



**PRISMA**

**Program on Research for Integrating Services for the Maintenance of Autonomy**

**Volume II**

**Integration of Services  
for Disabled People:  
Research Leading  
to Action**

**Edited by**

**RÉJEAN HÉBERT  
ANDRÉ TOURIGNY  
MICHEL RAÏCHE**

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# Chapter 22

## Case-Finding of Older Persons with Moderate to Severe Disabilities by means of PRISMA-7 Questionnaire: A Presentation of the Instrument, Its Implementation, and Its Use<sup>\*</sup>

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Michel Raïche, Réjean Hébert, Marie-France Dubois, Johanne Bolduc, Maryse Grégoire, Céline Bureau, and Anne Veil

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### Highlights

- Until now little case-finding has been done for older persons with moderate to severe disabilities.
- This article presents an overview of the topic, proposes an instrument, and describes its use and implementation.
- The PRISMA-7 questionnaire has a sensitivity of 78 % and a specificity of 75 % for case-finding individuals with a SMAF score of  $\leq -15$ .
- Currently the questionnaire is used in the emergency room, in local community service centers, and during vaccination campaigns; it is administered by telephone, in written form, or by face-to-face interview.
- Taking an approach that is both opportunistic and systematic, it is possible to identify prevalent cases of significant disability previously unknown to the health system and maximize the potential for intervention effectiveness.

**Keywords:** Case-finding – Disability – Older people – Validity – Implementation

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## Summary

A significant proportion of older adults live at home with moderate to severe disabilities. Short of completing an exhaustive assessment, the only way to identify these individuals is with a case-finding tool. The Eastern Townships region in Québec, Canada, implemented different approaches to identify these persons. The PRISMA-7 case-finding tool had previously been developed to identify older adults with moderate to severe disability who could benefit from integrated services. The tool has been used progressively in different settings and at different times, including the single entry point for accessing services for older people in Sherbrooke. Implementation began in emergency departments at the university hospital. Surgery preparatory clinics then started using the tool. The annual influenza vaccination campaign provides a good opportunity to perform quasi-systematic case-finding. Using PRISMA-7 in all these settings could be described as a mix between an opportunistic (single entry, emergency, surgery preparatory clinics) and systematic (influenza annual vaccination) approach. The persons identified by the tool should then be referred for disability assessment. The processes, approach, and logistics for assessment are discussed.

## Introduction

A large proportion of elders live at home with significant disabilities<sup>1,2</sup>. Some of these individuals are not known to the health system and could possibly benefit by being assessed. In an optimal health system, all elders presenting with mild, moderate, or serious disabilities would be identified and assessed, and the interventions they needed would be in place. In practice, however, not even all moderate to serious disabilities are detected by clinicians in their elderly patients. Very little work has been done on proven methods for case-finding dependent elders. Yet numerous screening instruments have been validated for identifying other health issues and events that affect elders and these are being put to varying degrees of use<sup>3-5</sup>.

Why has disability case-finding elicited so little interest to date? In 1991, *The Lancet* published an editorial on just this topic<sup>6</sup> and put forward an explanation, including several factors. The list included lack of time for evaluation, under-reporting of disability problems by users, and overly long or complex questionnaires developed mainly for use in research. Other publications dating from 1999<sup>7</sup> and 2004<sup>8</sup> indicate this crucial issue was still of concern at those dates; and so it is to this day. We have only begun taking concrete steps to address it. Some authors have examined the difficulties associated with case-finding elders with specific conditions, including some disabilities and frailty<sup>9,10</sup>.

Failure to case-find significantly disabled elders has consequences. Clinicians and managers involved in in-home and hospital service delivery too often find themselves facing elderly users and wondering why they didn't know and

hadn't seen these individuals before. How, they ask, could this person have reached such an advanced stage of disability without attracting the attention of a health and social services worker? Often these individuals are encountered in the emergency room (ER), an entry point into the Quebec health system commonly used by elders or members of their close circles who do not know where else to turn.

When family caregivers contact the health system at an advanced stage of burnout, mechanisms for stabilizing a condition of disability are few. Early intervention, especially if case-finding is used, could prevent things reaching this stage. Without it, the necessary measures consist of the emergency mobilization of many home-support workers in an effort to avoid, at least to some extent, needless extended hospital stays and repeated ER visits, which constitute the health system's costly and inappropriate responses to a fundamental problem.

But are there effective interventions to be made once disabled elders are identified? The response to disability is by nature multidisciplinary, involving numerous institutional health and social services workers, organizations, and service providers whose roles are complementary and who must coordinate their actions. Coordinated and integrated intervention appears to offer the best hope for a solution<sup>11, 12</sup>. The absence of coordination can itself become a risk factor for disability<sup>13</sup>.

