	13	9	5
Occupational therapists	15	10	7	5
Ophthalmologists	16	11	8	5
Opticians	15	9	5	3
Braille teachers	13	4	1	1
Mobility orientation trainers	10	4	2	1
Ear, nose and throat specialists	17	11	7	5
Audiologists	13	6	3	2
Hearing aid technicians	13	7	4	2
Speech and language therapists	14	6	4	4

Specialist	No. of countries			
	Are there such specialists in the country?	Are degrees/ professional qualifications offered locally?	Is the minimum duration of training known?	Is the number of annual graduates known?
Audiometric technicians	13	6	3	1
Geriatrists	11	5	5	2
Neurologists	17	11	8	6
Psychiatrists	17	11	8	6
Psychologists	15	12	8	3
Special education teachers	13	10	6	1
Biomedical engineers	14	8	5	1
Community-based rehabilitation workers	14	9	4	1
Assistive technology practitioners	5	2	0	0
Other	4	3	2	1

Assistive technology plays an important role in maintaining and improving people's functioning and well-being, enabling them to lead healthy, productive, independent and dignified lives. But while nearly 100 million people in the WHO Eastern Mediterranean Region are in need of one or more assistive products, only 1 in every 10 of them have access to the products they need, and demand is growing.

This report presents the results of a rapid assessment of the situation in countries of the Region, focusing on five key areas: policy and financing, information and research, products, personnel, and service provision. It provides essential baseline information on the provision of assistive products as well as recommendations based on the findings to help countries improve access to assistive technology.



**World Health
Organization**
REGIONAL OFFICE FOR THE **Eastern Mediterranean**



9 789292 744304