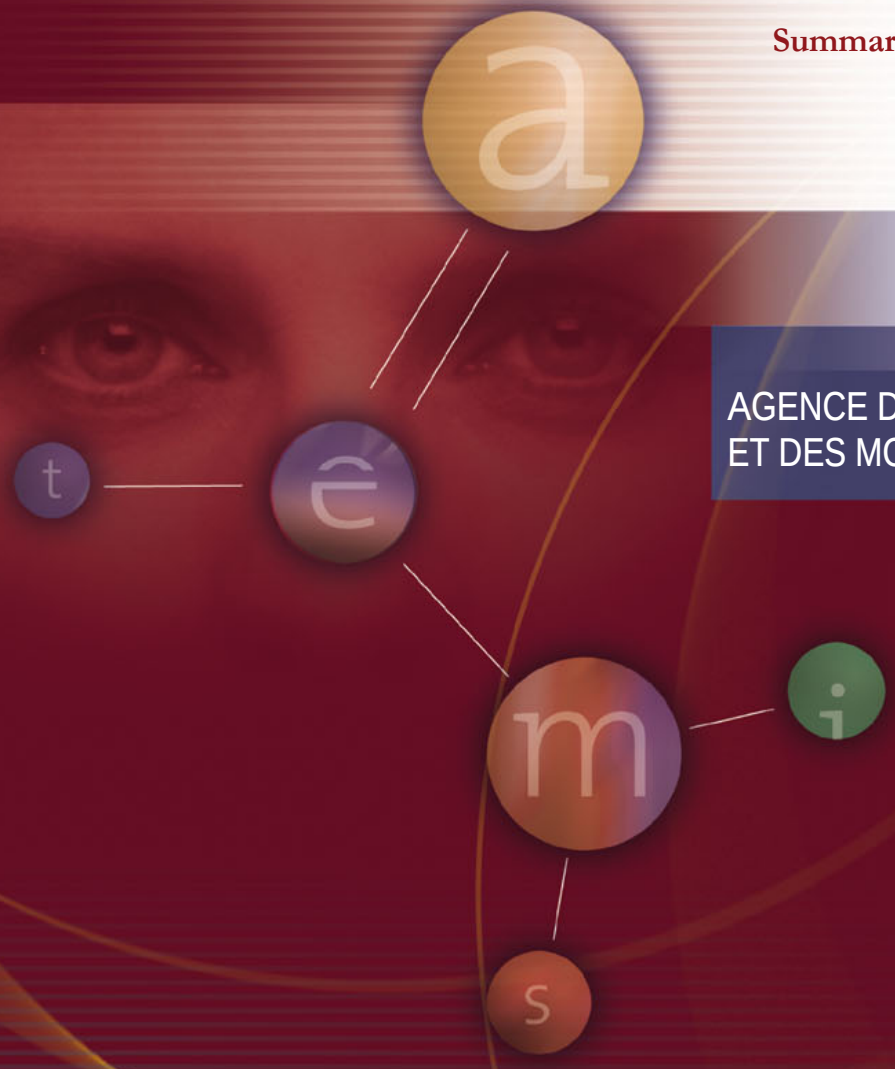
Three-Wheel and Four-Wheel Scooters: Alternatives to Powered Wheelchairs?

Summary



AGENCE D'ÉVALUATION DES TECHNOLOGIES
ET DES MODES D'INTERVENTION EN SANTÉ

Québec

Three-Wheel and Four-Wheel Scooters: Alternatives to Powered Wheelchairs?

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Initial report prepared for AETMIS by

Michèle Monette with the subsequent contribution of Imen Khelia

May 2007

Agence d'évaluation des technologies et des modes d'intervention en santé
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Mission

The mission of the Agence d'évaluation des technologies et des modes d'intervention en santé (AETMIS) is to help improve the Québec health-care system. To this end, it advises and supports the Minister of Health and Social Services and decision-makers in the health-care system with regard to the assessment of health services and technologies. The Agency makes recommendations based on scientific reports assessing the introduction, diffusion and use of health technologies, including technical aids for the disabled, as well as the methods of providing and organizing services. The assessments examine many different factors, such as efficacy, safety and efficiency, as well as ethical, social, organizational and economic issues.