We would like to specify here the distinction between screening and case-finding. "Screening" refers to the identification of individuals who will be affected in the future by a particular pathology or state of dependency. It is an instrument for predicting incident cases. "Case-finding" refers to identifying individuals already affected by a given pathology or state of dependency; it deals with prevalent cases<sup>14</sup>.

When conducting our research, we reviewed numerous publications dealing with predictors of functional decline and screening for disability. What can be observed is that very little screening is actually done on the ground. Perhaps this is because, before turning to the question of elders who will develop disabilities, we must take care of all those who are already significantly disabled and not known to the system.

In the Estrie health region of Quebec, the implementation in 2001 of an integrated services network for the elderly (RISPA; French *réseau intégré de services pour personnes âgées*) took place with involvement by the research team on a project known as PRISMA (Program on Research for Integrating Services for the Maintenance of Autonomy)<sup>11, 12</sup>. The need for an instrument to case-find disabled elders emerged in the course of discussions relating to coordination to implement RISPA. The health and social services workers involved wished to make the transition from a reactive to a proactive approach vis-à-vis disability, thereby avoid being required to put out fires once situations have become urgent.

In 2005, Quebec's department of health and social services (MSSS; French name *Ministère de la Santé et des Services sociaux*) published an action plan for the years 2005 to 2010<sup>15</sup>. Page 39 of the action plan states:

Act early, in accordance with recognized practice standards, to reduce dependency among the elderly whose health conditions require acute care:  
Develop a disability case-finding protocol that takes account of sex-related specifics, to be used in hospital emergency rooms and at hospital admissions desks, so that physicians and other health professionals can suit all their subsequent interventions to the individual's needs profile. [translation]

Consequently, the MSSS has addressed the secondary prevention of significant (i.e., moderate to serious) disabilities. What is needed is to intervene somewhat upstream of the development of various aspects of functional decline, even if the onset of disability itself has already begun. In a **population-based public health approach**, it is highly desirable to identify elders who are becoming disabled and prevent their condition from deteriorating. This gives rise to four questions: **what instrument to use, how to use it, where to use it, and what to do when individuals are identified as positive. The following sections of this chapter** seek to answer these questions. They present the PRISMA-7 instrument, statistics on its use, and areas for exploration and discussion relative to the implementation of a case-finding procedure.

## The instrument

Lacking a recognized instrument for case-finding significantly disabled elders, many clinicians have developed in-house instruments in their own work settings. These pinpoint the main and most common problems affecting the elderly, which are associated with disabilities. Often, these instruments contain questions on memory difficulties, medications, falls, and the need for house-keeping assistance.

It is often observed that these instruments gradually become longer over time. Questions are progressively added on nutrition, then mobility, because that is important too, and so on. All these questions are clinically relevant. Nevertheless, the moment comes when one must choose between a brief summary instrument that has been validated using a standard measure for disabilities and simply conducting an exhaustive disability assessment. When determining a person's disabilities entails answering an excessively time-consuming assemblage of questions, measuring the disabilities directly makes more sense. For mass case-finding, an instrument that is short, if possible simple, and validated (i.e., that has been shown to have reliable levels of sensitivity and specificity) is essential.

Existing studies on screening and case-finding among elders have mainly addressed general health problems, although they mention disabilities<sup>16, 17</sup>. To our knowledge, very few have actually used disabilities as a validity criterion<sup>10, 18-25</sup>. Some, it is true, present a procedure for detailed validation and information on sensitivity and specificity<sup>19-25</sup>. One study used very broad criteria (dependency on another person for a certain form of daily care a few times over the course of a year),<sup>22</sup> while another used a construct validity design<sup>19</sup>. One article describes an approach that is both prospective and prevalence based;<sup>21</sup> others offer a strictly prospective design;<sup>22-24</sup> still others present a prevalence measure alone<sup>20, 25</sup>.

The definition of disability must be specified. Attention to the activities of daily living (ADL) and instrumental activities of daily living, i.e., domestic activities (IADL), often obscures other dimensions of disability such as cognitive and mobility function, which merit more attention<sup>10, 23</sup>. Many authors agree on this point, yet very few studies report validation of a case-finding method that is sensitive to multi-dimensional disabilities. Only two articles<sup>20, 25</sup> report on a validation process that relied on a clinical instrument that measures disabilities in a multi-dimensional manner. (The instrument was the Functional Autonomy Measurement System (SMAF; French name *Système de mesure de l'autonomie fonctionnelle*)<sup>26</sup>. The first of these articles presents findings for an instrument intended for use in the ER<sup>20</sup>. Unfortunately, the instrument had a low sensitivity ( $\leq 60\%$ ) for at least one disability in each SMAF subgroup of items assessed. The second article<sup>25</sup> describes an instrument for identifying disabled elders (including the mildly disabled) that appears not to have seen use because it found too large a part of the aged population. Concentrating on moderate to severe disabilities seems to be more feasible and clinically realistic<sup>11, 12</sup>.

