

JOURNAL OF GERIATRIC EMERGENCY MEDICINE

Winter 2022-2023 | Volume 3 | Issue 4

Article 6 | Original Research- Education & Training

JGEM | The Journal of Geriatric
Emergency Medicine



Indication of Mobility Aids and Training of Older Patients in a Geriatric Emergency Department: Abiding by International Guidelines

Mario C. de Andrade-Júnior PT, MSc, Christian V. Morinaga MD, PhD, Christina M. M. de Brito MD, PhD, Igor G. Moraes PT, PhD, Wellington P. Yamaguti, PT, PhD, Pedro K. Curiati MD, PhD

ABSTRACT

Falls are the main cause of morbidity among older adults. In this context, assistive gait devices are used to improve function and safety. However, inadequate selection and use can result in poor gait and risk of injury.

All patients admitted to our emergency department (ED) undergo a medical evaluation in which, based on their clinical condition, the protocol for indication and training in the use of walking aids can be triggered. Patients need to be clinically stable and have enough physical and cognitive function to benefit from it. Once the patient is deemed able, the next step is an assessment of needs and potential benefits. After the patient and his proxy agree to undergo specific evaluation and training, the physician or the ED nurse calls the physical therapy team to carry out a broader assessment that includes the Timed Up and Go (TUG) test.

Following the functional evaluation, the physical therapist identifies the mobility needs of the patient and indicates the most appropriate walking device. The TUG test is performed again with the use of the mobility aid device and the results are compared to confirm the improvement in the patient's performance regarding balance and mobility. Finally, the physical therapist refers the patient to the rehab center of our hospital for further rehabilitation, if applicable, and provides a written document with the type of the suggested device and possible purchase locations.

Hospital Sírio-Libanês is a leading philanthropic tertiary hospital in São Paulo, Brazil. It has 474 beds, 33 specialized centers, and is certified by the Joint Commission International. Its Emergency Department (ED) receives more than 90,000 visits every year, and, since 2017, it has housed a geriatric ED program (Pronto Atendimento Geriátrico Especializado [ProAGE]). ProAGE is an initiative designed to provide high-quality, specialized care to older adults in the ED. In 2019, ProAGE received the Level III geriatric ED accreditation (GEDA) of the American College of Emergency Physicians (ACEP) and became the first of its kind in the southern hemisphere. In 2022, ProAGE joined the Geriatric Emergency Department Collaborative (GEDC) and to this day remains its only center in South America.

This manuscript will discuss the institutional protocol for the indication of mobility aids and training older patients to use them safely which was devised to adhere to international guidelines and comply with GEDA.

BACKGROUND AND RATIONALE

According to the World Health Organization (WHO), the Brazilian geriatric population will increase from the current 12.5% to approximately 30% by 2050. In a national study, the prevalence of falls in this population in 12 months was 27.6%, with 11% resulting in fractures.¹ Ambulatory devices, including canes, crutches, and walkers can help with walking, improving the patient's balance and weight-bearing ability.²

Falls are the main cause of injuries, hospitalization, and loss of functionality among adults over 65 years of age.³ Thus, proper indication of assistive gait devices should be part of multidimensional fall prevention programs as they improve functionality, mobility, stability, and base of support, and reduce the effects of a wide range of disabilities.⁴ However, it's estimated that 33% of prescriptions are abandoned, mainly due to a lack of patient involvement in the decision-making process.⁵ In fact, many patients receive little or no professional assistance when selecting a mobility aid, and inadequate selection and use can result in a poor gait pattern, which increases energy expenditure and the risk of falls, frustration, and loss of functional performance.^{6,7}

Both American⁸ and European⁹ Geriatric ED guidelines strive to promote mobility and preserve function. Consistent with these values, access to mobility aids is recommended and has been required as a basic standard of care by GEDA.¹⁰ Aiming to comply with the international guidelines, but aware of the consequences of inadequate selection and use of mobility aids, we gathered a transdisciplinary team to develop a comprehensive protocol for the proper indication of mobility aids and the necessary training of older patients in our Geriatric ED. We understand that such a protocol must address patients' needs and consent, as well as their authorization, training, and follow-up.

PROCEDURES

All patients admitted to the ED undergo a medical evaluation in which, based on the patient's clinical condition, the protocol for indication and training in the use of walking aids can be triggered. This step does not depend on falls being the reason for ED presentation. This evaluation can be conducted by either an emergency physician, a general surgeon, an orthopedic surgeon, or a neurologist, according to local triage protocols. Patients need to be clinically stable and have enough physical and cognitive function to benefit from the mobility aids protocol. Sufficient postural stability is determined by the attending emergency physician when the patient can stand with no tendency to fall backward. Cognitive ability is evaluated by the same physician during the standard clinical assessment and objective parameters, such as the Confusion Assessment Method (CAM)¹¹ and the 10-item Cognitive Screener (10-CS), might be used.¹² Once the patient is determined to be able, the next step is an assessment of the patient's needs and potential benefits from using walking aids. (Please see the **Figure** on the following page.)