Foreword

Three-Wheel and Four-Wheel Scooters: Alternatives to Powered Wheelchairs?

The Québec health care system provides assistive technology devices to people with motor or organic disabilities. These devices include three- and four-wheel scooters (TWS and FWS, respectively) as well as electric-powered wheelchairs [EPW]. The Ministère de la Santé et des Services Sociaux (MSSS) has entrusted the management of its scooter allocation program to two fiduciaries. EPWs, for their part, are allocated under the Régie de l'assurance maladie du Québec (RAMQ)'s mobility assistance program through the facilities responsible for the implementation of this program.

Market pressure to include new scooters in the MSSS program together with the increase in the number of applications and devices allocated are among the elements underlying the request that the MSSS made to the Agence d'évaluation des technologies et des modes d'intervention en santé (AETMIS). The ministry wanted to know under what circumstances it would be preferable to allocate scooters rather than EPWs and whether transferring its program to the RAMQ would make for easier management of all mobility devices.

In order to answer these questions, AETMIS conducted a review of the scientific, medical, standards- and regulation-related publications on the topic. This literature review revealed the scarcity of studies providing strong evidence about the key elements of the scooter allocation process and the post-allocation follow-up. The steps taken to answer the MSSS questions were completed by examining five other scooter allocation programs. The data extracted from the latter was compared to the results of the review of the available literature as well as the opinion of clinical experts from a group of consultants and other resource persons in the assistive-technology and rehabilitation fields.

The findings show that a scooter is of greater benefit than a motorized wheelchair when it meets the user's mobility needs and the user has the ability to operate it. Scooters actually seem to support social integration, mainly because they have a less stigmatizing appearance. Moreover, since their average cost is half that of EPWs, their allocation could represent savings. However, scooters do not necessarily represent an alternative to powered wheelchairs.

In order to transfer the scooter allocation program from the MSSS to the RAMQ's mobility assistance program, regulations will have to be adapted, and scooter performance indicators adopted and incorporated into the approval process. Furthermore, a post-allocation evaluation of mobility devices will be essential for program management. This will mean integrating the existing clinical and administrative data of the MSSS and RAMQ programs.

In submitting this report, AETMIS wishes to continue providing useful information for optimizing the current MSSS scooter allocation program and the approval process for these devices, which is prerequisite to the possible inclusion of scooters in the RAMQ's mobility assistance program.

Dr. Juan Roberto Iglesias, President and Chief Executive Officer

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DISCLOSURE OF CONFLICT OF INTEREST

None declared.

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* At the time of writing this report.

Summary

Introduction

The Québec health care system provides assistive technology devices to people with motor or organic disabilities. These devices include three- and four-wheel scooters (TWS and FWS, respectively) as well as electric powered wheelchairs [EPW]. The Ministère de la Santé et des Services Sociaux (MSSS) has entrusted the management of its scooter allocation program to two fiduciaries. EPWs, for their part, are allocated under the Régie de l'assurance maladie du Québec (RAMQ)'s mobility assistance program through the facilities responsible for the implementation of this program.

The scooter industry is constantly expanding, providing new products on the market to meet the various needs of potential users and fulfill the eligibility criteria of the paying organizations. The MSSS' assessment request stems from the market pressure to include new scooters in the mobility assistance allocation program and the increase in the number of applications and devices allocated under this program.

MSSS request

The request addressed to the Agence d'évaluation des technologies et des modes d'intervention en santé (AETMIS) is presented in the form of two questions. The first deals with the circumstances under which a FWS or, in the broader sense, any scooter (TWS or FWS), would be of greater benefit to an eligible potential user than an EPW from the RAMQ. The less stigmatizing appearance of the scooter compared to an EPW, its modular design and the possible cost-saving to the RAMQ are part of the context for the request. The second question is related to the stakes involved by adding scooters to the list of mobility assistance devices already offered by the RAMQ. The replies to these questions will serve as a basis for the MSSS's decision to transfer its scooter allocation program to the RAMQ. In fact the MSSS has already given the RAMQ the mandate to approve[1] the scooters, and the aim of centralizing these programs would be to make for easier management of all mobility devices.

