Admission Criteria in Short-term Geriatric Assessment Units
A Delphi Study

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ABSTRACT

Background: In recent years, short-term geriatric care units that operate using an interdisciplinary approach have been established in Quebec and elsewhere, in order to provide frail elderly persons with better health care. The purpose of this study is to determine criteria that target the greatest number of individuals most likely to benefit from hospitalization in this type of care unit.

Methods: A Delphi survey was conducted. The panel of experts consisted of 54 physicians and nurses working in short-term geriatric care units in Quebec. Three questionnaires were mailed and 4-level Likert scales were used. Median values, and 25th and 75th percentiles to a maximum of 2, were chosen a priori as the definition of consensus.

Results: The survey used 14 inclusion criteria and 17 exclusion criteria. Inclusion criteria were divided into two categories and exclusion criteria were divided into four.

Interpretation: A typical clinical profile of a patient who should be admitted to a STGCU emerges: an elderly person presenting multiple pathologies, acute or sub-acute functional disability, and often related psychosocial problems. The instrument developed by this project is a practical guide for professionals in STGAUs as well as those responsible for allocating resources in the health care system.

La traduction du résumé se trouve à la fin de l’article.

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Short-term geriatric assessment units (GAUs) appeared in Quebec hospitals in the 1980s. As was the case elsewhere, GAUs were established to deal more effectively with episodes of illness and disability experienced by frail elderly persons requiring hospitalization.1

GAUs provide overall, integrated care in an adapted and stimulating hospital environment in which an interdisciplinary team systematically monitors geriatric conditions. In addition, GAUs collaborate with other resources in discharge planning in order to promote continuity of care.

This study is part of a research program examining the autonomy of elderly persons,2 specifically the “frail” elderly, who are the principal users of geriatric services. In this program, a parallel research project, which examined the 77 Quebec GAUs, indicated a high level of heterogeneity with respect to structure, source of clientele, diagnosis, length of stay and integration of care with other hospital and community-based geriatric resources. Despite this diversity, thorough analysis of patients’ structural and medical characteristics has enabled us to identify three types of GAU according to their principal function, i.e. rehabilitation, medical care, and mixed.3

GAU effectiveness is closely related to choice of clientele.1-13 On this subject, the literature indicates that GAU admission criteria vary and depend on factors such as orientation, expertise, and available hospital and community resources.4,5,7,14,15 The literature also describes admission criteria used by American GAUs, which are more homogeneous than GAUs in Quebec, and their primary objective is rehabilitation.14,16,17 However, a recent publication describes acute care units for the elderly as well.18

Factors justifying this study, whose purpose is to develop criteria that will determine clients most likely to benefit from hospitalization in a GAU in Quebec, include the following: association between program performance and a defined clientele, the current reflection regarding the appropriateness of clients served in the hospital sector, the variability of admission criteria discussed in the literature, and finally, the efficient use of hospital resources in a context of scarcity (particularly hospital beds) and of geriatric professional shortage. The study employed the Delphi technique to achieve its goal.
The Delphi technique

The purpose of this technique is to enable a panel of experts to reach a reliable consensus on a specific subject.22,23 The four main characteristics of this method are participant anonymity, iteration with controlled feedback, statistical calculation of group response, and use of data supplied by experts.22,23 Many variants of the Delphi method exist;24 their common feature is the structuring of group communication through a sequence of “rounds” in order to reach a consensus.

**Participants**

Our panel of experts was created as follows: in February 1997, we contacted medical and nursing directors of 77 Quebec GAUs by mail, requesting names of professionals with recognized expertise in GAU operations. A few months later (summer 1997), our advisory committee selected 75 physicians and nurses, covering all regions of the province, from among the suggested names. Fifty-four agreed to participate in our study (27 physicians, 27 nurses).

**Questionnaires**

The first questionnaire was mailed out in October 1997. It contained a single open question asking participants to list the main inclusion and exclusion criteria on which admission to a GAU must be based. This questionnaire was pre-tested with 5 GAU professionals (3 physicians and 2 nurses) who were not part of our panel of experts.

A second questionnaire, mailed in December 1997, was developed based on criteria suggested by professionals in the first phase of the study. Participants received feedback on their responses, as well as a synthesis of those of their colleagues. This questionnaire consisted of 17 questions, including 45 statements, and asked participants to indicate their opinion.
ADMISSION CRITERIA IN GAUs

TABLE III
Summary of Inclusion Criteria

- Person aged 65 or over who:
  1. Presents a geriatric profile (multiple pathologies requiring intervention of a multidisciplinary team); and
  2. Requires admission for long-term care.
  3. Can be managed by ambulatory care.
  4. Shows a lack of motivation and cooperation.

