

Frail elderly patients

New model for integrated service delivery

Réjean Hébert, MD, MPHIL Pierre J. Durand, MD, MSC Nicole Dubuc, PHD
André Tourigny, MD, MBA on behalf of the PRISMA Group

ABSTRACT

PROBLEM BEING ADDRESSED Given the complex needs of frail older people and the multiplicity of care providers and services, care for this clientele lacks continuity.

OBJECTIVE OF PROGRAM Integrated service delivery (ISD) systems have been developed to improve continuity and increase the efficacy and efficiency of services.

PROGRAM DESCRIPTION The Program of Research to Integrate Services for the Maintenance of Autonomy (PRISMA) is an innovative ISD model based on coordination. It includes coordination between decision makers and managers of different organizations and services; a single entry point; a case-management process; individualized service plans; a single assessment instrument based on clients' functional autonomy, coupled with a case-mix classification system; and a computerized clinical chart for communicating between institutions and professionals for client monitoring.

CONCLUSION Preliminary results on the efficacy of this model showed a decreased incidence of functional decline, a decreased burden for caregivers, and a smaller proportion of older people wishing to enter institutions.

RÉSUMÉ

PROBLÈME À L'ÉTUDE Défaut de continuité dans les soins des personnes âgées à risque, compte tenu de la multitude des dispensateurs de soins et des services offerts à cette clientèle.

OBJECTIF DU PROGRAMME Promouvoir la mise en place de réseaux intégrés de services (RIS) permettant d'améliorer la continuité des soins et l'efficacité et l'efficience des services.

DESCRIPTION DU PROGRAMME Le Programme de recherche sur l'intégration des services de maintien de l'autonomie (PRISMA) est un modèle de RIS innovateur basé sur la coordination. Il inclut une coordination entre les décideurs et les responsables des différentes organisations et différents services; un guichet d'entrée unique; un processus de gestion de cas; des plans de services individualisés; un outil d'évaluation unique basé sur l'autonomie fonctionnelle du client, couplé à un système de classification de patients; et un dossier médical informatisé facilitant la communication entre institutions et professionnels pour améliorer le suivi du patient.

CONCLUSION Une évaluation préliminaire de l'efficacité de ce modèle a montré une moindre incidence de déclin fonctionnels, une réduction de la tâche du personnel soignant et une moindre proportion de personnes âgées souhaitant être hébergés.

This article has been peer reviewed.

Cet article a fait l'objet d'une évaluation externe.

Can Fam Physician 2003;49:992-997.

Although the need for continuity applies to and is important for all health services, it is particularly necessary for frail older people. Many factors—demographic (accelerated aging of the population), social (breakup of families, children moving away to find work), economic (low-income women living alone), health (increased life expectancy, high incidence of disabilities), and financial (reduced health care budgets)—increase demand for services among these clients.

Functional decline increases need, among both dependent people and their families, for evaluation, treatment, rehabilitation, psychological and social support, help to remain at home, and temporary or permanent long-term care facilities.¹ These many needs can change quickly because of the biological, psychological, and social vulnerability of these frail clients. A range of resources and services involving numerous care providers and partners have been developed over the past 20 years in Canada to meet these needs.

Continuity-related problems, however, compromise both service accessibility and efficiency. Examples include multiple entry points, service

Drs Hébert, Durand, Dubuc, and Tourigny are part of the Program of Research to Integrate Services for the Maintenance of Autonomy Group. The PRISMA Group includes the following members. Réjean Hébert, MD, MPHIL; Nicole Dubuc, PHD; Danièle Blanchette, PHD; Gina Bravo, PHD; Martin Buteau, DHD; Johanne Desrosiers, OT, PHD; Marie-France Dubois, PHD; Maxime Gagnon, MSC; Linda Millette, MD MSC(C); Pascale Morin, RD, PHD; Michel Raïche, MSC; Michel Tousignant, PHT, PHD; Anne Veil, MSW; Alain Villeneuve, DBA (Research Centre on Aging, Sherbrooke). Pierre J. Durand, MD, MSC; André Tourigny, MD, MBA; Any Bussière, MPS; Diane Morin, RN, PHD; Daniel Pelletier, MPS; Line Robichaud OT, PHD; Louis Rochette, MSC; Michèle St-Pierre, PHD; Aline Vézina, PHD (Geriatric Research Team, Quebec City). Louis Demers, PHD; Michèle Houpert, MSC(C); Judith Lavoie, MSC (Télé-Université, Quebec City). Pierre Bergeron, MD, PHD; Philippe De Wals, MD, PHD (National Public Health Institute, Quebec). Anne Lemay, PHD (CHUM/Montreal University Health Centre, Montreal). Lysette Trahan, PHD (Quebec Ministry of Health and Social Services). Michèle Paradis, MSC (Quebec Regional Board). Linda Dieleman (Estrie Regional Board). Irma Clapperton, Jocelyn Lavallée; Éliane Lafleur, MBA (Laval Regional Board). Line Beauchesne, MSC; Lucie Bonin, MD MSC; Danièle Laurin, PHD; Hélaine-Annie Roy, MSW; (Mauricie-Centre-du-Québec Regional Board). Hung Nguyen (Montérégie Regional Board).