We developed PRISMA-7 to meet the need to identify moderately to severely disabled elders. We have published elsewhere a detailed account of how the instrument was developed<sup>27</sup>. Briefly, from an initial list of 21 yes/no questions, we identified the 7 that proved useful for identifying elders with a SMAF score of  $\leq -15$  (see Figure 22.1). SMAF is a clinical independence-measurement scale comprising 29 items that assess five dimensions of disability: ADL (7 items), communication (3 items), cognitive function (5 items), mobility (6 items), and IADL (8 items). Every item is scored from 0 (independent) to  $-3$  (dependent), and the maximum score is  $-87$ . We used clinical and epidemiological criteria<sup>1, 12, 28</sup> in arriving at a threshold of  $-15$  to distinguish mild disability from moderate to serious. It should be noted that, when it was developed, SMAF underwent in-depth validation<sup>26, 29-31</sup> and that, since 2002, it has been designated by the MSSS for clinician use across Quebec to measure the functional independence of the elderly. It is also being used increasingly abroad. Thus, in Quebec, when clinicians refer to a SMAF score of  $\leq -15$ , they are using a shared and familiar language.

Figure 22.1  
The Seven PRISMA-7 Questions

Question	Answer	
	Yes	No
1. Are you more than 85 years old ?	Yes	No
2. Male ?	Yes	No
3. In general, do you have any health problems that require you to limit your activities?	Yes	No
4. In general, do you have any health problems that require you to stay at home	Yes	No
5. Do you need someone to help you on a regular basis ?	Yes	No
6. In case of need, can you count on someone close to you?	Yes	No
7. Do you regularly use a cane, a walker or a wheelchair to move about?	Yes	No
<b>Number of Yes and No answers</b>		
	___	___

We validated PRISMA-7 by obtaining responses to it from 594 individuals aged 75 and over and living at home. The same individuals were then assessed with SMAF at home. The proportion who scored  $\leq -15$  was 19.4 %. These people belonged to the group we wished to identify with our case-finding instrument. Two PRISMA-7 threshold scores were highly interesting with respect to sensitivity and specificity. Table 22.1 presents our results for thresholds of three or more yes answers and four or more yes answers in responding to the PRISMA-7 questionnaire.

Table 22.1  
The PRISMA-7 Questionnaire’s Case-Finding Properties for Elders with a SMAF Score of  $\leq -15$ .

Critical Threshold	Positive Findings	Sensitivity	Specificity	Predictive Value	
				Positive	Negative
<b>3 or more yes answers</b>	35.5 %	78.3 %	74.7 %	42.7 %	93.5 %
<b>4 or more yes answers</b>	19.0 %	60.9 %	91.0 %	62.0 %	90.6 %

This combination of sensitivity and specificity makes the instrument extremely useful for public health purposes. The time needed to administer the questionnaire is minimal. Simple, rapid use of the instrument makes it possible



to conduct mass case-finding of prevalent significant disability. As well, PRISMA-7 has the advantage of circumventing the three factors identified at the start of this article as obstacles to awareness of disability. That is, it makes it possible to identify when full assessments are needed and thus avoid the time problem associated with trying to assessing *all* elders. As well, it was validated based on elders' own perceptions on one hand and a rigorous assessment of degree of disability on the other. Therefore, we know that it is not subject to distortion by users who under-assess their own disability problems. Finally, the instrument was not developed exclusively for research purposes, so its clinical usefulness is not just potential but actual, as will be seen in the following sections of this chapter.

### **How to use PRISMA-7**

Since PRISMA-7 consists of seven yes/no questions, it is comparatively simple to use. It is necessary merely to follow a few instructions, the main one being that the elder's answers must be considered correct. At the stage of collecting the yes/no answers, no clinical judgment must be made: The assessor is not called upon to determine the correctness of the answers. It should not be forgotten that when the instrument was developed, elders' own impressions were compared with a clinical assessment of degree of disability. To introduce answers other than the elders' own would skew the results. The instrument can be used by telephone, in written form, or in a face-to-face interview. A user guide has been developed and published in the form of a book chapter<sup>32</sup> available online free of charge at [www.usherbrooke.ca/prisma](http://www.usherbrooke.ca/prisma).