TABLE IV
Summary of Exclusion Criteria

- Person aged 65 or over who:
  1. Presents a single pathology or chronic problems that can be managed in other services or specialized units (intensive care, palliative care, coronary care unit, psychiatry, surgery and post-operative departments, isolation unit, etc.).

Responses, analyzed by the project advisory committee, are shown in Tables I (inclusion criteria) and II (exclusion criteria). Participants reached a high level of agreement on many admission criteria. With a maximum value being the median and 25th and 75th quartiles to a maximum of 2, selected inclusion and exclusion criteria corresponded to items with which more than 60% (inclusion) and 75% (exclusion) of experts agreed or agreed strongly. This generated a total of 14 inclusion criteria and 17 exclusion criteria. Analyses of physicians’ and nurses’ responses were conducted separately and no differences between these types of professionals were observed. As shown in Tables III (inclusion criteria) and IV (exclusion criteria), the research team again summarized the criteria retained by the expert panel.

DISCUSSION

Study limitations

The limitations of this study are mostly related to the limitations of the Delphi method, such as the definition of consensus. Despite the opinion of certain authors, such as Sackman, who discuss the elusive nature of consensus, the Delphi method was an appropriate tool for this study, designed to obtain the opinion of experts on a specific issue. For this study, we decided to determine our definition of consensus regarding GAU admission criteria a priori. To do so, we chose the single value of the median, which, in our experience, is the indicator that best describes group consensus. To measure dispersion, we used interquartile deviation, with values very close to the maximum value of the median. Finally, in the second and third questionnaires, we opted for Likert scales, which are the most popular research instruments used to measure attitudes. A four-level response scale was used to avoid the possibility of a neutral response and thus oblige participants to specify whether they agreed or disagreed with each statement.

Much discussion on the validity of the Delphi method is found in current literature. Three major types of influence were identified: a) the choice of experts participating in the study; b) the validity of the response given by these experts; and c) the influence of the feedback process on consensus and converging responses.

If the Delphi method is used, the choice of experts is crucial. We selected clinicians whose expertise is recognized by their peers. This process generated a list of over 200 potential experts. The geriatricians on the research team selected 75 professionals, based mainly on their type of practice and scientific-related activity. We also considered the reputation of each GCU, as well as its basic orientation and geographical location. Finally, because a certain degree of heterogeneity is preferable to homogeneity in the composition of expert panels, we decided to choose equal numbers of physicians and nurses to participate. This also illustrates the ways in which the responsibilities and experiences of these two types of professionals in GAUs complement each other.

Preservation of anonymity also influences the validity of responses given by experts. While anonymity promotes free expression of opinions by avoiding the pressure and inhibition that can be present in face-to-face discussions, it eliminates the stimulation leading to the emergence of new ideas during group discussions. In addition, anonymity can reduce participants’ sense of responsibility, leading them to respond less carefully.
Feedback also influences consensus. Sackman37 points out that independent judgement disappears when participants are aware of the responses of other participants. To take this factor into account, our analysis focused on stability of group responses.35,36 In our study, response stability was observed from the first questionnaire, thus the number of extreme opinions that are necessarily eliminated in this method was minimal.

Another limitation of this method is the amount of time required, particularly when surveys are sent through the mail. This factor causes fatigue in participants and thus reduces their motivation.34,35 To minimize this problem, before sending the initial questionnaire, we asked the 75 experts initially selected to agree to participate in the study. This reduced the number of participants to 54, but ensured a high level of motivation during the study, as indicated by the small number of reminder letters sent out regarding completion of the second and third questionnaires, and the excellent response rate obtained for all three questionnaires.

According to Williams & Webb,32 insufficient evidence exists regarding the reliability of this technique. However, certain factors should be considered in order to maximize the reliability of a Delphi study. First, questionnaires must be pre-tested. Before being distributed, the first questionnaire was pre-tested on clinicians working in GAUs that were not part of the study.35 We believed it was unnecessary to pre-test the other two questionnaires, given that the statements included were very similar to those formulated in the first round. In addition, the research team consisted mainly of physicians practicing geriatric medicine in a hospital setting, which ensured that questionnaire items were written in clinical language familiar to participants.