delivery influenced by resource contacted rather than patient's need, redundant evaluations not using standardized tools, inappropriate use of costly resources (eg, hospitals, emergency services), waiting time for services, inadequate transmission of information, and piecemeal response to needs.²⁻⁴ When resources are scarce and demand for services is increasing, it is essential to ensure that services meet patients' needs, without duplication and as efficiently as possible. Mechanisms and tools designed to improve continuity of care and services must be developed and a monitoring system established to respond to changes in demand for services.

Family physicians are key to providing health care to frail older people. Physicians have to communicate with many different organizations and health care professionals to arrange and maintain services for their patients. They often have to facilitate transitions between various settings (eg, hospital to home). Given the growing complexity of the health care system and the increasing importance of cost containment, this role of service broker and patient advocate is nearly impossible to maintain without structural changes in the system.

Integrated service delivery (ISD) programs have been developed to improve continuity and increase the efficiency of services, especially for older and disabled populations.⁵ Some aim simply at improving referral and transfer procedures between services (eg, hospital vs home care; hospital vs rehabilitation). Others are more complex, creating an organization responsible for offering all services to a certain group of people, usually operating with capitation budgeting and contracting arrangements for some specialized services (eg, nursing homes, hospital care). Some fully integrated organizations are constructed around a day-care centre like the California On Lok project⁶ that gave rise to the PACE (Program of All-inclusive Care for the Elderly) projects^{7,8} and the CHOICE (Comprehensive Home Option of Integrated Care for the Elderly) program in Edmonton, Alta.⁹ Others are constructed around home care similar to social health maintenance organizations in the United States¹⁰ and the SIPA (Système de services intégrés pour personnes âgées en perte d'autonomie) project in Montreal, Que.¹¹

Program objective

We have developed a model that could be more appropriate in the Canadian publicly funded health care system. The Program of Research to Integrate Services for the Maintenance of Autonomy (PRISMA) model

of ISD coordinates all organizations and services for frail older people in a given area.¹² Every organization keeps its own structure but agrees to participate in an umbrella system and to adapt its operations and resources to agreed-upon requirements. This model needs neither new infrastructure nor new financing mechanisms. As opposed to other models of full integration, this ISD system is not run in parallel with the regular health care system, but is embedded within it and includes all the organizations and services (public, private, voluntary).

Program description

The PRISMA model includes mechanisms and tools designed to improve continuity of care. The mechanisms refer to coordination between decision-makers and managers of organizations and services at the local level and to use of a single entry point, a case manager, and individualized service plans. The tools refer to a single assessment instrument coupled with a management system (case-mix) based on clients' functional autonomy and to an information system using computerized clinical charts (CCC) that can be accessed by institutions and clinicians for client monitoring. These tools not only facilitate delivery of services adapted to clients' needs but can also continuously monitor resources and manage the supply of services effectively and efficiently.

Coordination. Coordination between institutions is at the core of the PRISMA model. Coordination must be established at every level of organization. First, at the strategic level (governance), by creating a Joint Governing Board ("Table de concertation") of all health care and social service organizations and community agencies where decision makers agree on policies and orientation and what resources to allocate to the integrated system. A representative of the Regional Department of General Practitioners sits on this Board. Second, at the tactical level (management), a Service Coordination Committee, mandated by the Board and comprising public- and community-service representatives (including family physicians) and representatives of older people, monitors the service-coordination mechanism. Finally, at the operational level (clinical), the multidisciplinary team of care providers (led by the case manager) evaluates clients' needs and delivers the required care. Family physicians are important for their medical perspective.