### **The Two Threshold Scores**

No case-finding instrument is 100 % sensitive and specific. It is always necessary to reach a compromise between the two parameters, depending on the problem to be detected. The two thresholds (three or more yes answers and four or more yes answers) presented in Table 22.1 represent attractive options. During implementation, some teams chose to start with the threshold of four or more yes answers and lowered it to three after the break-in period. It is up to decision-makers and clinicians to choose the preferred threshold according to their teams' processes for assessing new cases of age-related disability.

### **Approaches**

In this kind of mass case-finding, three approaches are possible. One can begin with an opportunistic approach that uses the elder's contacts with the health system to conduct case-finding (for example, at the single entry point, in the ER, at outpatient clinics, and in physician offices). It is also possible to take a systematic or quasi-systematic approach by administering the questionnaire to all elders during annual immunization campaigns (which reach a large proportion

of the elderly population) or during annual check-ups. The third approach is mixed, consisting of combining the first two to maximize the potential for detecting prevalent cases.

If the mixed case-finding approach is adopted, it is probable a significantly disabled elder will be identified more than once during different contacts with the system. An efficient online method of communication is clearly very valuable in this form of case-finding process. Depending on the point where an elder makes contact, access to clinical information about the person makes it possible to determine whether this is someone already known to the system, whether degree of disability has been recently assessed, and whether the person's condition has changed significantly since the last assessment. In this way, it is possible to decide whether case-finding is appropriate. In case of doubt, the questionnaire's minimal time requirement justifies administering it.

### **Where should the case-finding instrument be used?**

The first stage in deciding where the instrument should be used consists of identifying the points of entry into the health and social services system (for the opportunistic approach) and health events that bring together many elderly people and place them in regular contact with the system (for the systematic approach). For example, "dead time" users spend in waiting rooms could be put to good use. By targeting locations with a high level of attendance by elderly people, we maximize the potential for detecting significant disabilities.

The Sherbrooke area in the Quebec health region of Estrie has implemented the mixed case-finding approach for those aged 75 and over. PRISMA-7 is currently being implemented in most Quebec health regions, most commonly through the single entry point in local community service centers (CLSCs; French *centre local de services communautaires*) and in some ERs. We present below a few examples of the implementation of case-finding as carried out in Estrie. The region has a population of nearly 300 000, of whom 42 000 are aged 65 and over and nearly 22 000 are 75 and over.

### **Ongoing Experiences with PRISMA-7**

The instrument is receiving increasing use in numerous consulting venues and on different occasions. In Estrie, every CLSC territory has a single entry point for the intake and referral of elderly individuals, where referral based on PRISMA-7 is being progressively put into place. Most of the region's ERs, including those at the Coaticook hospital and Sherbrooke's university hospital (CHUS; *Centre hospitalier universitaire de Sherbrooke*), use PRISMA-7 for case-finding. The CHUS serves as the local hospital for the city of Sherbrooke (population about 150,000) and the Coaticook area (population about 16,000). It also has a mandate to the Estrie region as a whole and an extra-regional mandate for some kinds of specialized care. The CHUS's ER receives 10,000 visits per year by users aged 75 and over.

In Sherbrooke, PRISMA-7 is also administered during the annual influenza immunization campaigns for elders, which provide an exceptional opportunity to conduct quasi-systematic case-finding. As well, certain points of service delivery, for example the CHUS's surgical prep clinic (which gathers data prior to elective surgery, takes specimens, and prepares users for discharge from hospital), began implementing PRISMA-7 in 2006. Consideration is being given to administering PRISMA-7 in other outpatient clinics (e.g., the diabetes clinic), as well as in the waiting rooms of physicians with private offices. Nurses attached to family physician groups (GMFs; French *groupe de médecine de famille*) also refer elders found positive for disability by PRISMA-7 at the single entry point. This is also the case with the Centre de réadaptation Estrie (a generalist rehabilitation center that serves the whole region) and many providers of housekeeping services.

## Implementing the Case-Finding Process

### The Single Entry Point

Implementing a case-finding mechanism entailed considering the nature of the contacts that result in a CLSC assessment of degree of disability. Once PRISMA-7 has been administered, where will the information be compiled and which health or social service worker will be required to assess the elderly person who has been found positive for disability? When an elderly person comes into contact with the single entry point, the first step consists in determining if he or she is known to the system, being followed by home-support services, or has been recently assessed; if not, case-finding should be carried out. After three years of use of PRISMA-7, managers working in Sherbrooke deem case-finding to have been conducted with nearly 100 % of the target group.