Methodology

The review of the scientific, medical, standards-and regulation-related publications on the topic revealed the scarcity of studies providing strong evidence on the key elements of the scooter allocation process and the post-allocation follow-up, most studies being of poor quality. In view of this situation, the approach taken to answer the MSSS questions was completed by examining five other scooter allocation programs. The data extracted from the latter was compared to the results of the review of the available literature as well as the opinion of clinical experts from a group of consultants[2] and other resource persons in the assistive-technology and rehabilitation fields.

This assessment is essentially structured around three elements: the target clientele likely to benefit from a scooter, the clinical utility of these devices and the scooter performance

1. Many exchanges took place between the RAMQ and AETMIS throughout the writing of this report and the preparation of the approval process. The latter was completed at the end of fall 2006. The list of approved devices and the new allocation procedures came into effect on November 1, 2006 [MSSS, 2007].
2. Representatives of the fiduciaries of the Institut de réadaptation de Montréal (IRM), the Institut de réadaptation en déficience physique de Québec (IRDPQ), the Régie de l'assurance maladie du Québec (RAMQ), the Office des personnes handicapées du Québec (OPHQ) and the Ministère de la Santé et des Services Sociaux (MSSS).

as compared to mobility assistance alternatives already included in the RAMQ program or commercially available.

Results

Target clientele

Examination of the MSSS and RAMQ programs revealed that only some of the potential EPW users are also eligible for a scooter. In fact the abilities required for operating a scooter are different from those needed to use an EPW. Scooter users must necessarily: 1) have adequate balance to maintain the sitting position without any position aid; 2) be capable of independent transfer; and 3) have adequate function of the upper extremities to be able to drive the scooter. Unlike most of the scooter programs reviewed, the scooter eligibility criteria in effect in Québec do not specify any exclusion diagnostics such as degenerative diseases. Consequently, in this case, account must be taken for the length of time the scooter will be used before the individual has to resort to an EPW.

Most rehabilitation professionals acknowledge that safe scooter use calls for an assessment of the user's abilities and disabilities, as well as training. However, since the methods used to conduct these evaluations are not based on standardized criteria, the existing data on scooters do not tally, which makes any comparison difficult.

Clinical utility

The aim of the MSSS' scooter allocation program is to promote activities that facilitate social integration and which involve mainly mobility outside the home. This use may require a second locomotion or walking aid, usually provided by the RAMQ, for mobility inside the home. However, a second assistive device is only allocated in exceptional circumstances. Furthermore, as a general rule, the EPWs allocated by the RAMQ should meet all the user's mobility needs.

Post-allocation follow-up is essential to assess the clinical utility of mobility devices. However, the MSSS and RAMQ programs have little data on clinical utility, which is only partially assessed.

Device performance

The legal framework, regulations and standards governing the marketing of scooters and EPWs in Canada and the United States offer little basis when it comes to defining the performance of these devices. Given the paucity of the evidence and the partial nature of the information gathered on performance, provisions will have to be made to update the scooter approval process on a continuous basis.

Nevertheless, the information gathered brings to light ten elements to consider in evaluating the scooter performance: maneuverability, safety measures, performance tests, components and settings, easiness to drive, assembly and dismantling of the devices, device dimensions, the possible means of transportation, maintenance and psychological acceptability.

In order to incorporate scooters into the RAMQ program, it is essential to be able to compare scooters among themselves and with other mobility assistive devices covered by the RAMQ or available on the market. This means comparing field data on the performance of these devices with data about the target clientele and their clinical utility.

Conclusions

Question 1: Under what circumstances would a FWS or a TWS be of greater benefit than an EPW to a potential user eligible for the RAMQ program?

When a potential user has the necessary abilities for operating a scooter and this device can meet his/her mobility needs, it may be considered of greater benefit than an EPW, since it seems to facilitate the activities that support social integration. It should be emphasized, however, that, because of the type of abilities required to use them, their clinical utility, their configuration and properties, scooters do not necessarily represent an alternative to EPWs for all potential users. The advantage of the modular design of the scooters, which is not confirmed by the literature, should not be taken into consideration in choosing one mobility assistance device over another.

