Background

The global population is rapidly ageing, especially in the Asian region. As a result, enabling ageing populations to remain healthy, active, productive and autonomous for as long as possible is a priority of the World Health Organization (WHO).

Innovations in health technologies, and associated health and social delivery systems, are critical to preventing and managing functional and cognitive decline that older populations increasingly experience, as well as to reduce long-term institutionalization. Achieving this means increasing the availability, accessibility, acceptability, adaptability and affordability of quality (safe and effective) assistive devices (AD) and medical devices (MD) in line with the desired outcome of improved access to and rational use of safe, efficacious and quality medicines and health technologies (a WHO Programme Outcome, under Category 4: Health Systems, 2014-2015). A key first step is to assess the needs and contexts of older populations through an action research that establishes a baseline situation at the country level, as well as fully documents gaps for various technologies and approaches.

The survey built on an earlier WHO-commissioned systematic review on medical devices (MD) and a study on assistive devices (AD) for older populations, in addition to a consultation on this theme and the first WHO Global Forum on Innovation for Ageing Populations convened and organized by the WHO Centre for Health Development or WHO Kobe Centre (WKC) in Kobe, Japan in 2013.

Objectives

WHO, with support from the Ministry of Health, Labour and Welfare, Japan, commissioned the development of a survey instrument to assess the needs for AD and MD for older people in six countries (China, Malaysia, Japan, Philippines, Republic of Korea and Viet Nam) of the WHO Western Pacific Region. The survey had three objectives, namely to:

- Identify priority AD and MD that need to be available for older people (over 60 years of age) in the six focus countries of the survey;
- Understand the contributing factors for AD and MD availability or unavailability; and
• Identify possible approaches to improve access to high quality AD and MD at an affordable cost, especially in low-and middle-income countries.

The current effort follows and builds upon two previous systematic reviews (inclusive of a survey) commissioned by WHO in 2012-2013 on the: 1) needs for medical devices for ageing populations; and 2) needs, availability and affordability of assistive devices for older people in 8 countries in the Western Pacific Region: Australia, China, Fiji, Japan, Malaysia, Philippines, Republic of Korea and Viet Nam. It should be noted that the current survey was conducted in 6 countries only (excluding Australia and Fiji).

**Methodology**

A methodological framework was developed to guide an online survey tool containing three parts: overall demographic questions, questions regarding AD, and for MD. After completion of the demographic questions, respondents could choose to answer the AD questions only, the MD questions only, or both. ADs were classified against a consolidated group of twelve categories of functional and cognitive needs (derived from a longer list in the International Classification of Functioning, and ISO 9999); MDs were grouped for different key diseases (e.g., cardiovascular diseases, malignant neoplasms, sense organ diseases and respiratory diseases) as well as for basic medical equipment for diagnostic, treatment and management purposes.

Both the AD and MD sections of the survey had a broadly similar structure focused on the respondent’s setting (country, location, and work context) as follows:

• Availability and priorities for specific priority devices (drawn from developed lists) for older people;
• Questions relating to the access, systems and ancillary aspects of device success;
• Rating possible factors affecting device availability and separately, unavailability; and
• Rating potential approaches that might improve access to priority devices in their setting.

Throughout the survey, space was provided for narrative comment, and the survey finished with space to allow respondents to identify any other assistive and medical devices that were needed but not affordable or accessible in their settings.

**Results**

The survey was successful in obtaining basic overall information from a small sample of survey participants (N=100) on priority AD and MD, as well as the availability of a range of AD and MD in the six countries: four middle- income countries (MIC): China (19), Malaysia (7), Philippines (26) and Viet Nam (3); and two high-income countries (HIC): Japan (21) and the Republic of Korea (24). Useful information was obtained on perceptions regarding factors that

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1 Systematic review of needs for medical devices for ageing population (WHO, unpublished).
2 The needs, availability and affordability of assistive devices for older people in 8 countries in the Western Pacific Region: Australia, China, Fiji, Japan, Malaysia, Philippines, Republic of Korea and Viet Nam (WHO, unpublished).
may affect the availability of AD and MD, and of approaches that could improve the current situation.

**For Assistive Devices**, highest priority was for those devices needed to assist four key functional activities: 1) eat and drink as independently as possible; 2) transfer to or from bed or chair; 3) able to be clean and hygienic; and 4) able to hear and communicate. Respondents enumerated examples of assistive devices for each functional activity (e.g., special cups, modified utensils; feeders; adapted knives; stove guards; and microwave oven for the activity “eat and drink as independently as possible”). The survey demonstrated a remarkable consistency in the expectations for AD from the six countries surveyed. In part, this may be the result of the target responders being professionals working for or associated with ADs and older populations. The survey produced a reasonably consistent prioritised list of AD for a range of activities.