### The Emergency Room

Case-finding was implemented in the CHUS's ERs following work on functionally declined elders conducted in the region. Consensus emerged regarding priorities, including screening and case-finding. A process of reflection set in motion by the work of the *Conseil consultatif national sur les urgences* (provincial committee on emergency departments), the problem of ER bottlenecks, and the high proportion of the elderly target group that visit ERs were all conducive to exploring new avenues. ER-based case-finding and referral to CLSCs appeared to be ready for testing.

Various factors influenced the implementation of case-finding in the CHUS's ERs. The commitment shown by the institution's management and the leadership role played by its department of nursing and service quality (DSIQ; French name *Direction des soins infirmiers et de la qualité*) definitely played a role. There was hesitation among ER nurses at the outset, but subsequently they gradually subscribed to the case-finding project. Concerns had had to do with

adding the case-finding process to ER protocols and the appropriateness of conducting this kind of case-finding in an emergency setting. During discussions, the questions raised focused in particular on how to proceed. With input from the DSIQ and the department of clinical operations and partnerships, the decision made was to include the PRISMA-7 questions in the internal-referral instrument, which facilitated the procedure. To monitor implementation, we tracked the extent to which the PRISMA-7 portion of the referral instrument was duly filled in.

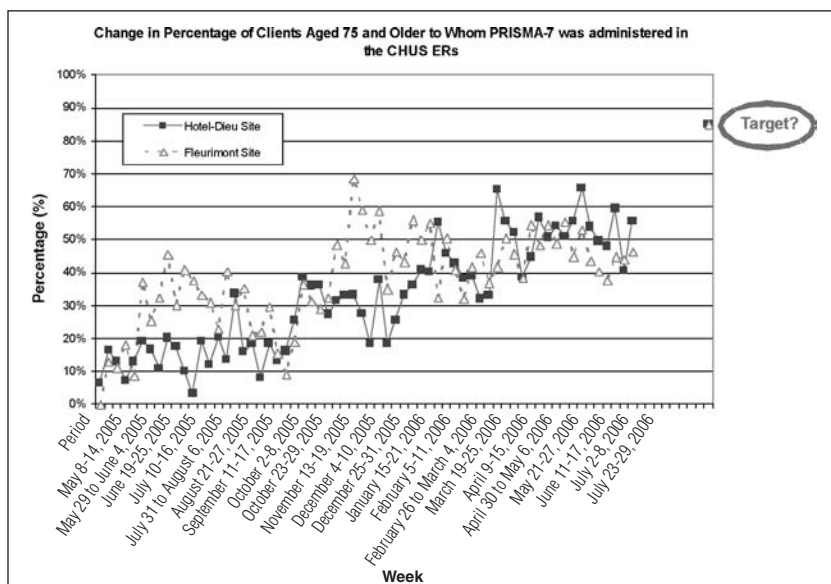
Use of PRISMA-7 was begun in the ERs of both CHUS facilities in May 2005. At the start, the case-finding was done on a proportion of 10 % to 20 % of the clients. This rose to between 50 % and 60 %, depending on the facility (see Graph 22.1). While use is slowly increasing at both facilities, it is continuous and incremental at one site, whereas more significant fluctuations are observed at the other. Case-finding at the latter sometimes reaches 70 % of the target group. The implementation percentage appeared to level off at around 50 % during summer 2006. Of course, summer is the peak time of year for vacations and there is accordingly a larger proportion of replacement staff in place.

What target percentage should be set for penetration with case-finding? Both objectively and clinically, the goal is not to reach 100 %. It is not only when an ER case consists of confirming death that case-finding is obviously inappropriate. It is equally so in cases of stroke or fractures of the lower extremities. After all, these necessarily bring about a drastic change in the patient's disabilities; and in any event, the patient is about to be hospitalized and will be assessed for disability. There are other circumstances under which case-finding cannot be conducted, such as following head injury or in cases of paranoid hallucinations, heart attack, and users with cognitive disorders (e.g., Alzheimer's) who arrive unaccompanied. The data examined during an average period in spring 2006 shows that 12 % to 15 % of consultations take place for the reasons listed above, which means the desired penetration rate should be set at 85 % of the whole target group. So, if 50 % of the entire target group for case-finding is currently being reached, it is reasonable to say that, in fact, we have reached 59 % (50/85) of the true target penetration level.