Both patients with and without previous use of assistive devices can be eligible for the current protocol, as it aims to improve selection and training of the equipment deemed most appropriate regardless of previous experiences.

Once the previous sets of criteria are met, the patient and his proxy are asked if they agree to undergo specific evaluation and training for the use of mobility devices. If they refuse it, the physician recommends the HOSPITAL SÍRIO-LIBANÊS's Rehabilitation Center for directed outpatient rehabilitation, if suitable. However, if they accept it, the physician or the ED nurse calls the physical therapy team for prompt assistance at the ED or for an early outpatient appointment at the rehab center. The rehab center is certified by the Commission on Accreditation of Rehabilitation Facilities (CARF) since 2014.

The physical therapist then carries out a broader assessment that includes the Timed Up and Go (TUG) test. This test evaluates mobility and balance by having the patient stand up, walk 3 meters, turn around, and sit down^{13,14}. Following the functional evaluation, the physical therapist identifies the mobility needs of the patient and indicates the most appropriate walking device:

- Canes are preferred when the patient can use an upper limb for lightweight bearing and has a need for somatosensory feedback. The cane should be positioned between 15 and 20 cm laterally to the feet. The patient's hand should be supported on the cane at the height of the greater trochanter of the femur so that the elbow is slightly bent, with approximately 30° of flexion.
- In general, the cane is used on the opposite side of a motor deficiency. One or multiple-legged canes, with T or swan neck handles are usually indicated, according to patients' characteristics and needs.

Figure: Institutional Protocol for Indication of Mobility Aids, and Training Older Patients to use them Safely.

Medical Evaluation

- Requirements to qualify for the mobility aids protocol**
- Conscious, oriented and collaborative
 - No need for supplemental oxygen or need for low flow (<3L/min)
 - No respiratory distress
 - Hemodynamically stable
 - Postural stability with no tendency to fall backwards
 - Cognitively able to manage a gait mobility device

YES

- Assessment of patient's needs and potential benefits**
- | | |
|------------------------------------|-------------------------------|
| Reduction of postural instability | Improve motor control |
| Increase of somatosensory feedback | Lessen biomechanical overload |
| Promote autonomy safely | Fall prevention |

YES

Patient and his proxy asked to undergo specific evaluation and training for the use of mobility devices.

YES

Patient consent

NO

Rehabilitation Center referral for outpatient rehabilitation.

Physical therapy team called to the ED

Functional evaluation by the physical therapist (TUG included)

Mobility needs
- 1 upper limb for light weight bearing
- Somatosensory feedback

Mobility needs
- 2 upper limbs for heavy weight bearing
- Overload reduction

Mobility needs
- 2 upper limbs for heavy weight bearing
- Greater postural stability

Canes

Walkers

Training for the proper use of indicated device

TUG re-test

Written document with type of device and purchase locations

Rehabilitation Center referral for outpatient rehabilitation

END

- Walkers require two upper limbs for heavy weight bearing and is preferred in the presence of postural instability. The equipment should be held with the arms between 20 and 25 cm in front of the body, relaxed shoulders, erect torso, and elbows flexed at 20° to 30°. Standard or, more frequently, wheeled walkers are indicated.
- In some specific cases, crutches might be indicated. Patients' preferences are also considered.

The TUG test is performed again with the use of the mobility aid device and the results are compared to confirm the improvement in the patient's performance regarding balance and mobility. Finally, the physical therapist refers the patient to the rehab center of HOSPITAL SÍRIO-LIBANÊS for further rehabilitation, if applicable, and provides a written document with the type of the suggested device and possible purchase locations.

QUALITY ASSESSMENT

The following parameters will be routinely monitored:

- number of times the protocol is triggered at the HOSPITAL SÍRIO-LIBANÊS's ED
- number of appointments made at the rehab center, as a result of a referral
- results of TUG before and after the intervention
- devices indicated

Data will be analyzed monthly to evaluate adequacy of care. Despite the availability of assistive devices in our ED for a few years now, as required to comply with GEDA, the full protocol described in this article has just been implemented and results of quality assessment are not available yet. We aim to share it as soon as we have enough information to analyze, critically re-evaluate the proposed protocol and publicize the lessons learned, probably in 6 to 12 months.

CONCLUSION

In summary, adhering to Geriatric ED guidelines can be challenging, especially when recommended resources can be harmful if implemented without proper safeguards. In HOSPITAL SÍRIO-LIBANÊS, before GEDA, patients with higher risk of falls were placed on wheelchairs to prevent falls. Now, thanks to a thoughtful and transdisciplinary collaboration, a safe and highly technical protocol is ready to promote easy access to mobility aids in the ED. As a next step, our team is currently working on a protocol for a clinical trial to assess the impact of this protocol in patient-centered outcomes.