Single entry point. The single entry point is the mechanism for accessing the services of all health

care institutions and community organizations in the area. It is a unique gate by which older people, family members, and professionals can access resources by telephone or written referral. A link is established with the Health Info Line available to Quebec patients 7 days a week, 24 hours a day. Clients are referred to the ISD system after a brief screening (triage) to ensure they meet the eligibility criteria for the integrated system (Table 1¹³). Otherwise, they are referred to the relevant service. Clients eligible for ISD are then assigned to a case manager. From previous work,¹⁴ we have developed a quick seven-question screening instrument (PRISMA-7) to identify clients with moderate-to-severe functional decline who would be eligible for ISD (Table 2). The sensitivity and specificity of the PRISMA-7 are 78% and 75%, respectively, for a cutoff of three or more positive answers, and 61% and 91%, respectively, for a cutoff of four or more positive answers. This screening tool is used for triage at any entry point.

Table 1. Admission criteria to an integrated service delivery system in Sherbrooke

- Older than 65 years
- Moderate-to-severe disabilities (SMAF score $\geq 15/87$)
- Good potential for staying at home
- Requires two or more health care or social services

SMAF—functional autonomy measurement system.¹³

Table 2. Screening instrument (PRISMA-7) for selecting clients eligible for the ISD system

CLIENT QUESTION	YES	NO
Are you older than 85 years?	<input type="checkbox"/>	<input type="checkbox"/>
Are you male?	<input type="checkbox"/>	<input type="checkbox"/>
In general, do you have any health problems that require you to limit your activities?	<input type="checkbox"/>	<input type="checkbox"/>
Do you need someone to help you regularly?	<input type="checkbox"/>	<input type="checkbox"/>
In general, do you have any health problems that require you to stay at home?	<input type="checkbox"/>	<input type="checkbox"/>
If you need help, can you count on someone close to you?	<input type="checkbox"/>	<input type="checkbox"/>
Do you regularly use a cane, a walker, or a wheelchair to move about?	<input type="checkbox"/>	<input type="checkbox"/>
TOTAL CHECKED		

Case manager. The case manager is responsible for thoroughly evaluating clients' needs, planning the required services, arranging to admit clients to these

