

SYNTHESIS REPORT

FINAL REPORT OF THE NATIONAL EVALUATION OF THE COST-EFFECTIVENESS OF HOME CARE

**A Report Prepared for the
Health Transition Fund, Health Canada**

August 2002



National Evaluation of the Cost-Effectiveness of Home Care



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August 2002



National Evaluation of the Cost-Effectiveness of Home Care



PREFACE

The National Evaluation of the Cost-Effectiveness of Home Care was an integrated program of research with 15 studies conducted across Canada. There was an overall strategy for the program of research to make it as useful to administrators and decision-makers as possible. The program of research was designed to determine whether or not home care is a cost-effective alternative to institutional care, that is, care in long term care facilities and acute care hospitals. However, the program of research was also designed to provide an educational function to inform decision-makers and the public about home care, and to provide advice about issues related to implementing new and cost-effective home care initiatives. Thus, the overall strategy had the following components:

- Conduct studies to determine whether or not home care is a cost-effective alternative to institutional care, and if so, under what conditions it is cost-effective.
- Conduct studies to inform decision-makers about the nature and scope of home care services across Canada. These studies provide a baseline of information about home care clients, costs, and utilization. This baseline is important because there is currently no national database on home care in Canada.
- Conduct studies to explore opportunities for potential savings in the hospital sector by substituting home care services. At present there are relatively few areas noted in the literature where home care has been shown to be a cost-effective alternative to hospital care.
- Conduct studies to provide decision-makers with information about some of the issues they may face if they try to implement new initiatives to enhance the cost-effectiveness of the health care system.

This report constitutes the final report of the National Evaluation. It is a synthesis report of key findings and implications for care providers, administrators, and policy-makers.

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EXECUTIVE SUMMARY

Introduction

In recent years, decision-makers across Canada have been closely scrutinizing the health care system with a view to reform. Fiscal pressures and changing demographics have led to concerns about the efficiency, effectiveness, and sustainability of the health care system. In order to provide evidence, in the Canadian context, on the relative cost-effectiveness of home care, the Health Transition Fund (HTF), Health Canada, supported a comprehensive national program of research to study this question. The National Evaluation of the Cost-Effectiveness of Home Care was an integrated program of research with 15 studies conducted across Canada.

The National Evaluation of the Cost-Effectiveness of Home Care had two major objectives:

- To directly evaluate the extent to which home care is a cost-effective substitute for care in long term care facilities, and under which conditions it is, or is not, a cost-effective alternative; and
- To directly evaluate the extent to which home care is a cost-effective substitute for acute care, and under which conditions it is, or is not, a cost-effective alternative.

Given that home care is a complex sector, it was determined that the range of questions to be addressed required a series of studies rather than one large study. Thus, each of the 15 studies in the program of research examined a particular issue or question related to the cost-effectiveness of home care and, as such, was like an individual piece of a larger puzzle. It was believed that the results of the 15 studies, when fitted together, would provide the beginnings of a picture of the cost-effectiveness of home care in Canada.

An Overview of Home Care Clients

At present, there is no national database on home care. Thus, as part of the National Evaluation, it was decided to obtain some representative data on home care clients in two provinces, British Columbia and Saskatchewan. Clients were studied for a one year period and were grouped into two categories: care episodes of 90 days or less and care episodes of 91 days or more. Overall, there were approximately 1.3 females for each male across the two jurisdictions. Saskatchewan had a slightly higher percentage of females than British Columbia (58.7% compared to 54.3%). The relative proportions of females to males were higher for the longer term clients (91 days or more) than for short stay clients in each jurisdiction (58.1% compared to 52.2% in British Columbia and 62.0% compared to 56.3% in Saskatchewan).

With regard to age, relatively few clients (17.1% in British Columbia and 15.8% in Saskatchewan) were under 45 years of age. In both jurisdictions, the concentration of clients in the 75 to 84 age group was higher in the long stay group and, overall, there were more elderly clients in the long stay group than in the short stay group. In British Columbia, 52.6% of clients in the long stay group were 75 years of age or older compared to 30.5% in the short stay group.

The comparable percentages for Saskatchewan were 60.9% and 37.6%, respectively.

The Cost-Effectiveness of Home Care Compared to Residential Care

Substudy 1 contributed a number of new findings which add to our knowledge and constitute significant inputs to evidence-based decision-making. It compared data on service utilization and the comparative costs to government of home care and residential care clients for four cohorts of clients, that is, all clients in British Columbia who had new assessments in the 1987/88, 1990/91, 1993/94 and 1996/97 fiscal years. Comparative data were analyzed by level of care, using the five point care level system used in British Columbia. The lowest level of care, representing persons with relatively moderate care needs, is Personal Care (PC). The three levels of care at the intermediate level of need are Intermediate Care 1 (IC1), Intermediate Care 2 (IC2), and Intermediate Care 3 (IC3). The highest level of care, for chronic care clients, is Extended Care (EC).

The key findings from Substudy 1 are presented below:

- **Home Care Costs Less Than Residential Care:** Costs for home care clients, by level of care, were some 40 to 75 percent of the costs of facility care, with PC and IC1 at about 40 percent, IC2 and IC3 at about two-thirds and EC at about three-quarters of the costs of facility clients.
- **Stable Home Care Clients Cost Considerably Less:** For home care clients who remain at the same level and type of care for six months or more, the costs are about one half, or less, of the overall costs for facility clients.
- **The Cost is in the Transitions:** For home care clients who changed their type and/or level of care, but did not die, costs were about 70 percent of the costs for facility clients for clients at PC and IC1 levels, about 80 to 90 percent for IC2 and IC3 clients and about 90 percent or more for EC clients.
- **Home Care for Those Who Die is Not Cost-Effective:** The costs for home care clients who die are generally higher, for all levels of care, than the costs for facility clients who die. The major cost factor for home care clients who die is the use of hospital services. The cost differential between home care clients and residential clients was smaller for the 1996/97 cohort.
- **The Cost of Home Care Services *Per Se* May Not Be the Major Cost Driver of Home Care:** The costs for home and community based continuing care services only (that is, professional care, home support workers, adult day care and assessors), are about 20 to 50 percent of the overall health costs of home care clients, across levels of care and cohorts. Costs for other health services such as hospitals, doctors, and drugs account for the rest of the health costs for home care clients.
- **The Use of Hospital Services for Home Care Clients is a Significant Cost Driver:** Hospital costs accounted for about 30 to 60 percent of the overall health costs for

home care clients, across levels of care and cohorts. The proportion of hospital costs compared to overall costs was lowest for stable clients and highest for clients who died.

- **Restraint in the Hospital Sector Appears to Have Reduced the Hospital Based Portion of Home Care Costs:** Hospital costs as a proportion of overall health costs for home care clients were reduced in the period of restraint in the mid-1990s. This may have occurred as it may have been more difficult for home care clients to be admitted to hospital during the restraint period. For example, for Extended Care clients, hospital care was 61% of total home care costs for the 1987/88 cohort and 33% for the 1996/97 cohort. The comparable figures for IC2 clients were 58% and 40% respectively.
- **Home Support Services Seem to Substitute for Acute Care Services:** While the proportion of overall home care costs attributable to hospital care declined in the mid-1990s, the proportion attributable to home support services increased. For Extended Care, the proportion of total health costs accounted for by home support and hospitals were 25% and 61%, respectively, for the 1987/88 cohort, while they were 54% and 33% for the 1996/97 cohort. The comparable figures for IC2 clients were 23% and 58% and 36% and 40%, respectively. Thus, home support may have served as a substitute for acute care services.

Table 1 provides a comparative analysis of home care and residential care, using care levels for British Columbia, across all four cohorts in Substudy 1, in 1996/97 dollars.

Table 1: Average Annual Costs of Home and Community Care, and Facility Care, for all Four Cohorts, in 1996/97 Dollars

| | | 1987/88 Cohort | | 1990/91 Cohort | | 1993/94 Cohort | | 1996/97 Cohort | |
|----------------------|------------------|----------------|-----------|----------------|-----------|----------------|-----------|----------------|-----------|
| | | Community | Facility | Community | Facility | Community | Facility | Community | Facility |
| All Costs (\$) | IC1 | 12,881.33 | 27,860.23 | 12,845.44 | 27,548.27 | 10,954.25 | 27,527.88 | 9,624.47 | 25,741.63 |
| | IC2 | 20,913.22 | 33,266.09 | 20,527.42 | 32,622.41 | 18,132.66 | 32,116.55 | 16,314.57 | 31,907.00 |
| | IC3 | 26,594.75 | 41,247.94 | 28,056.61 | 40,473.28 | 27,256.98 | 29,744.22 | 24,560.39 | 40,323.75 |
| | Extended Care | 36,421.53 | 44,490.06 | 43,188.28 | 43,911.59 | 36,697.13 | 44,002.56 | 34,858.63 | 44,233.41 |

While Substudy 1 provided a comprehensive analysis of the comparative costs to government, by level of care, it did not analyze data on the outcomes of care or the costs to informal care providers. These additional topics were covered in Substudy 5. Substudy 5 compared costs and outcomes in two sites: Victoria, British Columbia, and Winnipeg, Manitoba. We found that there were important differences between the sites so, rather than combining data from the two sites, we present data for each site separately. Substudy 5 can best be thought of as incorporating a site and a replication of the same study in another site. One important difference was that there were considerably more exceptions regarding high-care needs clients in the Winnipeg site compared to the Victoria site. The cut-off point that was used to separate exceptions from regular home care clients was 120 hours of home support service per month. In British Columbia this is the maximum number of hours allowed by policy for the highest level of

care (EC) clients. It is also a level at which home care costs became comparable to the costs of facility care. In Winnipeg, one can provide home care up to the equivalent cost of facility care.