KEYWORDS

Geriatric Emergency Department, Interprofessional, Protocols, Walking Aids, Falls, Frail Elderly

AFFILIATIONS

Mario C. de Andrade-Júnior PT MSc	Rehabilitation Service, Hospital Sírio-Libanês, São Paulo, Brazil
Christian V. Morinaga MD PhD	Geriatric Emergency Department (ProAGE) Research Group, Hospital Sírio-Libanês, São Paulo, Brazil
Christina M. M. de Brito MD PhD	Rehabilitation Center, Hospital Sírio-Libanês, São Paulo, Brazil; Rehabilitation Service, Instituto do Câncer do Estado de São Paulo, Hospital das Clínicas, University of Sao Paulo School of Medicine, São Paulo, Brazil (ORCID: 0000-0003-3775-6533)
Igor G. Moraes PT PhD	Rehabilitation Service, Hospital Sírio-Libanês, São Paulo, Brazil
Wellington P. Yamaguti PT PhD	Rehabilitation Service, Hospital Sírio-Libanês, São Paulo, Brazil
Pedro K. Curiati MD PhD	Geriatric Emergency Department (ProAGE) Research Group, Hospital Sírio-Libanês, São Paulo, Brazil; Geriatric Center for Advanced Medicine, Hospital Sírio-Libanês, São Paulo, Brazil

CORRESPONDING AUTHOR

Pedro K. Curiati MD PhD
E-mail: pedro.kcuriati@Hospital Sírio-Libanês.org.br
Adma Jafet Street 115
ZIP 01308-050 – São Paulo – SP – Brazil
Telephone and fax number: +55 11 3394-5021
Geriatric Emergency Department, Sírio-Libanês Hospital

CONFLICTS OF INTEREST

Authors have no conflicts to report.

AUTHOR CONTRIBUTIONS

All authors contributed to the conceptualization, writing, and revision of this article.

Sponsor Role: There were no sponsors of this work.

Funding: There was no funding for this work.

REFERENCES

1. Siqueira FV, Facchini LA, Silveira DS, et al. Prevalence of falls in elderly in Brazil: a countrywide analysis. *Cad Saude Publica*. Sep 2011;27(9):1819-26. doi:10.1590/s0102-311x2011000900015
2. Van Hook FW, Demonbreun D, Weiss BD. Ambulatory devices for chronic gait disorders in the elderly. *Am Fam Physician*. Apr 15 2003;67(8):1717-24.
3. Ganz DA, Bao Y, Shekelle PG, Rubenstein LZ. Will my patient fall? *JAMA*. Jan 03 2007;297(1):77-86. doi:10.1001/jama.297.1.77
4. Glisoi SFdN, Ansai JH, da Silva TO, et al. Auxiliary devices for walking: guidance, demands and falls prevention in elderly. *Geriatrics, Gerontology and Aging*. 2012;6:261-272.
5. Larsson Ranada Å, Lidström H. Satisfaction with assistive technology device in relation to the service delivery process-A systematic review. *Assist Technol*. 2019;31(2):82-97. doi:10.1080/10400435.2017.1367737
6. Kuan TS, Tsou JY, Su FC. Hemiplegic gait of stroke patients: the effect of using a cane. *Arch Phys Med Rehabil*. Jul 1999;80(7):777-84. doi:10.1016/s0003-9993(99)90227-7
7. Luz C, Bush T, Shen X. Do Canes or Walkers Make Any Difference? NonUse and Fall Injuries. *Gerontologist*. Apr 01 2017;57(2):211-218. doi:10.1093/geront/gnv096
8. Physicians ACoE, Society AG, Association EN, Medicine SfAE, Force GEDGT. Geriatric emergency department guidelines. *Ann Emerg Med*. May 2014;63(5):e7-25. doi:10.1016/j.annemergmed.2014.02.008
9. Lucke JA, Mooijaart SP, Heeren P, et al. Providing care for older adults in the Emergency Department: expert clinical recommendations from the European Task Force on Geriatric Emergency Medicine. *Eur Geriatr Med*. Nov 05 2021;doi:10.1007/s41999-021-00578-1
10. ACEP Geriatric ED Accreditation Criteria. American College of Emergency Physicians; 2019. <https://www.acep.org/globalassets/sites/geda/documnets/GEDA-criteria.pdf>
11. Inouye SK, van Dyck CH, Alessi CA, Balkin S, Siegal AP, Horwitz RI. Clarifying confusion: the confusion assessment method. A new method for detection of delirium. *Ann Intern Med*. Dec 1990;113(12):941-8.
12. Apolinario D, Lichtenthaler DG, Magaldi RM, et al. Using temporal orientation, category fluency, and word recall for detecting cognitive impairment: the 10-point cognitive screener (10-CS). *Int J Geriatr Psychiatry*. Jan 2016;31(1):4-12. doi:10.1002/gps.4282
13. Podsiadlo D, Richardson S. The timed "Up & Go": a test of basic functional mobility for frail elderly persons. *J Am Geriatr Soc*. Feb 1991;39(2):142-8. doi:10.1111/j.1532-5415.1991.tb01616.x
14. Bischoff HA, Stähelin HB, Monsch AU, et al. Identifying a cut-off point for normal mobility: a comparison of the timed 'up and go' test in community-dwelling and institutionalised elderly women. *Age Ageing*. May 2003;32(3):315-20. doi:10.1093/ageing/32.3.315