During the same period in spring 2006, we examined whether there were differences between users who were questioned with PRISMA-7 and those who were not. Our observations were that there is no statistical age-related difference, the average age being 82.5 for users who are questioned and 81.6 for users who are not ( $p = 0.198$ ). No sex-related difference emerges either; women represent 63.9 % of users questioned and 61.9 % of those not ( $p = 0.761$ ). Thus no difference is observable for these two variables, which are represented in PRISMA-7 by one question each. On the other hand, in practice, elderly ER users waiting on gurneys appear to be those for whom the most case-finding is done, seemingly because the user is present in the ER for a longer time.

Graph 22.1

**Change in Percentage of Clients Aged 75 and over to Whom PRISMA-7 was Administered in the CHUS ERs During the First 15 Months of Implementation**



As previously mentioned, to facilitate implementation in Sherbrooke, case-finding was progressively linked to the annual influenza immunization campaign. In fall 2003, individuals aged 85 and over were targeted in Sherbrooke. Since 2004, case-finding has been done on those aged 75 and over.

In the Estrie region as a whole, a trial was made of having meals-on-wheels volunteers perform case-finding. Positive findings were conveyed to the CLSC single entry point with the elderly person's signed consent. However, volunteers were uncomfortable conveying sensitive information about the degree of disability of people they saw only occasionally. For their part, the elderly individuals tended to hesitate to sign the consent form. In the end, this approach was ruled out.

During PRISMA-7's implementation in the Estrie region in various places and on various occasions, we observed markers of case-finding's arrival at a certain degree of maturity. The process can be considered to have been more or less implemented when two positives are obtained in different settings for the same individual, even before that person has been assessed. In fact, two positives (and not the PRISMA-7 score per se) constitute a reason to prioritize assessing an individual. Similarly, when the threshold of four or more yes answers is used, clinicians realize intuitively after a time that they are allowing certain prevalent cases to slip through the net. At that point, it is deemed necessary to change the threshold, going from four to three or more yes

answers. Specificity is reduced, but the instrument's sensitivity rises to 78 % (see Table 22.1).

### **What should be done with positives?**

When a person has been found positive for disability, what is the next step? The answer is simple: Proceed to an in-depth assessment of degree of disability and of the individual's bio-psycho-social circumstances; and, as needed, refer to appropriate service providers. Note that PRISMA-7 cannot serve as an instrument for prioritizing interventions. The assessment (which should follow a positive case-finding) determines what interventions are needed, while prioritization depends on other criteria, such as the seeming urgency of the interventions needed and the resources available.

When case-finding is done in the ER, who should conduct the subsequent disability assessment and where should it be done? Naturally, in a coordinated integrated services network, these questions have already been answered. The first step is to sketch a portrait of the region's existing logistics, the organizations in place, the services concerned, and the health or social services workers involved. Who is currently assessing individuals believed to be significantly disabled? Under what criteria is an individual currently referred for assessment? Is there a waiting list? Coordinated action among service providers, institutions, and health and social services workers makes it possible to organize the logistics of assessment, follow-up, and callback.

When a person is found positive for disability, whom should the information be conveyed to? In Quebec, the CLSC single entry point plays this role for a given district. In France, could a CLIC fill the role? The logistics of assessment must obviously be organized before case-finding is begun. For example, the CHUS plays the role of regional hospital for seven CLSC districts, including that of the city of Sherbrooke itself. When an individual is found positive by the questionnaire in the ER, the information is directed to the geriatric-team nurse. If the individual is hospitalized, assessment is usually conducted by the geriatrics team before discharge. If, however, a person found positive goes home immediately after consulting in the ER, the information is conveyed by secure e-mail to the appropriate CLSC's single entry point. This approach circumvents the problem of one person receiving the information during certain hours of the day, another person in the evenings, and still another during vacation time. The recipient is the single entry point, and the health and social services worker on duty sees that, over subsequent days, the CHUS gets feedback about whether the individual is already known to home-support services and what is going to be done for the person. (For known users recently assessed, there is follow-up. For known users whose assessment was not recent, there is an assessment. For users not known to the CLSC, there is an assessment.)

A question commonly asked when the instrument's implementation is being planned is the number of elders to be assessed. The concern is whether workers will be suddenly swamped with assessment requests. The experience in Estrie suggests that this is not the case, as may be seen from Graph 22.1. Gradual implementation allows for a break-in period for the assessment team. Obviously, however, changes in practice never occur without difficulties and the need for adjustment. These are inevitable companions of change.