With regard to outcomes, it was found that, comparing home care to residential care, there were similar levels of satisfaction in regard to the clients’ overall quality of life, satisfaction with life, and satisfaction with the services provided. This finding is consistent with the existing literature.

With regard to costs, it was found that home care costs are still significantly less, even using a societal perspective in which all costs are included, than residential care. However, this relative degree of cost-effectiveness is influenced by how the time of informal care providers is costed, for example, if professional rates of pay are used to cost the time of informal caregivers compared to other approaches such as using the minimum wage.

Table 2 provides data on the comparative costs of home care and residential care using a societal perspective and costing caregiver time at replacement wages.

Table 2: Average Annual Costs of Continuing Care Services, Physicians and Hospitals, Out-of-Pocket Expenses, and Informal Caregiver Time Valued at Replacement Wages (for Clients with up to 120 Hours per Month of Care Aide Time)⁺

| Care Level | | Victoria Sample | | Winnipeg Sample | |
|--|--------------------|-----------------|-------------|-----------------|-------------|
| | | Community | Facility | Community | Facility |
| Level A: Somewhat Independent | Mean | \$19,758.59 | \$39,255.44 | | |
| | Standard Deviation | \$11,590.57 | \$ 7,594.13 | | |
| | Number | 37 | 12 | | |
| Level B: Slightly Independent | Mean | \$30,975.22 | \$45,964.23 | \$27,313.02 | \$47,618.22 |
| | Standard Deviation | \$16,943.63 | \$12,566.70 | \$21,219.16 | \$19,486.61 |
| | Number | 23 | 42 | 14 | 11 |
| Level C: Slightly Dependent | Mean | \$31,847.92 | \$53,847.62 | \$29,094.46 | \$49,207.31 |
| | Standard Deviation | \$13,764.31 | \$17,417.82 | \$ 8,851.74 | \$13,805.44 |
| | Number | 12 | 50 | 10 | 37 |
| Level D: Somewhat Dependent | Mean | \$58,619.30 | \$66,310.18 | \$32,274.54 | \$45,636.77 |
| | Standard Deviation | \$25,473.65 | \$21,491.15 | \$ 9,200.12 | \$15,735.47 |
| | Number | 8 | 26 | 13 | 52 |
| Level E: Largely Dependent | Mean | | | \$35,113.75 | \$50,560.38 |
| | Standard Deviation | | | \$ 6,302.44 | \$17,196.53 |
| | Number | | | 4* | 29 |

⁺ Due to differences in the proportion of those receiving high levels of care across the two sites, outliers receiving more than 120 hours of care aid time were excluded from the analysis.

* Due to there being less than five cases in this cell, the statistical analysis for Winnipeg was based on Levels B-D only.

Thus, based on Substudies 1 and 5 there is fairly strong evidence that home care can be a cost-effective substitute for residential long term care.

We also tried to design our program of research in a way that would be useful to planners, analysts, administrators and decision-makers. Thus, we conducted two studies which would assist in planning for future resource allocation needs for continuing care services (i.e., home care, long term care, chronic care, and case management).

Substudy 2, based on British Columbia data, was designed to obtain information on the pattern of movement of clients through the system of care. It was found that there were no common patterns of care trajectories in home care. What was found, and is a significant new finding, is that for each of the 10 possible combinations based on the five levels of care, and the two types of care (community or residential), the most common pattern was for the client to come into that grouping and die (see Table 3). This may, in part, be due to the fact that people are often admitted to care in a state of crisis and, therefore, may be more likely to die.

Table 3: The Most Common Care Patterns by Type and Level of Care

| Level | Community/Died (%) | Facility/Died (%) |
|---------|--------------------|-------------------|
| 1 (PC) | 20.5 | N/A |
| 2 (IC1) | 29.3 | 35.5 |
| 3 (IC2) | 36.8 | 32.3 |
| 4 (IC3) | 40.8 | 53.2 |
| 5 (EC) | 54.0 | 92.3 |

Another important aspect of future planning and analysis relates to the comparative utilization of formal care and informal care. In Canada, informal support and formal care are seen as being complementary in that the government pays for needed services which cannot be provided by family members or other informal caregivers. Substudy 3, using data from Edmonton, found that formal paid services are, indeed, a complement to informal care. In fact, the substudy found that as care needs increased, clients were more likely to receive more formal care and more informal care. Overall, it was found that a \$1 increase in informal care (per day), when informal care is converted to dollar equivalents, resulted in a \$1.09 increase in formal costs. Conversely a \$1 per day increase in formal care resulted in a \$0.30 increase in informal costs. The comparative increases of the costs of formal and informal care, by level of care, are presented in Table 4.

Table 4: The Complementarity of Formal and Informal Care

| Level of Care | N | Increase in Formal Costs for a \$1 Increase in Informal Costs | Increases in Informal Costs for a \$1 Increase in Formal Costs |
|---------------|-------|---|--|
| A (low) | 1,564 | 1.17 | 0.51 |
| B | 1,827 | 1.30 | 0.54 |
| C | 655 | 1.08 | 0.31 |
| D | 395 | 0.74 | 0.24 |
| E | 356 | 0.80 | 0.16 |
| F | 134 | 0.66 | 0.10 |
| G (high) | 31 | 0.76 | 0.01 |

The findings from Substudies 2 and 3 should provide useful data for health planners and others doing future projections of care requirements in regard to care patterns and the role of informal care providers.

The Cost-Effectiveness of Home Care Compared to Acute Care

Intuitively, one would think that home care would be a cost-effective substitute for acute care services given that per diem hospital rates can average some \$500 or more. However, the findings in the scientific literature are mixed. The findings from the studies in our program of research also showed mixed results.

It appears that, due to the fiscal pressures on the health care system, hospitals have adapted quickly to seize opportunities for cost savings. Thus, it has been difficult for researchers to respond in a timely manner to be able to conduct studies when a new initiative is implemented. This dilemma is reflected in some of our studies regarding the cost-effectiveness of home care compared to acute care.

Substudy 14 was an evaluation of the Quick Response Program (QRP) of Saskatoon District Health. It was initially believed that not all potential clients would be evaluated by the QRP as it was not a 24/7 service, and that it would be possible to compare QRP clients with at least a modest number of similar clients who were admitted to hospital. However, since its inception in 1995, staff had increased the effectiveness of the QRP such that only two hospital admissions in Substudy 14 were actually deemed to be comparable to QRP clients in the study. Thus, it was not possible to do a comparative cost analysis with an appropriate sample size for the non-QRP group. However, it was found that the average cost in the community for clients in the QRP group for the 30 day period after visiting the Emergency Department was \$358 compared to an average of \$1,964 per client for the two people who were admitted to hospital.

Another example of changes at the front lines of health care is Substudy 12, which was conducted by a research team from the University of Toronto. It was designed to look at the cost-effectiveness of providing breastfeeding support for mothers with pre-term infants at home as compared to those who remained in the hospital and received breastfeeding support from the hospital lactation consultant. Initially, when the study was being designed, hospital length of stay data suggested that there may be a potential for reducing the hospital stay for mothers in the experimental groups by one day, and that the cost of that day should more than cover the additional costs of home care. However, mothers of pre-term infants in the experimental group, on average, only remained at hospital two hours less than mothers in the standard care group. Thus, there was no real substitution and, therefore, early discharge plus home care was not found to be cost-effective for mothers of pre-term infants.

Substudy 11, conducted by another research team from the University of Toronto, was a study of the cost-effectiveness of home care compared to hospital care for intravenous (IV) therapy for individuals with cellulitis. While reasonable care had been taken in designing the study and investigating its feasibility, once the study was underway researchers found that home care agencies did not have enough resources to take on a number of new clients for home IV therapy. This put pressure back on the hospital. The result was that emergency department

physicians started to provide IV therapy through emergency. Substudy 11 found that the cost of IV therapy was about twice as much for the inpatient hospital group compared to the home care/emergency department group. In addition, the quality of life was twice as good for the home care/emergency department group compared to the inpatient hospital group, and the home care/emergency department group had comparatively fewer complications and higher rates of resolution of the problem (i.e., higher rates of positive outcomes).

Substudy 9 addressed the question of whether care episodes that included both hospital and home care components cost less than care episodes, for similar people, that only included a hospital stay. It was based on administrative data for Alberta for all hospital admissions for the 1996/97 and 1997/98 fiscal years. While it was found that home care was cost-effective for a few types of clients, it was not cost-effective for the majority of clients. However, the research team took its analysis a step further and looked at the relative severity of the cases in the hospital only, and hospital plus home care, groups by analyzing the number of diagnoses per case as a measure of severity. They found that, on average, the clients who received hospital care plus home care had higher severity ratings than clients who only received hospital care. Apparently clinicians were able to make good clinical decisions about who should be discharged, and when, and were willing to discharge more complex cases to home care. In the absence of home care, such clients might have stayed in hospital for a longer period of time. Substudy 9 again demonstrates adjustments that were made on the front lines to increase efficiencies and the difficulties of determining if real efficiencies are actually achieved once changes have taken place.

Two studies were conducted on the cost-effectiveness of day hospitals. Substudies 10 and 13 used different, and relatively unique, approaches. The literature on the cost-effectiveness of day hospitals has, to date, been relatively weak. The problem has been that researchers have not been able to find appropriate comparison groups for people in day hospitals. Because of the problem of finding an appropriate comparison group, Substudy 13 took a broader, systems perspective for its analysis. The overall finding of the study was that the system of care worked reasonably effectively. It was found that persons admitted to each service component were different in regard to mental and physical health, daily functioning, and bodily pain. Substudy 10, conducted in Sherbrooke, Québec, took a new and innovative approach to studying the cost-effectiveness of day hospitals. It measured the level of functioning using the SMAF (Système de mesure de l'autonomie fonctionnelle) or Functional Autonomy Measurement System, the assessment tool for continuing care clients used in Québec. In previous research conducted by the same research team, they had been able to develop a formula for allocating dollar costs to SMAF scores. They found that for each dollar invested in caring for a person in the day hospital, there was a benefit of \$2.14. They concluded that the day hospital service was indeed cost-effective.