The possible cost savings achieved by allocating scooters rather than EPWs would be substantially reduced by the limited number of users who have the required abilities to operate them and by the possibility that a second locomotion or walking aid may be necessary for mobility in the home.

Question 2: What are the stakes involved by adding scooters to the list of mobility assistance devices already offered by the RAMQ?

Examination of the MSSS and RAMQ programs shows that their eligibility criteria will need to be coordinated and that the *Regulation respecting devices which compensate for a physical deficiency* will therefore need to be adjusted if scooters are to be included in the RAMQ's list of mobility devices.

The paucity of the evidence and the parallel existence of clinical and administrative databases, which are not easy to link, make it difficult to assess the results of the allocation of mobility devices. It is essential to compare the data on the target clientele, the clinical utility and the device performance with the administrative data in order to assess the efficiency of the allocation of these devices.

Integration of existing data of the MSSS and RAMQ programs and the compilation of additional data, including user satisfaction, appear to be necessary components for scooter and MWC allocation program management.

To sum up:

1) A scooter is of greater benefit than a motorized wheelchair when it meets the user's mobility needs and the user has the necessary abilities to operate it: namely, have adequate balance to maintain the sitting position without any position aid; be capable of independent transfer[3]; and have adequate function of the upper extremities (dexterity, coordination).
2) The average cost of scooters being half that of EPWs, their allocation could represent cost savings to the healthcare system, although the number of users who fulfill the eligibility conditions for these devices is limited.
3) Transfer of the scooter allocation program from the MSSS to the RAMQ will call for adjustments to the regulations for easier management of all mobility devices.

3. In the Québec programs, it is not compulsory to be capable of independent transfer to be eligible for an EPW whereas it is for the allocation of a scooter. The Centers for Medicare and Medicaid Services [CMS, 2005a], however, do not make independent transfer compulsory, for either EPWs or scooters, provided that a caregiver capable of transferring the user safely be available.

Recommendations

The following recommendations set forth the principal measures to be taken in order to optimize the Ministère de la Santé et des Services Sociaux (MSSS)'s scooter allocation program and update the Régie de l'assurance maladie du Québec (RAMQ)'s scooter approval process in view of incorporating these devices in the RAMQ program:

1) Allocate a scooter instead of an EPW whenever the potential user has the necessary abilities to operate it and provided that the scooter can meet his/her mobility needs.

2) Review the eligibility criteria of the MSSS and the RAMQ programs for the target clientele and the scooter clinical utility criteria in order to better identify the users' needs and the possibilities and limits of these allocation programs.

3) Standardize the assessment methods used by fiduciaries and by the RAMQ. Such standardization raises the issue of assessing potential users in their living environment or in a laboratory setting.

4) Compare scooters in light of the parameters related to the target clientele, the clinical utility and the performance of these devices in order to update the scooter approval process and future approval of other mobility assistive devices.

5) Adopt the key elements defining the target clientele, the clinical utility and the scooter performance in order to compare scooters among themselves and with other mobility assistive devices within the framework of the RAMQ approval process.

6) Strike a committee composed of representatives from the MSSS, the RAMQ, the fiduciaries, the Office des personnes handicapées du Québec (OPHQ), users and other experts involved in the allocation of mobility assistive devices.

   - This committee would provide support to the RAMQ in adapting and implementing the program, in particular to study the various options for the progressive integration of assessment methods by the professionals in both programs.
   - It could provide guidance for generation of the data needed to assess the results of mobility assistive device allocation. The measuring tools reviewed in this report for assessing the abilities, the training in the use of these devices – including that given to the users' potential caregivers and post-allocation follow-up − and consultation of acknowledged Québec experts would be a good basis for this integration.
   - It could participate in a consultation among scooter and EPW users, who are the very purpose of the allocation of mobility assistive devices.

7) Implement relational databases to gather data on the target clientele, the clinical utility and the performance of the devices together with the accident rates and administrative data in order to link the information for decision-making purposes.

8) Set up a technology watch to monitor the developments in and marketing of mobility devices and keep abreast of the utilization objectives for the new devices in order to meet the needs of potential users more adequately. The mandates and the organization responsible for this watch should be clearly established.

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