Second, the number of participants is important.37 The ideal number of participants in a Delphi study is not well defined; the literature suggests seven,20 thirteen,29,38 thirty,21,37 and even much higher numbers.22,39 Reliability does increase with group size;40 however, this complicates the analysis of results.24 In our case, we considered 27 physicians and 27 nurses – a desirable number in terms of both response reliability and study logistics. Finally, the number of rounds of group consultation is a significant factor.57 Generally speaking, there was little change in consensus after the third questionnaire;30,41 this was therefore the last round in the study.

**Admission criteria**
The 14 inclusion criteria chosen by the expert panel are discussed in various publications.4,5,9,42-47 To increase clinical relevance, these criteria were grouped into two categories by the research team (Table III). The first category includes patients at least 65 years old requiring hospitalization in a GAU due to presence of a geriatric profile or an acute or sub-acute functional reduction with risk of deterioration of health status or nursing home admission. Hospitalization is necessary because ambulatory services are unable to deal with the individual’s clinical profile. The fact that the person is known to the GAU and subject to frequent re-hospitalizations, due to the nature of his/her health problems is also an important criterion that the expert panel selected with respect to this group of patients. Care continuity is therefore assured for a particularly frail clientele, if one considers the instability and complexity of their health status.

The second category of inclusion criteria targets patients presenting potentially reversible complications resulting from recent onset of immobility, and elderly persons from the community or transferred from another hospital unit.

Exclusion criteria were more numerous than inclusion criteria (Table IV). In addition, the expert panel reached a more complete consensus regarding exclusion criteria than that regarding inclusion criteria. The research team expected this result, given the fact that exclusion criteria were easier to determine. The criteria determined correspond to those discussed in other studies,4,5,9,45,46 but are also more specific. These results highlight the particular role of GAUs in the management of problems resulting from recent onset of immobility affecting certain elderly persons. Thus, 95% of participants agree that patients presenting this type of problem should be admitted to GAUs. However, the level of agreement regarding management of other problems related to intensive rehabilitation activities is much lower: 59% for stroke and 56% for hip fractures. This is probably due to the existence of specific programs for the clinical management of such conditions. Despite the need for stronger evidence, we could postulate that this choice seems associated, on one hand with an insulated vs. integrated nature of the continuum of GAU’s geriatric services;40 on the other hand, with a number of other elements: 1) the degree of expertise shown by the professionals (e.g., geriatric specialists vs. family physicians with a geriatric practice), 2) the level of instability that can be assumed by the GAU program, 3) the more or less adequate accessibility of a range of specialized structures for geriatric patients, both internal and external to the hospital: academic training, home care program, day centre, day hospital, rehabilitative intensive program, gerontopsychiatry, specialized ambulatory services, and long-term and temporary institutionalization.

Finally, given the fact that this tool was developed by professionals with expertise recognized by their peers, and that the response rate for the three questionnaires was quite high, it may prove highly useful to clinical managers in GAUs as well as those responsible for allocating resources within the health care system. Nevertheless, these criteria deserve to be understood from an integrated delivery perspective, which is in constant evolution according to the availability of resources and professional competencies at a given time in a particular context.

**References**

RÉSUMÉ

Objectif : Des unités de courte durée gériatriques (UCDG) offrant une approche de soins globale et interdisciplinaire ont été établies dans les hôpitaux généraux et spécialisés du Québec et d’ailleurs afin d’offrir aux personnes âgées fragiles des soins de santé adaptés à leurs besoins particuliers. L’objectif de la présente étude était d’établir les critères d’admissibilité ciblant le plus grand nombre de personnes à même de bénéficier d’une hospitalisation dans ce type de structure.

Méthode : Une enquête de type Delphi a été réalisée à cette fin. Le groupe d’experts était formé de 54 médecins et infirmières rattachés aux UCDG. L’enquête a été effectuée à l’aide de trois questionnaires postaux, et les réponses ont été mesurées selon une échelle de Likert à quatre niveaux. Un consensus a priori a été défini d’après les valeurs médianes des 25e et 75e valeurs percentiles jusqu’à un maximum de 2.

Résultats : Un consensus a été obtenu autour de 14 critères d’inclusion et 17 critères d’exclusion. Les critères d’inclusion ont été regroupés en deux catégories, et les critères d’exclusion en quatre catégories. Un profil clinique type émerge de cette enquête : celui d’une personne âgée atteinte de multiples pathologies et d’un déclin fonctionnel aigu ou sub-aigu, souvent associé à des problèmes psychosociaux.

Conclusion : Ces critères apparaissent utiles à la fois pour les professionnels géants les admissions en UCDG et pour les responsables de l’allocation des ressources dans notre système de santé.