As noted above, findings regarding the cost-effectiveness of home care versus acute care are mixed. This may reflect reality or it may be the result of a lack of system integration, not evaluating new initiatives when they are implemented, and other factors.

Issues Related to Implementing Cost-Effective Programs

It was an intention of the National Evaluation of the Cost-Effectiveness of Home Care to provide assistance to administrators and policy makers in regard to issues they may face in

implementing new programs to increase the cost-effectiveness of the health care system. Substudy 6 provides information on key factors which facilitate the client's ability to remain in the community and factors which may lead to premature institutionalization. Substudy 15 provides information on the blockages to the effective transfer of clients from hospitals to home care and provides a listing of best practices to facilitate effective transfers. Substudy 8 demonstrates differences in clinical decisions across jurisdictions.

The purpose of the above three studies was to obtain information which could be used to provide practical advice to administrators who wish to implement new cost-effective programs. There are a number of useful lessons to be learned from Substudies 6, 8, and 15. Perhaps the first is the importance of an overall philosophy of enablement which should underlie policy formulation and practice. This philosophy should help care providers focus on the needs of clients and their families rather than on processing clients through the system. It should also ensure that adequate funding is obtained and that there are efforts to provide a range of needed services in an integrated system of care. That is, any new initiative should be considered in relation to the broader system of care.

Another lesson is that care providers may not always be consistent in how they do things. Thus, it will be important to build in monitoring of care patterns and inter-rater reliability of assessments and classification to ensure a consistency of practice, on an ongoing basis.

Ongoing and effective communication will be critical to gain acceptance for a new program both from care providers and from clients and their family members. One can expect resistance to new initiatives. Resistance may be based on a number of factors, but that portion which is based on a lack of understanding can be overcome by effective communication strategies.

It is also important to adequately resource new initiatives. A lack of adequate resources could lead to early failures from which it may be hard to recover. In addition, even good models, if they are not adequately resourced, can fail because they cannot function optimally if they are under resourced. Thus, failure may come about due to underfunding rather than due to the nature of the model which is implemented. However, in such cases the failure may be, incorrectly, attributed to the model itself.

Finally, it must be recognized that the main challenges of implementing new programs are often organizational and administrative rather than technical. Change is always difficult and often involves winners and losers. The skill of the administrator is critical in bringing about effective and positive change.

Policy Considerations

There are a number of important topic areas in regard to health services for elderly persons and those with disabilities that can be informed by the work conducted in the National Evaluation of the Cost-Effectiveness of Home Care either directly, based on the findings of the studies, or indirectly, based on issues the research team had to address in one form or another as part of their activities. The findings from the National Evaluation can thus provide useful input to

a range of key issues. The following are our suggestions about things which should be considered by clinicians, administrators and policy makers in order to improve the delivery of health services to seniors and persons with disabilities in Canada.

The emphasis on home care over the past several years has been useful in regard to promoting new research and focusing on the important role home care plays in the health care system. However, home care does not exist in isolation. Thus, the policy discourse should now shift from home care to the broader system of continuing care (home care, long term care, chronic care, and case management). In most jurisdictions, home care is already considered to be part of a broader system of continuing care and we believe that this existing approach to organizing health services should be supported and strengthened. By focusing on more integrated and coordinated models of care, one can consider policy issues from the broader perspective of the health care system rather than from the narrower perspective of one type of service. In addition, we believe that greater integration and coordination will make it easier to substitute home care services for residential services and acute care services.

As evidenced by Substudies 1, 2, 3, 7, and 9, policy-makers can learn a great deal simply by using data that already exist. Thus, the policy choice is to determine how to most effectively allocate information systems resources. In the systems field, high priority appears to be given to systems development, while systems maintenance and analysis appear to be a low priority. The unfortunate lack of priority on the use of existing data results in lost opportunities to provide better care to those in need through the use of good clinical information, and to provide decision-makers with relevant inputs into their decisions. Could not 10 to 15 percent of the dollars currently allocated to systems development and the information highway be re-allocated to provide timely, targeted and effective analysis of existing data to inform policy issues right now?

There has been considerable discussion about a National Home Care Program, but it has proven difficult to find appropriate approaches to enhancing home care services. If legislation is not possible, it may, nevertheless, be possible to obtain some degree of consensus, perhaps through the Social Union mechanism, on how to improve home care services. Some suggestions for consideration are the following:

- Moving all continuing care services into a universal, or modified universal, model of coverage. It may, for example, still be appropriate to charge user fees for the room and board portion of residential care because people are generally responsible for their own room and board charges. However, all home care services, including home support services could be paid for by government. Home support costs are already provided without co-payments in provinces such as Manitoba, Ontario and Québec.
- Enhancing the portability of continuing care services across Canada. Currently, most jurisdictions have some type of waiting period for residential services and some also have a waiting period for community based long term care services. Given the already existing financial burden on informal caregivers, policy-makers may wish to reconsider residency requirements for both residential care and home support services.

- Providing funding, as required, to redress the current anomaly of clients obtaining drugs for free in the hospital and having to pay for the same drugs in the community. It should be possible to establish methods of subsidizing drug costs for individuals in the community with a clearly identified need, as determined by an appropriate health professional.
- Determining the extent to which individual family members should be assisted in their efforts to care for their loved ones who suffer from functional deficits. What level of burden is appropriate for family members and at what point should government lend a hand to those in need? It may be appropriate, given the current pressures on home care, to provide some additional support to informal care providers through the tax system and/or by enhancing existing programs such as respite care.

One of the key, but counter-intuitive, findings from our program of research is that it may be possible to provide better care *and* save money. Initiatives to monitor and quickly re-stabilize clients result in better care than letting clients deteriorate over longer periods of time. As stable clients cost less, it may also save money. Home based palliative care allows clients to die in familiar surroundings with family and friends nearby. Provided the necessary supports are in place, palliative care should result in fewer trips to the hospital and save money. Respite care can allow families to care for their loved ones for longer periods of time before they are placed into long term care facilities, thus saving money. Step down care is less costly than hospital care and allows clients to recover to the point where they can go home rather than to a long term care facility. This too, in all likelihood, will save money.

Policy makers have a choice. They can focus on immediate cost reductions in home care (which may cause hardships and may even be more costly in the long run), or they can take a more strategic and longer term approach which can result in better care and save money.

Putting the Pieces Together

So, what kind of picture of home care has emerged from the 15 studies conducted for the National Evaluation of the Cost-Effectiveness of Home Care? It is clear that there are two types of home care: short term home care, often provided as a substitute or adjunct to hospital services; and longer term home care for people with ongoing care requirements. Short term home care clients generally receive a greater proportion of professional services such as home care nursing and, while somewhat older, are more like the general population. Long term home care clients receive mostly supportive services designed to assist them to function at an optimal level for as long as possible, and to reduce the rate of deterioration in their physical and mental functioning. They are generally older and poorer and the typical profile is a low income woman, living alone who is in her late 70s. Thus, home care is not only a substitute or adjunct to hospital services. There are large numbers of elderly people, some with extensive care needs, who are also supported by home care services. There are numerous policy implications related to the two types of home care, particularly around the need, and legitimacy, of non-professional supportive services and the role they should play in the broader health care system.

With regard to the cost-effectiveness of home care as a substitute for long term care facilities, there seems to be fairly solid evidence that home care can be a cost-effective substitute for residential long term care services. Thus, under the proper conditions, long term home care, particularly for people with higher care needs, appears to be a cost-effective substitute for residential care. This finding may be of relevance to decision-makers contemplating building new long term care beds. It may be that a mix of funding for both home care and residential care may be a more optimal approach.

Our research also indicates that family members and friends provide a significant measure of support, in cash and kind, to loved ones who receive home care, and to those who are in residential care. Thus, in many cases, the support of family and friends continues even after a person is placed into a long term care facility. Overall, in regard to home care, clients, family members and friends contribute, in cash and kind, resources that are equal to those provided by the state. This is in sharp contrast to the nearly 100% coverage by the state for hospital and medical services.

As noted, findings on the cost-effectiveness of home care compared to hospital care, primarily for short term home care clients, remains mixed. Intuitively one would assume that home care can be a cost-effective alternative to hospital care, however, demonstrating it scientifically seems to be more difficult. While we did have some positive findings in our studies, the overall results remain mixed. This may be because it is difficult to bring about cost-effective substitutions when home care and hospital care are not part of a larger, more integrated system of care in which substitutions can be realized through good coordination, planning, and/or management.

It appears from our findings that decision-makers can begin to consider adopting cost-effective new, or revised, programs for longer term home care clients, particularly in jurisdictions where these programs are both part of a larger, integrated care delivery system. In order to begin to implement cost-effective initiatives for shorter term home care clients an intermediate step of developing greater coordination and/or integration between home care and hospital care may be required before the efficiencies of substituting home care services for acute care services can be fully realized.

Thus, our findings seem to indicate that in integrated care delivery systems, home care has the potential to be a major force in increasing the cost-effectiveness of the overall health care system. In addition, our findings indicate that the assumption that providing better quality care will be more costly may not always be valid. Indeed, it may be possible to provide better care, at a lower cost, through innovative home care programs.