## Conclusion

Case-finding requires that services be coordinated and integrated. Services integration itself requires case-finding, since not conducting case-finding merely postpones until a later date the handling of a problem that grows more serious in the meantime, calling for more time and energy with diminishing returns. When workers in a given territory coordinate their actions and see that nothing is to be gained by not dealing proactively with significant disability, a true population-based approach comes into effect. Such an approach ingrains a collective-responsibility approach, which consists of all parties working in their own fields and service areas while ensuring their work is linked to the efforts of others. Some authors integrate that service coordination, case-finding, and disability prevention are integral to the core values of geriatrics and, in fact, indicate where its future lies<sup>33, 34</sup>.

Following the implementation of RISPA in Estrie as part of the PRISMA study, significant effects were observed that could be attributed to the introduction of case-finding. The incidence of the development of functional decline went down by 14 % ( $p \leq 0.001$ ) during the fourth year the study was in place. This consequence was unexpected and coincided with introduction of the case-finding procedure, which had not been planned on when the project was begun and which is thus currently viewed as being the most likely reason for the 14 % reduction.

One thing is certain. In the settings where case-finding is being done, a comment workers often make is that case-finding prevents their being called on mainly in emergency situations and thus facing patients whose existing disability has just been intensified by an acute health episode or family caregivers presenting with significant burnout. Case-finding increases the leeway surrounding interventions. Workers who have experience with it would not go back to doing without it.

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## References

1. Hébert, R., Brayne, C., and Spiegelhalter, D. Incidence of functional decline and improvement in a community-dwelling, very elderly population. *Am J Epidemiol* 1997; 145: 935-44.
2. Colin, C., and Coutton, V. Le nombre de personnes âgées dépendantes d'après l'enquête handicaps-incapacités-dépendance. *Études et résultats – Direction de la recherche, des études, de l'évaluation et des statistiques*. Ministère de l'Emploi et de la solidarité de la France 2000; 94: 1-8.
3. Folstein, M.F., Folstein, S.E., and McHugh, P.R. Mini-Mental State: A practical method for grading the cognitive state of patients for the clinician. *J Psychiatr Res* 1975; 12:189-98.
4. Raïche, M., Hébert, R., Prince, F., and Corriveau, H. Screening older adults at risk of falling with the Tinetti balance scale. *Lancet* 2000; 356: 1001-2.
5. Payette H. Nutrition as a determinant of functional autonomy and quality of life in aging: A research program. *Can J Physiol Pharmacol* 2005; 83: 1061-70.
6. Recognising disability [Editorial]. *Lancet* 1991; 338: 154-5.
7. Ebrahim, S. Disability in older people: A mass problem requiring mass solutions. *Lancet* 1999; 353: 1990-2.
8. Stuck, A.E., Beck, J.C., and Egger, M. Preventing disability in elderly people. *Lancet* 2004; 364:1641-2.
9. Ferrucci, L., Guralnik, J.M., Studenski, S., et al. Designing randomized, controlled trials aimed at preventing or delaying functional decline and disability in frail, older persons: A consensus report. *J Am Geriatr Soc* 2004; 52: 625-34.
10. Kasper, J.D., Shapiro, S., Guralnik, J.M., Bandeen-Roche, K.J., and Fried, L.P. Designing a community study of moderately to severely disabled older women: The Women's Health and Aging Study. *Ann Epidemiol* 1999; 9: 498-507.
11. Hébert, R. and the PRISMA group. L'intégration des services aux personnes âgées: Une solution prometteuse aux problèmes de continuité. *Santé, société et solidarité – Revue de l'Observatoire franco-québécois de la santé et de la solidarité* 2003; special issue: 67-76.