**For Medical Devices**, respondents indicated availability for specific priority devices for each disease category, using the criteria perceived “should be available” and “currently available” across health centres, public hospitals and private hospitals. Examples of medical devices for cardiovascular diseases were electrocardiography; Holter monitor; external defibrillator; implantable defibrillator; implantable pacemaker; coronary artery stent; and balloon pump. Ensuring availability of necessary services and support for AD provision depended heavily on location (if available at all), even in High-Income Countries. AD for mobility, such as prosthetics, had higher availability; however, respondents in China and Viet Nam reported little or no availability of AD support, particularly for those used at home and for cognitive functioning. There was consensus across countries on the key causes of both success and failure in making AD available. If ‘ageing in place’ is to be successful, making AD available at an affordable cost near the older person (or his/her family) is perceived by respondents as critical to AD success. In addition, respondents affirmed the importance of embedding AD provision (including its service delivery and support requirements) within other health and/or community services. Governments were seen to have a key role in facilitating both the procurement and affordability of AD throughout the six countries in the WHO Western Pacific Region.

Responses from MICs regarding ratio of “current availability” in private hospitals were generally higher than those from HICs. For example, there may be low demand and availability in public hospitals for MD used in the management of malignant neoplasms. There seemed to be a need in community or health centres for MD used in sense organ diseases, with higher responses from MIC for most technologies. Survey responses indicated generally good availability of MD basic equipment in all settings, with higher responses from HIC for most items. For several categories of MD (i.e., basic and laboratory diagnostic equipment, diagnostic imaging equipment and equipment for surgery and intensive care), there was good availability but also substantial demand, most often in public hospitals. The most significant factors influencing the ratio of “current availability” of MD were appropriateness in terms of current practice, acceptability to health care personnel, affordability, and availability in the national medical device market.

**Improving access.** The most highly ranked approaches to improve access to high quality AD and MD at an affordable cost were: 1) decreasing the cost of available AD and MD; and 2) improvement in governance and policy. All sectors represented in this survey clearly prioritised
government assistance for older people to acquire AD, specifically, followed closely by increased community awareness and training.

In brief, this Survey and its results was the first dedicated effort by WHO to obtain a systematic view of the thinking of a limited number of stakeholders in the six countries in the WHO Western Pacific region on both AD and MD. The survey instrument was effective and achieved the balance of sophistication and flexibility needed to deliver results – identifying priority assistive devices and medical devices for older people; understanding contributing factors for their availability or unavailability; and identifying possible approaches to improve access to high quality assistive devices and medical devices at an affordable cost. As noted below, additional steps are required to further gather the views of older persons and to increase the scale of the survey. Thus, further research and actions will be useful, and are needed, to ensure “improved access to and rational use of safe, efficacious and quality medicines and health technologies” in the concerned countries and globally.

Moving Forward

The development of this survey instrument should be considered as a pilot to build the evidence base on the need for assistive devices (AD) and medical devices (MD) for older populations. Combined with other research approaches, further refinement of the survey tool is necessary to gather more evidence that would inform current and future initiatives by WHO and partners to increase the availability and accessibility of affordable, acceptable and appropriate assistive and medical devices for use by older populations. Such additional information might best be obtained by using methodologies that include: more targeted version of the survey for specific audiences and technologies; face-to-face focused discussion with experts and users of AD and MD in the countries concerned; translation of the survey and related instruments into local languages; as well as use of the survey (or similar methodology) in a broader set of countries. For example, there is a need to validate the assertions of the rating of importance of functional activities made by respondents and this could be achieved by reusing the same question format, preferably translated to local languages, to seek responses from older people themselves. Moreover, efforts to increase the sample size of survey respondents will be important and helpful.
Acknowledgements

The summary has been developed by the WHO Kobe Centre (WKC). It was derived from the final report of the WHO commissioned research submitted by Motivation Australia and Royal Australasian College of Surgeons which developed and conducted the survey (with financial support from WHO through fund provided by the Ministry of Health, Labour and Welfare, Japan).

For more information:
Visit the following WHO websites:

- WHO Centre for Health Development (WHO Kobe Centre): http://www.who.int/kobe_centre/
- WHO HQ Medical Devices: http://www.who.int/medical_devices/en/
- WHO HQ Ageing and Life Course: http://www.who.int/ageing/en/
- WHO Regional Office for the Western Pacific: http://www.wpro.who.int/en/

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