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1. INTRODUCTION

1.1 The Health Transition Fund

In recent years, decision-makers across Canada have been closely scrutinizing the health care system with a view to reform. Fiscal pressures and changing demographics have led to concerns about the efficiency, effectiveness, and sustainability of the health care system. Within this context, there is a need for information about which approaches and models of health care are working and which are not. In response to this requirement for evidence, and on the recommendation of the National Forum on Health, the Health Transition Fund (HTF) was created out of the 1997 federal budget to encourage and support evidence-based decision-making in health care reform.

The Health Transition Fund was a joint effort between federal, provincial, and territorial governments. Decisions about funding provincial and territorial pilot and evaluation projects were made bilaterally by the appropriate province or territory and the federal government. National projects were chosen through a multilateral selection process by the Federal/Provincial/Territorial Working Group on the Health Transition Fund (FPTWG), which had one representative from each of the provincial, territorial, and federal governments. The operation of the HTF was overseen by the FPTWG and executed by the HTF Secretariat.

Approximately 140 different pilot projects and/or evaluation studies were funded by the HTF for a total cost of some \$150 million. Of that, \$120 million was used to fund provincially and territorially sponsored projects, and the remaining \$30 million funded national level initiatives. These projects fell into one of four theme areas: home care, pharmacare, integrated service delivery, and primary care/primary health care.

1.2 Home Care

Health reforms and the ongoing fiscal restraint of the 1990s have led planners and policy-makers to focus on home and community based services as alternatives to institutional care. Home care has come to be seen as a vehicle for achieving policy goals, by providing services “closer to home,” and efficiency goals, by lowering costs. National, provincial, and territorial governments, and regional health authorities, recognize the importance of the role home care plays in our health care system.

Health Canada has estimated that public home care expenditures were \$2.1 billion, or 4% of public expenditures on health care, in the 1997/98 fiscal year. While the growth in the institutional sector was generally restrained in the 1990s, expenditures on home care grew at almost 11% per year from the 1990/91 fiscal year to the 1997/98 fiscal year.¹ The amount spent on home care by private individuals needing care, and by their families, is not known at this time but is believed to be substantial.

¹ Health Canada, Policy and Consultation Branch. (1998). *Public Home Care Expenditures in Canada 1975-76 to 1997-98* (Fact Sheets, March). Ottawa: Minister of Public Works and Government Services.

The move to home care has, in part, been a response to the anticipated growth in the population of seniors and to the fiscal pressures of the 1990s. Until recently there has been relatively little information on the cost-effectiveness of home care in Canada. There has been a prevalent assumption that home care is not only cheaper than institutional care, but also offers the client care that is just as good, if not better. However, this assumption has not been validated by scientific study, so one could characterize the move to home care in Canada as occurring due to faith in home care's efficacy and the necessity of restraint.

The international literature on the cost-effectiveness of home care shows mixed results. Some researchers have reported that home care is cost-effective compared to acute care; others have reported that it is not. There is also considerable literature in the United States which argues that home care is not a cost-effective alternative to care in long term care facilities.² However, some Canadian writers have argued that home care may be a cost-effective alternative to residential care in a Canadian model of service delivery.³ Thus, the issue of whether or not home care is a cost-effective alternative to institutional care has been an open question.

The term *home care* is generally used to refer to services provided in the home or in the community to individuals with functional disabilities and to their families. These services can range from home support, such as a few hours per week of simple housekeeping, to full nursing and medical care, such as administering intravenous medications which was previously done only in hospitals. Home care is also provided on a short term basis to assist people who are discharged from acute care hospitals. In addition, home care can provide palliative care, respite care, and other related services to those in need.

In Canada, home care is often divided into the following three functions:

- The maintenance and preventive function, which serves people with health and/or functional deficits in the home setting, both maintaining their ability to live independently and, in many cases, preventing health and functional breakdowns, and eventual institutionalization;
- The long term care substitution function, where home care meets the needs of people who would otherwise require institutionalization; and
- The acute care substitution function, where home care meets the needs of people who would otherwise have to remain in, or enter, acute care facilities.⁴

² Weissert, W.G. (1985). Seven reasons why it is so difficult to make community-based long-term care cost-effective. *Health Services Research*, 20(4), 423-433.

³ Hollander, M.J. (1994). *The costs, and cost-effectiveness, of continuing care services in Canada*. Ottawa: Queen's-University of Ottawa Economic Projects--Working Paper No. 94-10.

⁴ Adapted from: Federal/Provincial/Territorial Subcommittee on Long Term Care. (1990). *Report on home care*. Ottawa: Health and Welfare Canada, p. v.

In Canada, formal home care is paid for by government and/or individuals and comprises a range of services, such as: case management; professional services provided in the home, such as nursing and rehabilitation; supportive non-professional services provided in the home; and community based services such as adult day care services. An important aspect of home care is the care provided by friends and family members on an unpaid basis. In this report, this type of care will be referred to as *informal support*, and family members and friends will be referred to as *informal caregivers*.

Home care is generally considered to be part of a broader system of care. While in Ontario this system is referred to as long term care, in the West and Atlantic Canada it is usually referred to as continuing care and includes case management, professional home care services, home support services, community based services, long term residential services (including chronic care) and speciality services provided in acute care hospitals (e.g., geriatric units, day hospitals). Continuing care is not a type of service such as hospital care or physician services but is a complex *system of service delivery*. This system has a wide range of components and is integrated conceptually, as well as in practice, through a *continuum of care*. The efficiency and effectiveness of the system depends not only on the efficiency and effectiveness of each component, but also on the way the service delivery system itself is structured:

It is important to remember that *continuing care is not a type of service, but a system of service delivery* (emphasis in original).⁵

In regard to institutional care, it should be noted that home care can only be cost-effective to the extent that it serves as a lower cost substitute for residential services or acute care services. Substitutions are more easily made in an integrated system of care in which management has the authority to make such decisions. There is also some emerging evidence that preventive home care can be cost-effective in maintaining clients at their optimal level of care.⁶

Home and community based services are an important and integral part of the continuing care system along with residential services and specialty services in acute care hospitals. It is important to note that home care and continuing care services are an amalgamation of both health services (e.g., nurses, rehabilitation specialists, geriatricians) and supportive care services (e.g., homemakers, adult day care services, meal programs, long term care facilities) which originated in ministries of social services and, in most jurisdictions, were transferred into ministries of health, starting in the 1970s.

1.3 The National Evaluation of the Cost-Effectiveness of Home Care

In order to provide evidence, in the Canadian context, on the relative cost-effectiveness of home care, the Health Transition Fund (HTF) supported a comprehensive national program of research to study this question. The National Evaluation of the Cost-Effectiveness of Home Care

⁵ Federal/Provincial/Territorial Subcommittee on Continuing Care (1992). *Future directions in continuing care*. Ottawa: Health and Welfare Canada, p. 3.

⁶ Hollander, M.J. (2001). *Evaluation of the maintenance and preventive function of home care*. Victoria: Hollander Analytical Services Ltd.

provides critical new information to policy makers about the cost-effectiveness of home care in Canada. It had a budget of \$1.5 million and was comprised of 15 interrelated substudies, six on the cost-effectiveness of home care compared to long term care facilities and nine on the cost-effectiveness of home care as an alternative to care in acute care hospitals. Each substudy examined a particular issue or question and, as such, was like an individual piece of a larger puzzle. The results of the 15 studies, when fitted together, provide the beginnings of a picture of the cost-effectiveness of home care in Canada. We did not include studies on the cost-effectiveness of the maintenance and preventive model of home care in the National Evaluation as this topic was being addressed by other researchers.

Our program of research had two major objectives:

- To directly evaluate the extent to which home care is a cost-effective substitute for care in long term care facilities, and under which conditions it is, or is not, a cost-effective alternative; and
- To directly evaluate the extent to which home care is a cost-effective substitute for acute care, and under which conditions it is, or is not, a cost-effective alternative.

An overall strategy guided the selection of studies for the National Evaluation of the Cost-Effectiveness of Home Care. The program of research was focussed on providing decision-makers with relevant data which they could use for policy and program development. The overall strategy had the following components:

- Conduct research to inform decision-makers about the nature and scope of home care services and to provide a baseline of information about home care clients, costs, and utilization. This baseline is important because there is currently no national database on home care in Canada.
- Conduct research to determine whether or not home care is a cost-effective alternative to institutional care in long term care facilities and hospitals and, if so, under what conditions it is cost-effective.
- Conduct exploratory research to identify new opportunities for potential savings in the hospital sector by substituting home care services. At present, there are relatively few areas noted in the literature where cost-effectiveness studies have been conducted.
- Conduct research to provide decision-makers with information about some of the issues they may face if they try to implement new initiatives to enhance the cost-effectiveness of the health care system.

The National Evaluation of the Cost-Effectiveness of Home Care was designed to be a program of applied, policy-relevant research. We believed that this approach would provide significant efficiencies in terms of costs and timeliness over the more traditional approach of conducting a series of discrete studies in a linear sequence. Our project has raised further

questions and, thus, should be seen as the beginning, rather than the end, of Canadian research on the cost-effectiveness of home care.

A list of the 15 substudies which constituted the National Evaluation of the Cost-Effectiveness of Home Care is presented in the Appendix. In this document, we shall refer to the studies by their respective numbers (e.g., Substudy 1).

2. AN OVERVIEW OF HOME CARE CLIENTS

At present, there is no national database on home care. Thus, as part of the National Evaluation, it was decided to obtain some representative data on home care clients. This chapter provides a brief overview of data on the characteristics of home care clients in two provinces, British Columbia and Saskatchewan.