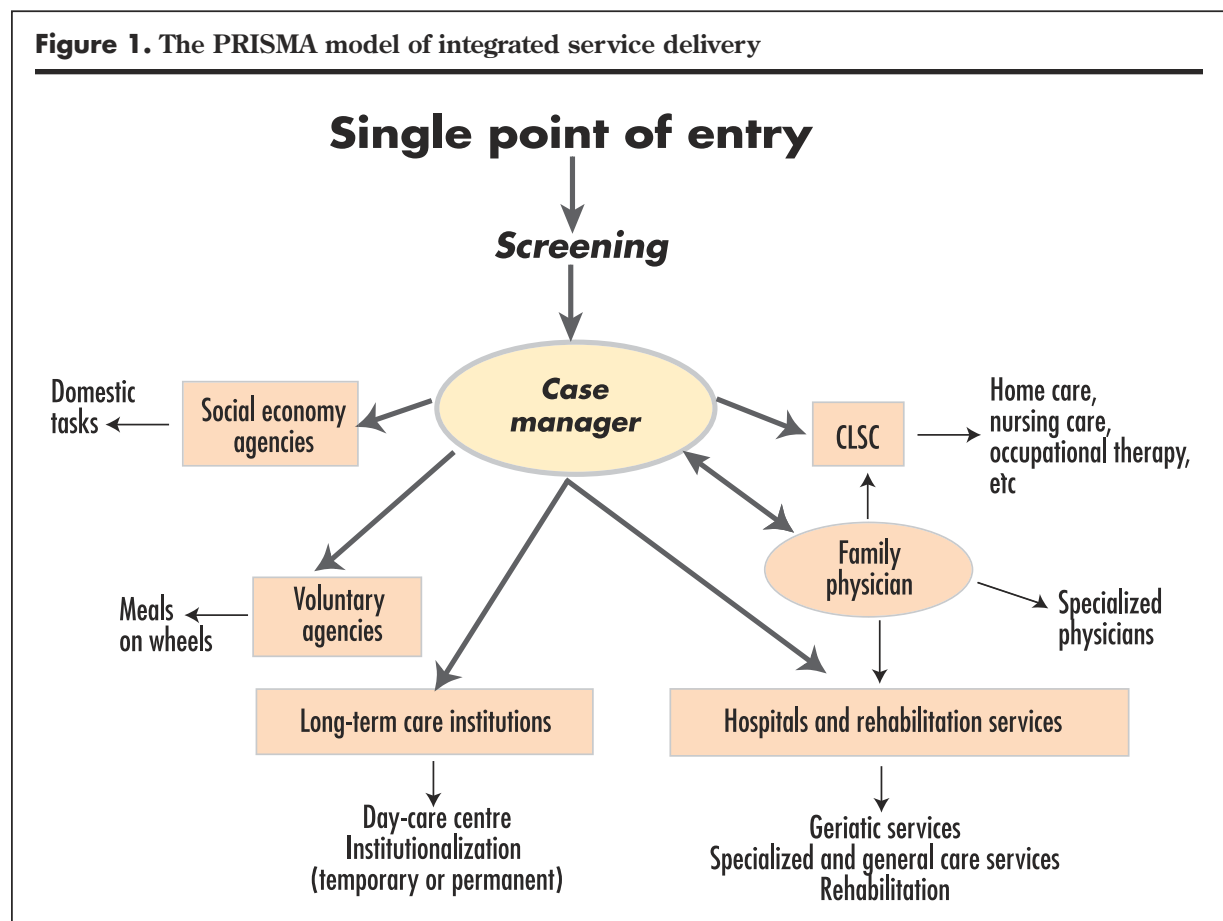
services, organizing and coordinating support, directing the multidisciplinary team involved in the case, and monitoring and reevaluating clients. In a randomized trial, Eggert et al¹⁵ showed that case management is more effective if case managers are not just service brokers but are also actively and directly involved in delivering services to clients in their areas of expertise. Case managers should be authorized to intervene in all institutions or services. Family physicians should be one of case managers' primary collaborators because, in addition to being the main medical care providers, they are pivotal for access to and coordination of specialized medical services. On the other hand, case managers relieve family physicians of some of their burden by facilitating access to and coordinating the rest of the social and health interventions. **Figure 1** illustrates a case manager's centrality to the network.

Individualized service plans. From overall assessment of patients, multidisciplinary teams develop individualized service plans, summarize prescribed services, and set goals. The case manager leads the team.

In services or programs where multidisciplinary meetings are already taking place, the case manager attends these meetings. The individualized service plan includes all interventions and must be reviewed periodically.

Single assessment instrument. The single assessment instrument is an essential element in this ISD model. The instrument must evaluate clients' basic needs and measure their disabilities, resources, and handicaps. The functional autonomy measurement system (SMAF) is a 29-item scale developed according to the WHO classification of disabilities.¹³ It measures functional ability in five areas: activities of daily living, mobility, communication, mental function, and instrumental activities of daily living. A case-mix classification system based on the SMAF has also been developed.¹⁶ Fourteen Iso-SMAF profiles were generated using cluster-analysis techniques in order to define groups that are homogeneous in their profiles, but different in other ways. These profiles are used to establish admission criteria to various institutions and services and to calculate the cost to institutions.¹⁷

Figure 1. The PRISMA model of integrated service delivery



Information system. Implementing an integrated system like this one requires computerized tools to facilitate communication and ensure continuity of services. Through a CCC, all care providers have quick access to complete, continuously updated information and can inform other care providers of clients' progress and changes in the plan. The CCC is part of the management system and thus provides an interface between clinical information and management information. A CCC called the SIGG ("Système d'information géronto-gériatrique") has been developed and implemented in a pilot project in Victoriaville, Que. This shared clinical chart can be accessed by all professionals providing services to older patients.