12. **Hébert, R., Durand, P.J., Dubuc, N., Tourigny, A., and the PRISMA Group.** PRISMA: A new model of integrated service delivery for the frail older people in Canada. *International Journal of Integrated Care* (www.ijic.org) 2003; 3 (March): 1-10.
13. **Raïche, M. and Hébert, R.** Coordination des services aux personnes âgées en France et au Québec: Enjeux, expériences et champs de recherche traitant de leur évaluation. *Santé, société et solidarité – Revue de l’Observatoire franco-québécois de la santé et de la solidarité* 2003; special issue: 57-66.
14. **Muir Gray, J.A., Almind, G., Freer, C., and Warshaw, G.** Screening and case finding. In: Muir Gray JA, ed. *Prevention of disease in the elderly*. New York: Churchill Livingstone; 1985: 51-63.
15. **Ministère de la Santé et des Services Sociaux du Québec.** Plan d’action 2005-2010 – Un défi de solidarité: Les services aux aînés en perte d’autonomie. Québec: 2005. (<http://msssa4.msss.gouv.qc.ca/fr/document/publication.nsf/4b1768b3f849519c852568fd0061480d/28518fb11a0a47f7852570ab00546f83?OpenDocument>)
16. **Pathy, M.S., Bayer, A., Harding, K., and Dibble, A.** Randomised trial of case finding and surveillance of elderly people at home. *Lancet* 1992; 340: 890-3.
17. **Lachs, M.S., Feinstein, A.R., Cooney, L.M., Jr., et al.** A simple procedure for general screening for functional disability in elderly patients. *Ann Intern Med* 1990; 112: 699-706.
18. **Mateev, A., Gaspoz, J.M., Borst, F., Waldvogel, F., and Weber, D.** Use of a short-form screening procedure to detect unrecognized functional disability in the hospitalized elderly. *J Clin Epidemiol* 1998; 51: 309-14.
19. **Bowns, I., Challis, D., and Tong, M.S.** Case finding in elderly people: Validation of a postal questionnaire. *Brit J Gen Pract* 1991; 41: 100-4.
20. **McCusker, J., Bellavance, F., Cardin, S., and Trepanier, S.** Screening for geriatric problems in the emergency department: Reliability and validity. Identification of Seniors at Risk (ISAR) Steering Committee. *Acad Emerg Med* 1998; 5: 883-93.
21. **McCusker, J., Bellavance, F., Cardin, S., Trepanier, S., Verdon, J., and Ardman O.** Detection of older people at increased risk of adverse health outcomes after an emergency visit: The ISAR screening tool. *J Am Geriatr Soc* 1999; 47: 1229-37.
22. **Brody, K.K., Johnson, R.E., Ried, L.D., Carder, P.C., Perrin, N.** A comparison of two methods for identifying frail Medicare-aged persons. *J Am Geriatr Soc* 2002; 50: 562-9.

23. Hébert, R., Bravo, G., Korner-Bitensky, N., and Voyer L. Predictive validity of a postal questionnaire for screening community-dwelling elderly individuals at risk of functional decline. *Age Ageing* 1996; 25: 159-67.
24. Dendukuri, N., McCusker, J., and Belzile, E. The Identification of Seniors at Risk screening tool: Further evidence of concurrent and predictive validity. *J Am Geriatr Soc* 2004; 52: 290-6.
25. Hébert, R., Bravo, G., Korner-Bitensky, N., and Voyer L. Refusal and information bias associated with postal questionnaires and face-to-face interviews in very elderly subjects. *J Clin Epidemiol* 1996; 49: 373-81.
26. Hébert, R., Desrosiers, J., Dubuc, N., Tousignant, M., Guilbeault, J., and Pinsonnault, E. Le système de mesure de l'autonomie fonctionnelle (SMAF) – Mise au point. *Revue de gériatrie* 2003; 28: 323-336.
27. Raïche, M., Hébert, R., and Dubois, M-F. PRISMA-7: A case-finding tool to identify older adults with moderate to severe disabilities. Submitted.  
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28. Dubuc, N., Hébert, R., Desrosiers, J., Buteau, M., and Trottier, L. Disability-based classification system for older people in integrated long-term care services: The Iso-SMAF profiles. *Arch Gerontol Geriatr* 2006; 42: 191-206.
29. Hébert, R., Carrier, R., and Bilodeau A. Le système de mesure de l'autonomie fonctionnelle (SMAF). *Revue de gériatrie* 1988; 14: 161-167.
30. Desrosiers, J., Bravo, G., Hébert, R., and Dubuc, N. Reliability of the revised Functional Autonomy Measurement System (SMAF) for epidemiological research. *Age Ageing* 1995; 24: 402-6.
31. Hébert, R., Spiegelhalter, D, and Brayne, C. Setting the minimal metrically detectable change on disability rating scales. *Arch Phys Med Rehabil* 1997; 78: 1305-8.
32. Raïche, M., Hébert, R., Dubois, M.-F., and the PRISMA partners. User guide for the PRISMA-7 questionnaire to identify elderly people with severe loss of autonomy. In Hébert R, Tourigny A, Gagnon M. *Integrated service delivery to ensure persons' functional autonomy*. Québec, Edisem, 2005; pp. 147-165. ISBN 2-89130-204-4.
33. **American Geriatrics Society Core Writing Group of the Task Force on the Future of Geriatric Medicine.** Caring for older Americans: The future of geriatric medicine. *J Am Geriatr Soc* 2005; 53 Suppl 6:S245-S256.
34. Leichsenring, K. Developing integrated health and social care services for older persons in Europe. *International Journal of Integrated Care* (www.ijic.org) 2004; 4 (Sept.): 1-15.