Tables 1 and 2 provide a breakdown by gender and age for home care clients in British Columbia and Saskatchewan, calculated on the basis of care episodes for a one year period. There was a small proportion of clients who had more than one episode. Thus, it was not feasible to present gender and age data by individual client as individuals could have been in two categories, that is, care episodes of 90 days or less and episodes of 91 days or more. Overall, there were approximately 1.3 females for each male across the two jurisdictions. Saskatchewan had a slightly higher percentage of females than British Columbia (58.7% compared to 54.3%). The relative proportions of females to males were higher for the longer term clients (91 days or more) than for short stay clients in each jurisdiction (58.1% compared to 52.2% in British Columbia and 62.0% compared to 56.3% in Saskatchewan).

Table 1: Home Care Clients by Location, Length of Stay, and Gender

| Gender | | British Columbia | | | Saskatchewan | | |
|--------|---------|------------------|-----------------|---------|-----------------|-----------------|--------|
| | | 90 days or less | 91 days or more | Total | 90 days or less | 91 days or more | Total |
| Female | Number | 10,936 | 7,024 | 17,960 | 4,146 | 3,259 | 7,405 |
| | Percent | 52.2 | 58.1 | 54.3 | 56.3 | 62.0 | 58.7 |
| Male | Number | 10,025 | 5,066 | 15,091 | 3,222 | 1,996 | 5,218 |
| | Percent | 47.8 | 41.9 | 45.7 | 43.7 | 38.0 | 41.3 |
| Total | Number | 20,961 | 12,090 | 33,051* | 7,368 | 5,255 | 12,623 |

* The overall total was 33,053, however data on gender were missing for two people, bringing the overall total down to 33,051.

With regard to age, the highest proportion of home care clients in British Columbia and Saskatchewan were in the 75 to 84 years of age group at 27.9% and 32.0% respectively. Relatively few clients (17.1% in British Columbia and 15.8% in Saskatchewan) were under 45 years of age. In both jurisdictions, the concentration of clients in the 75 to 84 age group was higher in the long stay group and, overall, there were more elderly clients in the long stay group than in the short stay group. For example, in British Columbia, 52.6% of clients in the long stay group were 75 years of age or older compared to 30.5% in the short stay group. The comparable percentages for Saskatchewan were 60.9% and 37.6%, respectively.

Table 2: Home Care Clients by Location, Length of Stay, and Age Group

| Age Group | | British Columbia | | | Saskatchewan | | |
|--------------------|---------|------------------|-----------------|--------|-----------------|-----------------|--------|
| | | 90 days or less | 91 days or more | Total | 90 days or less | 91 days or more | Total |
| 0 to 19 years | Number | 931 | 137 | 1,068 | 336 | 81 | 417 |
| | Percent | 4.4 | 1.1 | 3.2 | 4.6 | 1.5 | 3.3 |
| 20 to 44 years | Number | 3,626 | 959 | 4,585 | 1,313 | 258 | 1,571 |
| | Percent | 17.3 | 7.9 | 13.9 | 17.8 | 4.9 | 12.5 |
| 45 to 64 years | Number | 5,162 | 2,065 | 7,227 | 1,420 | 636 | 2,056 |
| | Percent | 24.6 | 17.1 | 21.9 | 19.3 | 12.1 | 16.3 |
| 65 to 74 years | Number | 4,843 | 2,570 | 7,413 | 1,535 | 1,082 | 2,617 |
| | Percent | 23.1 | 21.3 | 22.4 | 20.8 | 20.6 | 20.7 |
| 75 to 84 years | Number | 4,862 | 4,362 | 9,224 | 1,950 | 2,090 | 4,040 |
| | Percent | 23.2 | 36.1 | 27.9 | 26.5 | 39.8 | 32.0 |
| 85 years and older | Number | 1,539 | 1,997 | 3,536 | 814 | 1,108 | 1,922 |
| | Percent | 7.3 | 16.5 | 10.7 | 11.1 | 21.1 | 15.2 |
| Total | Number | 20,963 | 12,090 | 33,053 | 7,368 | 5,255 | 12,623 |

A picture of clients emerges from the above data which reflects a number of key issues in home care. Overall, there are clear differences between clients who receive short term home care (90 days or less) and those who have ongoing care requirements (91 days or more). Those who receive short term home care are often clients who receive post-acute care, for example four post-surgical nursing visits over a three week period after discharge from the hospital. Thus, these clients are more like the general population when compared to home care clients who require ongoing care, that is, there is a more even distribution of males and females and a higher proportion of persons in the general adult population (e.g., 42% of short term home care clients compared to 25% of long stay clients in British Columbia were aged 20 to 64).

It is also important to note that overall, and particularly for long stay clients, home care clients tend to be elderly females. Overall, of the long stay clients, some 60% were females and over three quarters were 65 years of age or older. It is, nevertheless, important to stress that home care is provided to people of all ages, however, seniors seem to need these services in greater proportions.

3. THE COST-EFFECTIVENESS OF HOME CARE COMPARED TO RESIDENTIAL CARE

Three studies were conducted on the cost-effectiveness of home care compared to residential care. Studies of relevance to planning and estimating the relative costs of future services were also conducted.

3.1 Studies on Cost-Effectiveness

There were three substudies on the cost-effectiveness of home care as a substitute for residential care. Substudy 1 presents a comprehensive analysis of the comparative costs, to government, of home care and residential care. Substudy 5 provides data on the cost to

government, and on the costs for out-of-pocket expenses and time devoted to caring by informal care providers. Substudy 4 was a pilot study to facilitate the conduct of Substudy 5.

Substudy 1 contributed a number of new findings which add to our knowledge and constitute significant inputs to evidence-based decision-making. It compared data on service utilization and the comparative costs to government of home care and residential care clients for four cohorts of clients, that is, all clients in British Columbia who had new assessments in the 1987/88, 1990/91, 1993/94 and 1996/97 fiscal years. Comparative data were analyzed by level of care, using the five point care level system used in British Columbia. The lowest level of care, representing persons with relatively modest care needs, is Personal Care (PC). The three levels of care at the intermediate level of need are Intermediate Care 1 (IC1), Intermediate Care 2 (IC2), and Intermediate Care 3 (IC3). The highest level of care, for chronic care clients, is Extended Care (EC).

The key findings from Substudy 1 are presented below:

- **Home Care Costs Less Than Residential Care:** Costs for home care clients, by level of care, were some 40 to 75 percent of the costs of facility care, with PC and IC1 at about 40 percent, IC2 and IC3 at about two-thirds and EC at about three-quarters of the costs of facility clients.
- **Stable Home Care Clients Cost Considerably Less:** For home care clients who remain at the same level and type of care for six months or more, the costs are about one half, or less, of the overall costs for facility clients.
- **The Cost is in the Transitions:** For home care clients who changed their type and/or level of care, but did not die, costs were about 70 percent of the costs for facility clients for clients at PC and IC1 levels, about 80 to 90 percent for IC2 and IC3 clients and about 90 percent or more for EC clients.
- **Home Care for Those Who Die is Not Cost-Effective:** The costs for home care clients who die are generally higher, for all levels of care, than the costs for facility clients who die. The major cost factor for home care clients who die is the use of hospital services. The cost differential between home care clients and residential clients was smaller for the 1996/97 cohort.
- **The Cost of Home Care Services *Per Se* May Not Be the Major Cost Driver of Home Care:** The costs for home and community based continuing care services only (that is, professional care, home support workers, adult day care and assessors), are about 20 to 50 percent of the overall health costs of home care clients, across levels of care and cohorts. Costs for other health services such as hospitals, doctors and drugs account for the rest of the health costs for home care clients.
- **The Use of Hospital Services for Home Care Clients is a Significant Cost Driver:** Hospital costs accounted for about 30 to 60 percent of the overall health costs for

home care clients, across levels of care and cohorts. The proportion of hospital costs compared to overall costs was lowest for stable clients and highest for clients who died.

- Restraint in the Hospital Sector Appears to Have Reduced the Hospital Based Portion of Home Care Costs:** Hospital costs as a proportion of overall health costs for home care clients were reduced in the period of restraint in the mid-1990s. This may have occurred as it may have been more difficult for home care clients to be admitted to hospital during the restraint period. For example, for Extended Care clients, hospital care was 61% of total home care costs for the 1987/88 cohort and 33% for the 1996/97 cohort. The comparable figures for IC2 clients were 58% and 40% respectively.
- Home Support Services Seem to Substitute for Acute Care Services:** While the proportion of overall home care costs attributable to hospital care declined in the mid-1990s, the proportion attributable to home support services increased. For Extended Care, the proportion of total health costs accounted for by home support and hospitals were 25% and 61% respectively for the 1987/88 cohort, while they were 54% and 33% for the 1996/97 cohort. The comparable figures for IC2 clients were 23% and 50% and 36% and 40% respectively. Thus, home support may have served as a substitute for acute care services.

Table 3 provides a comparative analysis of the overall costs for home care and residential care across all four cohorts in Substudy 1, in 1996/97 dollars.