Evaluation

The PRISMA Group has implemented this model in two CLSC areas in the Mauricie/Central Quebec region (the Bois-Francs project). The purpose of this pilot project was to evaluate, using a quasi-experimental design, the implementation and effect of this model for community-living clients.¹⁸ Two cohorts of subjects in the study (n=272) and control (n=210) areas were followed and evaluated annually over 3 years (1997 to 2000). When mortality, institutionalization, and significant increase in disabilities (difference of 5 points or more on the SMAF scale) were combined, fewer people in the study group who had moderate-to-severe disability at entry experienced a functional decline. This effect was significant at 12 months (49% vs 31%; $P=.002$) and tended to remain at 24 months (36% vs 26%; $P=.066$). Desire to be institutionalized was positively and significantly modified in the experimental group at 12 and 24 months. Caregivers' burden was significantly lower in the study group than in the control group at 12 and 24 months. Use of acute care hospitals was similar. The risk of returning to the emergency room within 10 days after a first visit or after discharge from an acute care hospital was significantly greater in the control group. The risk of being institutionalized was greater in the control group (relative risk = 1.44; $P=.06$).

Discussion

Based on these preliminary results, the group is now extending this model to three CLSC areas in the Eastern Townships (one urban and two rural). Evaluation of the model uses an embedded multiple-case study design¹⁹ focusing on the process of implementing the mechanisms and tools and how they function. A specific longitudinal appraisal of how

Editor's key points

- The Program of Research to Integrate Services for the Maintenance of Autonomy (PRISMA) in Quebec is an example of an integrated service delivery (ISD) system that improves continuity of care for frail elderly patients in the most efficient manner.
- In contrast to other ISD systems, the PRISMA model allows individual organizations and services to continue to function independently, while providing the necessary integrated assessment and continuity of care.
- The key elements of PRISMA are coordination between decision makers; a single entry point; a case-management process; individualized service plans; a single, common assessment tool; and a computerized clinical record, accessible by all caregivers.
- Family physicians are better served by this system with easier access to and coordination of the many services their frail elderly patients require.

Points de repère du rédacteur

- Le Programme de recherche sur l'intégration des services de maintien de l'autonomie (PRISMA) développé au Québec est un modèle d'intégration des services qui assure une meilleure continuité des soins aux personnes âgées à risque et ce, de la façon la plus efficiente.
- Contrairement aux autres systèmes de RIS, PRISMA permet aux différents services et organisations de fonctionner indépendamment, tout en assurant la coordination nécessaire et la continuité des soins.
- Les éléments clés de PRISMA sont la coordination entre les décideurs; un guichet d'entrée unique; un processus de gestion de cas; des plans de services individualisés; un outil d'évaluation unique et commun; et un dossier médical informatisé accessible à tout le personnel soignant.
- Ce système est avantageux pour le médecin de famille puisqu'il facilite l'accès et la coordination des nombreux services que requièrent ses patients âgés à risque.

family physicians perceive the system and the case managers is included. Effectiveness is being evaluated using a quasi-experimental design. As opposed to the Bois-Francs pilot project, where efficacy was measured with service users as subjects, this study measures effectiveness with a sample of older

individuals “at risk” of using the services.²⁰ More than 400 subjects in the study areas will be compared with 400 subjects living in three comparison areas, selected for their similar demographic and health services characteristics. Variables measured are functional autonomy (SMAF), satisfaction with services received, client empowerment, caregivers’ burden, use of health and social services, and drug use. An economic analysis is also being performed.

Conclusion

The PRISMA is an innovative, coordinated ISD model. Because it is embedded within the health care and social services system, this model could be more appropriate to Canada’s universal and publicly funded health care system than the fully integrated models tested so far. It requires a shift, however, from the traditional institution-based approach to a client-centred approach and tremendous efforts to coordinate all levels of participating organizations. The ongoing study will show data on its effectiveness, effect on clients, and cost. ❁

Acknowledgment

The Program of Research to Integrate Services for the Maintenance of Autonomy (PRISMA) is a partnership between two research teams (Research Centre on Aging in Sherbrooke and Laval University’s Geriatric Research Team in Quebec city) and several health organizations in the province of Quebec: Ministry of Health and Social Services, five Regional Health and Social Services Boards (Estrie, Mauricie-Centre-du-Québec, Laval, Montérégie, Quebec city), and the Sherbrooke Geriatric University Institute. Funded by the Canadian Health Services Research Foundation, the Fonds de la recherche en santé du Québec (FRSQ), and the partnering organizations, PRISMA runs several projects that are also funded by the Canadian Institutes of Health Research.

Competing interests

None declared

Correspondence to: Dr R. Hébert, Scientific Director, Institute of Aging, 1036 Belvédère S, Sherbrooke, QC J1H 4C4; telephone (819) 821-5112; fax (819) 821-5205; e-mail Rejean.hebert@usherbrooke.ca

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