Table 3: Average Annual Costs of Home and Community Care, and Facility Care, for all Four Cohorts, in 1996/97 Dollars

| | | 1987/88 Cohort | | 1990/91 Cohort | | 1993/94 Cohort | | 1996/97 Cohort | |
|----------------------|------------------|----------------|-----------|----------------|-----------|----------------|-----------|----------------|-----------|
| | | Community | Facility | Community | Facility | Community | Facility | Community | Facility |
| All Costs (\$) | IC1 | 12,881.33 | 27,860.23 | 12,845.44 | 27,548.27 | 10,954.25 | 27,527.88 | 9,624.47 | 25,741.63 |
| | IC2 | 20,913.22 | 33,266.09 | 20,527.42 | 32,622.41 | 18,132.66 | 32,116.55 | 16,314.57 | 31,907.00 |
| | IC3 | 26,594.75 | 41,247.94 | 28,056.61 | 40,473.28 | 27,256.98 | 29,744.22 | 24,560.39 | 40,323.75 |
| | Extended Care | 36,421.53 | 44,490.06 | 43,188.28 | 43,911.59 | 36,697.13 | 44,002.56 | 34,858.63 | 44,233.41 |

While Substudy 1 provided a comprehensive analysis of the comparative costs to government, by level of care, it did not analyze data on the outcomes of care or the costs to informal care providers. These additional topics were covered in Substudy 5. Substudy 5 compared costs and outcomes in two sites: Victoria, British Columbia, and Winnipeg, Manitoba. We found that there were important differences between the sites, so rather than combining data from the two sites, we presented data for each site separately. Substudy 5 can best be thought of as incorporating a site and a replication of the same study in another site. One important difference was that there were considerably more exceptions regarding high care needs clients in the Winnipeg site compared to the Victoria site. The cut-off point that was used to separate exceptions from regular home care clients was 120 hours of home support service per month. In British Columbia this is the maximum number of hours allowed by policy for the highest level of

care (EC) clients. It is also a level at which home care costs became comparable to the costs of facility care. In Winnipeg, one can provide home care up to the equivalent cost of facility care.

It is important to note that in Substudy 5 we selected stable clients to maximize the within-level-of-care analysis on costs and outcomes. An overall total of 580 clients (222 from the community and 358 from facilities) participated in Substudy 5, including clients with some form of dementia. Some 501 informal caregivers also participated in the study. As it was necessary to have comparable care level systems for the Victoria and Winnipeg cohorts, a classification system based on the assessment instrument used in the study (the SMAF instrument now in use in Québec) was developed.

With regard to outcomes, it was found that, comparing home care to residential care, there were similar levels of satisfaction in regard to the clients' overall quality of life, satisfaction with life, and satisfaction with the services provided. This finding is consistent with the existing literature.⁷

With regard to costs, it was found that home care costs are still significantly less, even using a societal perspective in which all costs are included, than residential care. However, this relative degree of cost-effectiveness is influenced by how the time of informal care providers is costed, for example, if professional rates of pay are used to cost the time of informal caregivers compared to other approaches such as using the minimum wage⁸. Table 4 presents data on the cost to government, that is, there is no consideration for user fees, out-of-pocket expenses or the time of the caregiver. Table 5 presents data which includes user fees, out-of-pocket expenses and informal care time costed at the replacement wage. The data in Tables 4 and 5 indicate statistically significant findings that home care is less costly than residential care.

⁷ Braun, K.L., & Rose, C.L. (1987). Geriatric patient outcomes and costs in three settings: Nursing home, foster family, and own home. *Journal of the American Geriatrics Society*, 35 (5), 387-397; Hulsman, B., & Chubon, S.J. (1989). A comparison of disabled adults' perceived quality of life in nursing facility and home settings. *Public Health Nursing*, 6 (3), 141-146; Moss, A.H., Oppenheimer, E.A., Casey, P., Cazzolli, P.A., Roos, R.P., Stocking, C.B., & Siegler, M. (1996). Patients with amyotrophic lateral sclerosis receiving long-term mechanical ventilation. *Chest*, 110 (1), 249-255; Rothman, M.L., Hedrick, S.C., Bulcroft, K.A., Erdly, W.W., & Nickinovich, D.G. (1993). Effects of VA adult day health care on health outcomes and satisfaction with care. *Medical Care*, 31 (9 Supplement), SS38-SS49.

⁸ Another factor which can affect the degree of cost-effectiveness of home care is whether or not facility user fees, which are sometimes considered to be the equivalent of room and board costs, are included. We are of the view that room and board costs should be costed as part of facility care because they are a health care related expense in that the client needs to be in a facility to receive care. Our analysis focuses on health related costs. However, we recognize that there are a range of opinions regarding the issue of including or excluding health related room and board costs in economic evaluations.

Table 4: Average Annual Costs to Government of All Health Services for Continuing Care Clients (for Clients with 120 Hours per Month or Less of Care Aide Time)⁺

| Care Level | | Victoria Sample | | Winnipeg Sample | |
|-------------------------------------|--------------------|-----------------|-------------|-----------------|-------------|
| | | Community | Facility | Community | Facility |
| Level A: Somewhat Independent | Mean | \$12,249.20 | \$24,092.59 | | |
| | Standard Deviation | \$8,025.57 | \$7,622.32 | | |
| | Number | 37 | 12 | | |
| Level B: Slightly Independent | Mean | \$17,188.25 | \$29,141.49 | \$17,989.32 | \$33,655.59 |
| | Standard Deviation | \$6,996.46 | \$11,898.78 | \$10,217.75 | \$18,076.34 |
| | Number | 23 | 42 | 14 | 11 |
| Level C: Slightly Dependent | Mean | \$14,544.56 | \$36,014.93 | \$16,559.31 | \$32,151.75 |
| | Standard Deviation | \$10,941.38 | \$17,894.51 | \$6,418.52 | \$13,523.96 |
| | Number | 12 | 50 | 10 | 37 |
| Level D: Somewhat Dependent | Mean | \$16,870.76 | \$44,309.55 | \$15,528.02 | \$28,595.75 |
| | Standard Deviation | \$13,465.77 | \$16,940.92 | \$7,731.96 | \$13,897.39 |
| | Number | 8 | 26 | 13 | 52 |
| Level E: Largely Dependent | Mean | | | \$23,815.54 | \$33,422.73 |
| | Standard Deviation | | | \$4,254.38 | \$16,864.30 |
| | Number | | | 4* | 29 |

⁺ Due to differences in the proportion of those receiving high levels of care across the two sites, outliers receiving more than 120 hours of care aid time were excluded from the analysis.

* Due to there being less than five cases in this cell, the statistical analysis for Winnipeg was based on Levels B to D only.

Table 5: Average Annual Costs of Continuing Care Services, Physicians and Hospitals, Out-of-Pocket Expenses, and Informal Caregiver Time Valued at Replacement Wages (for Clients with up to 120 Hours per Month of Care Aide Time)⁺

| Care Level | | Victoria Sample | | Winnipeg Sample | |
|-------------------------------------|--------------------|-----------------|-------------|-----------------|-------------|
| | | Community | Facility | Community | Facility |
| Level A: Somewhat Independent | Mean | \$19,758.59 | \$39,255.44 | | |
| | Standard Deviation | \$11,590.57 | \$ 7,594.13 | | |
| | Number | 37 | 12 | | |
| Level B: Slightly Independent | Mean | \$30,975.22 | \$45,964.23 | \$27,313.02 | \$47,618.22 |
| | Standard Deviation | \$16,943.63 | \$12,566.70 | \$21,219.16 | \$19,486.61 |
| | Number | 23 | 42 | 14 | 11 |
| Level C: Slightly Dependent | Mean | \$31,847.92 | \$53,847.62 | \$29,094.46 | \$49,207.31 |
| | Standard Deviation | \$13,764.31 | \$17,417.82 | \$ 8,851.74 | \$13,805.44 |
| | Number | 12 | 50 | 10 | 37 |
| Level D: Somewhat Dependent | Mean | \$58,619.30 | \$66,310.18 | \$32,274.54 | \$45,636.77 |
| | Standard Deviation | \$25,473.65 | \$21,491.15 | \$ 9,200.12 | \$15,735.47 |
| | Number | 8 | 26 | 13 | 52 |
| Level E: Largely Dependent | Mean | | | \$35,113.75 | \$50,560.38 |
| | Standard Deviation | | | \$ 6,302.44 | \$17,196.53 |
| | Number | | | 4* | 29 |

⁺ Due to differences in the proportion of those receiving high levels of care across the two sites, outliers receiving more than 120 hours of care aid time were excluded from the analysis.

* Due to there being less than five cases in this cell, the statistical analysis for Winnipeg was based on Levels B to D only)

It should be noted that facility care is funded on a case mix basis in British Columbia, but that there is one standard rate for the two highest care levels (levels 3 and 4 on a four point scale) in Winnipeg. This may account for the different pattern of facility costs, by levels of care, across the two sites.

Thus, overall, one can conclude that home care can be a cost-effective substitute for residential care, particularly for stable clients. It is also noteworthy that this finding applies when one analyzes costs to government, or costs to society as a whole. It must, however, be stressed that to actually achieve cost-effective results in the real world there needs to be a true substitution of home care services for residential services. Thus, the potential of home care may only be realized through planned and targeted initiatives designed to substitute home care services for residential services, or by allowing home care to remain a demand service while freezing the supply of residential and/or acute care services. An example of the planned approach is the resource allocation model used in British Columbia in the early 1990s which shifted resources from residential services to home care in a planned and proactive manner. An example of the second approach is when home support services continued to be provided to clients in British Columbia, in the mid-1980s, while the number of long term care beds was held constant. Both examples are documented in Substudy 1.

There seems to be a general perception that if one uses a societal perspective the costs of home care will increase significantly and may be greater than residential care. Our analysis indicated that this was not the case. While there are significant out of pocket expenses for home care clients and family members (about \$3,000 per client per year), these costs are only a modest fraction of the costs of co-payments clients made for residential care (about \$12,000 per year for facility clients). Thus, there are significant increases for home care clients and family members and for residential clients when one uses a societal perspective.

Finally, we found that family members and friends spend a considerable amount of time caring for their loved ones. Indeed, while there are major variations across care levels, our analysis indicates that on average, when time is costed at the replacement wage, the costs to home care clients and the family members and friends who support them are equal to the costs to government. That is, from a societal perspective, home care clients and their family members contribute half of the cost of care and governments contribute the other half. This is in stark contrast to acute care hospital and physician services where almost all care costs are paid for by government.

3.2 Studies Related to Planning

As noted previously, we tried to design our program of research in a way that would be useful to planners, analysts, administrators and decision-makers. Thus, we conducted two studies which would assist in planning for future resource allocation needs for continuing care.

Substudy 2, based on British Columbia data, had two primary purposes: to describe the pattern of movement of clients through the system of care and to determine if there may be pressures on residential care beds generated from within the continuing care system itself. A

cohort of all clients who had a new assessment in the 1987/88 fiscal year was followed to the end of the 1996/97 fiscal year. It was hypothesized that there would be a small number of care trajectories across levels of care and types of service (home care or residential). For example, a client may come into home care at the PC level, move to IC1 after a year, to IC2 after a year, to IC3 in a facility after a year, to EC in a facility after a year, and die after a year. However, it was found that there were no common patterns of care trajectories in home care. The most common pattern, when all levels and types of care were considered together, only accounted for 6.6% of the clientele. What was found, and is a significant new finding, is that for each of the 10 possible combinations based on the level of care, and the type of care (community or residential), the most common pattern was for the client to come into that grouping and die (see Table 6). The percentage who came into a given type of care and died increased with care levels. For example, 20% of clients who entered care as home and community clients, at the Personal Care level, died. The corresponding percentage of clients who entered the system as home and community clients at the Extended Care level, and died, was 54%. Overall, some two-thirds of all clients died over the period of the study and one third were still alive at the end of the 1996/97 fiscal year. A simplified analysis, which excluded the levels of care, indicated that the most common pattern was to enter as a community client and die (24.7%). The next most common pattern was to enter as a community client, move to a facility and die (16.2%). The third most common pattern was to enter as a community client and still be in care in March 1997 (9.5%). The fourth most common pattern was to enter as a facility client and die (9.3 %). It should be noted that there were over seven times as many community clients as facility clients in the sample and this accounts for the relatively small proportion of clients in the facility care and died category. It should be stressed that people are often admitted to care in a state of crisis and, therefore, may be more likely to die after admission.

Table 6: The Most Common Care Patterns for Each Type and Level of Care Grouping

| Level | Community/Died (%) | Facility/Died (%) |
|--------------|---------------------------|--------------------------|
| 1 (PC) | 20.5 | N/A |
| 2 (IC1) | 29.3 | 35.5 |
| 3 (IC2) | 36.8 | 32.3 |
| 4 (IC3) | 40.8 | 53.2 |
| 5 (EC) | 54.0 | 92.3 |

In Substudy 2 we also wanted to analyze how consistent the pattern of movement was across types and levels of care. Markovian Modelling was used for this part of the study. If clients move from home care to residential care in a consistent pattern from year to year then this “within-system” movement would not put pressure on facility care. If, however, in a given year there was a significant influx of home care clients, and if, for example, 60% moved from home care to facility care in years three and four after admission, this would create significant “within-system” pressures on facility beds. It was found that the latter was not the case and that the pattern of movement from home care to facility care was consistent over time.

Another important aspect of future planning and analysis relates to the comparative utilization of formal care and informal care. In Canada, informal support and formal care are seen as being complementary in that the government pays for needed services which cannot be provided by family members or other informal caregivers. Substudy 3, using data from Edmonton, found that formal paid services are, indeed, a complement to informal care. In fact, the substudy found that as care needs increased, clients were more likely to receive more formal care and more informal care. This is consistent with previous research demonstrating the complementarity of informal and formal care.⁹ Overall, it was found that a \$1 increase in informal care (per day), where informal care is converted to dollar equivalents, resulted in a \$1.09 increase in formal costs. Conversely a \$1 per day increase in formal care was associated with a \$0.30 increase in informal costs. The comparative increases of the costs of formal and informal care, by level of care, are presented in Table 7.

Table 7: The Complementarity of Formal and Informal Care

| Level of Care | N | Increase in Formal Costs for a \$1 Increase in Informal Costs | Increases in Informal Costs for a \$1 Increase in Formal Costs |
|---------------|-------|---|--|
| A (low) | 1,564 | 1.17 | 0.51 |
| B | 1,827 | 1.30 | 0.54 |
| C | 655 | 1.08 | 0.31 |
| D | 395 | 0.74 | 0.24 |
| E | 356 | 0.80 | 0.16 |
| F | 134 | 0.66 | 0.10 |
| G (high) | 31 | 0.76 | 0.01 |

Most Ministries of Health and Regional Health Authorities are interested in estimating future resource use. The findings from Substudy 2 indicate the relative length of time people stay in community and facility care, by level of care. This information is useful in calculating turnover rates for future planning. The finding that Markovian modelling is a relatively accurate method of estimating care transitions will also assist planners who are looking at dynamic simulation models. Finally, the data from Substudy 3 can be used in simulations, along with data from Substudies 1, 2, and 5, to estimate the relative costs of formal and informal care in relation to how people move through the system of care and change their type of service and level of care.

4. THE COST-EFFECTIVENESS OF HOME CARE COMPARED TO ACUTE CARE

As noted before, previous work, documented in the scientific literature, was used to determine the topics to be included in the home care compared to the acute care portion of the National Evaluation. A literature review conducted prior to the National Evaluation¹⁰ indicated that there was some evidence for the cost-effectiveness of home care compared to acute care, but

⁹ Chappell, N.L., & Blanford, A.A. (1991). Informal and formal care: Exploring the complementarity. *Aging and Society*, 11 (3), 299-317.

¹⁰ Hollander, M.J. (1996). *The cost-effectiveness of continuing care services: A critical literature review*. Victoria: Health Network, Canadian Policy Research Networks.

that the evidence was restricted to a relatively small number of approaches. What we wanted to do was to conduct smaller, targeted studies on those approaches to see if they were also cost-effective in the Canadian context. Some of the topics that showed promise in the international scientific literature were home intravenous (IV) therapy, day hospitals, and quick response teams, which is why these topics were included in our program of research on the cost-effectiveness of home care compared to acute care.

Intuitively, one would think that home care would be a cost-effective substitute for acute care services given that per diem hospital rates can average some \$500 or more. However, the findings in the scientific literature are mixed.¹¹ The findings from the studies in our program of research also showed mixed results.

It appears that, due to the fiscal pressures on the health care system, hospitals have adapted quickly to seize opportunities for cost savings. Thus, it has been difficult for researchers to respond in a timely manner to conduct studies when a new initiative is implemented. Being able to study a new initiative by comparing previous care and the new care approach, in a study where individuals can be randomly assigned to the two groups, constitutes a much stronger research design, which allows for more definitive conclusions, than studying a new program once it has been fully implemented.

This dilemma is reflected in some of our studies regarding the cost-effectiveness of home care compared to acute care. A very promising initiative, which has now been in place for some time but for which there are relatively few Canadian evaluations is Quick Response Teams (QRT). The purpose of the QRT is to intervene at an early, pre-hospital admission stage to re-route individuals back to their homes rather than to have them admitted to a hospital. This is typically done by locating staff (usually from the home care program) in hospital emergency departments. These staff work with emergency room staff to identify clients who would normally be admitted to the hospital, but who, with additional supports in the home, could be re-routed back to their homes. It is believed that QRT are cost-effective because a significant proportion of clients who are admitted to hospital from the emergency department may become institution dependent, remain in hospital, and eventually be transferred to a long term care facility. Thus, each such case averted can represent considerable savings.

Substudy 14 was an evaluation of the Quick Response Program (QRP) of Saskatoon District Health. It was initially believed that not all potential clients would be evaluated by the QRP as it was not a twenty-four hours per day and seven days per week (24/7) service, and that it would be possible to compare QRP clients with at least a modest number of similar clients who were admitted to hospital. However, since its inception in 1995, staff had increased the effectiveness of the QRP such that only two hospital admissions in Substudy 14 were actually deemed to be comparable to QRP clients in the study. Thus, it was not possible to do a comparative cost analysis with an appropriate sample size for the non-QRP group. However, it was found that the average cost in the community for clients in the QRP group for the 30 day period after visiting the Emergency Department was \$358 compared to an average of \$1,964 per

¹¹ Soderstrom, L., Tousignant, P., & Kaufman, T. (1999). The health and cost effects of substituting home care for inpatient acute care: A review of the evidence. *Canadian Medical Association Journal*, 160 (8), 1151-1155.

client for the two people who were admitted to hospital. Although further study is required to determine the cost-effectiveness of Quick Response Teams or Programs, the findings from Substudy 14 appear to be highly suggestive and administrators may wish to consider implementing such initiatives for their region or hospital. However, we hope that progressive administrators would also work with experienced researchers to incorporate a research component into any new initiative. This would allow for a more conclusive determination of the cost-effectiveness of Quick Response Teams or Programs and would give the administrators good evidence about whether or not such a program would be effective in their hospital or region.

Another example of changes at the front lines of health care is Substudy 12, which was conducted by a research team from the University of Toronto. It was designed to look at the cost-effectiveness of providing breastfeeding support for mothers with pre-term infants at home as compared to those who remained in the hospital and received breastfeeding support from the hospital lactation consultant. Initially, when the study was being designed, hospital length of stay data suggested that there may be a potential for reducing the hospital stay for mothers in the experimental groups by one day, and that the cost of that day should more than cover the additional costs of home care. However, mothers of pre-term infants in the experimental group, on average, only remained at hospital two hours less than mothers in the standard care group. Thus, there was no real substitution and, therefore, early discharge plus home care was not found to be cost-effective for mothers of pre-term infants. Substudy 12 also included a cost-effectiveness analysis of term infants (more than 37 weeks of gestational age) and, although there was a clinically significant difference in the length of hospital stay (about 8 hours), home care for the support of breast feeding was not cost-effective. However, in this group of term infants, success with breast feeding and satisfaction with care was greater in the home care group.

A different approach was taken in Substudy 9. It was based on administrative data for Alberta for all hospital admissions for the 1996/97 and 1997/98 fiscal years. The research team generated new files on full care episodes which included, as appropriate, both hospital care and home care. The purpose of the study was to determine if home care was an actual substitute for hospital care. To be a cost-effective substitute, one would expect that people who received home care would have shorter stays in hospital and that the savings from these shorter stays would more than compensate for the additional costs of home care. That is, Substudy 9 addressed the question of whether care episodes that included both hospital and home care components cost less than care episodes, for similar people, that only included a hospital stay. While it was found that home care was cost-effective for a few types of clients, it was not cost-effective for the majority of clients. However, the research team took its analysis a step further and looked at the relative severity of the cases in the hospital only and hospital plus home care groups by analyzing the number of diagnoses per case as a measure of severity. They found that, on average, the clients who received hospital care plus home care had higher severity ratings than clients who only received hospital care. Apparently clinicians were able to make good clinical decisions about who should be discharged, and when, and were willing to discharge more complex cases to home care. In the absence of home care, such clients might have stayed in hospital for a longer period of time. Substudy 9 again demonstrates adjustments that were made on the front lines to

increase efficiencies and the difficulties of determining if real efficiencies are actually achieved once changes have taken place.

Substudy 11, conducted by a research team from the University of Toronto, was a study of the cost-effectiveness of home care compared to hospital care for intravenous (IV) therapy for individuals with cellulitis. In this case it was still possible to compare hospital and non-hospital cases, but the sample size was relatively small. In addition, while reasonable care had been taken in designing the study and investigating its feasibility, once the study was underway researchers found that home care agencies did not have enough resources to take on a number of new clients for home IV therapy. This put pressure back on the hospital. The result was that emergency department physicians started to provide IV therapy through emergency. Thus, the study resulted in a comparison of IV therapy in the inpatient portion of the hospital compared to IV therapy received at home or in the emergency department.

While the sample was relatively small, and the study was somewhat different from what was originally intended, the results were fairly robust. Substudy 11 found that the cost of IV therapy was about twice as much for the inpatient hospital group compared to the home care/emergency department group. In addition, the quality of life was twice as good for the home care/emergency department group compared to the inpatient hospital group, and the home care/emergency department group had comparatively fewer complications and higher rates of resolution of the problem (i.e., higher rates of positive outcomes).

The literature on the cost-effectiveness of day hospitals has, to date, been relatively weak. The problem has been that researchers have not been able to find appropriate comparison groups for people in day hospitals. They have made comparisons with people who remain in hospital or with people treated on an outpatient basis. In general, one would think that in-hospital clients would have heavier care needs, and outpatient clients would have lighter care needs, than day hospital clients. In support of this assumption, one often finds that day hospitals are cost-effective when compared to in-hospital care and are not cost-effective when compared to outpatient services.¹² This again seems to lend credence to the notion that appropriate comparisons have not been made. Two studies were conducted on the cost-effectiveness of day hospitals. Substudies 10 and 13 used different, and relatively unique, approaches.

Because of the problem of finding an appropriate comparison group, Substudy 13 took a broader, systems perspective for its analysis. This study was conducted in Victoria, British Columbia. Hospital physicians argued that they had a multi-component system of care for complex geriatric clients, which included a day hospital, and that the system worked effectively. Thus, it was decided to evaluate the effectiveness of the system of care by analyzing the extent to which clients were different in each component of the system, that is, that clients were generally in the “best fit” component of the system.

¹² Eagle, J., Guyatt, G.H., Patterson, C., & Turpie, I. (1987). Day hospitals' cost and effectiveness: A summary. *The Gerontologist*, 27 (6), 735-740; Forster, A., & Young, J. (1989). Day hospital and stroke patients. *International Disability Studies*, 11, 181-183; Hildick-Smith, M. (1984). Geriatric day hospitals: Changing emphasis in costs. *Age and Aging*, 13, 95-100; MacFarlane, J.P.R., Collings, T., Graham, K., & MacIntosh, J.C. (1979). Day hospitals in modern clinical practice: Cost benefit. *Age and Aging*, (Supplement), 80-86.

Clients were divided into five settings: a geriatric outpatient clinic, a geriatric day hospital, post-acute geriatric inpatient rehabilitation, residential geriatric rehabilitation for people admitted from the community, and inpatient psychogeriatric rehabilitation. Due to changes in the system of care as a result of a cost cutting measure by the administration, the study was cut short as one of the programs in the study was closed. Nevertheless, while some components had relatively small sample sizes, the overall finding of the study was that the system of care appeared to work reasonably effectively. It was found that persons admitted to each service component were different in regard to mental and physical health, daily functioning, and bodily pain.

Substudy 10, conducted in Sherbrooke, Québec, took a new and innovative approach to studying the cost-effectiveness of day hospitals. The research team conducted a cost-benefit analysis. To date there have been relatively few studies that have been able to use cost-benefit analysis in health care research, as it requires that benefits be converted to dollar terms so that inputs and outputs can be compared using the same measure, that is, dollars. It has been difficult to date to convert outputs and outcomes into dollars in the Canadian health care system.

Substudy 10 measured the level of functioning using the SMAF (Système de mesure de l'autonomie fonctionnelle) or Functional Autonomy Measurement System,¹³ the assessment tool for continuing care clients used in Québec. In previous research conducted by the same research team,¹⁴ they had been able to develop a formula for allocating dollar costs to SMAF scores. That is, they had been able to do detailed cost analyses for people with different scores on the SMAF instrument. This allowed them to develop a mathematical method of estimating costs for each point on the SMAF scale, which goes from a score of 0 to 87. Thus, they could assign a treatment cost to clients at the time of admission to the day hospital, and a treatment cost for care at the end of the stay in the day hospital, based on SMAF scores. They found that for each dollar invested in caring for a person in the day hospital, there was a benefit of \$2.14. They concluded that the day hospital service was indeed cost-effective.

5. FURTHER OPPORTUNITIES FOR ANALYZING THE COST-EFFECTIVENESS OF HOME CARE COMPARED TO ACUTE CARE SERVICES

We were struck by the relatively small number of approaches which had been documented in the literature on the cost-effectiveness of home care compared to acute care. Thus, as noted earlier, we wanted to include in our program of research some analyses to identify other approaches or types of clients where home care was being used but on which relatively little, or

¹³ Desrosiers, J., Bravo, G., Hébert, R., & Dubuc, N. (1995). Reliability of the revised functional autonomy measurement system (SMAF) for epidemiological research. *Age and Aging*, 24(2), 402-406; Hébert, R., Carrier, R. & Bilodeau, A. (1988). The functional autonomy measurement system (SMAF): Description and validation of an instrument for the measurement of handicaps. *Age and Aging*, 17, 293-302.

¹⁴ Hébert, R., Dubuc, N., Buteau, M., Desrosiers, J., Bravo, G., Trottier, L., St-Hilaire, C., & Roy, C. (2001). Resources and costs associated with disabilities of elderly people living at home and in institutions. *Canadian Journal on Aging*, 20 (1), 1-22

no, research had been conducted. That is, we wanted to conduct an exploratory study to identify potential new areas for the cost-effective use of home care.

Substudy 9, discussed previously, had more than one purpose. While it was intended to look at the cost-effectiveness of home care compared to acute care, it was also designed to be exploratory in that we wanted to identify new areas for the potentially cost-effective application of home care. Substudy 9 looked at a wide range of Case Mix Groups (clusters of similar clients with similar conditions).

As noted previously, the clients in the study were people who were hospitalized in Alberta for acute care in the 1996/97 and 1997/98 fiscal years. Data on home care utilization for these clients were obtained from the Alberta Health Home Care Information System. Of a total of 516,694 care episodes, 92.03% received hospital care only while 2.82% or 14,796 episodes included both hospital care and home care.

There were a significant number of Case Mix Groups which had a reasonable proportion of home care cases. Substudy 9 lists the top 50 Case Mix Groups with the most home care cases. The top three GMGs were knee replacement (CMG 354), hip replacement (CMG 352), and coronary bypass surgery (CMG 179).

Overall, findings from our studies of the cost-effectiveness of home care compared to acute care are mixed. Intuitively, one would expect that home care would be a cost-effective alternative to acute care, and a number of our studies present suggestive findings in this regard. However, as Substudies 12 and 14 have indicated, adjustments at the clinical level may be made such that it is no longer possible to study a substitution effect. This finding points out the need to incorporate evaluations into important local decisions so that one can more properly gauge the relative cost-effectiveness of such decisions.

Another important point to note is that funds saved from efficiencies in hospitals may not be transferred to home care organizations. Home care did not have the funds to care for people discharged from hospital and targeted to receive home IV therapy. Thus, it was not possible to more definitively demonstrate the cost-effectiveness of home IV therapy. This also raises the issue of the relative lack of system integration between hospitals and home care. This point is reflected in Substudy 9. It is possible that many of the conditions which did not demonstrate cost-effectiveness could still do so if they were part of targeted interventions, in a broader system of care, which would allow for an actual substitution effect between home care and hospital care.

6. ISSUES RELATED TO IMPLEMENTATION

There were three studies related to issues of implementation, one on home care as a substitute for residential care, one on home care as a substitute for acute care and one on case management that relates to both acute care and residential care. This latter study, Substudy 8 looked at the consistency of decisions about what type(s) of care should be provided to clients using 16 vignettes which ranged from clients requiring lighter supportive care to clients requiring heavy care. The study was based on the responses of 60 case managers from seven provinces across Canada who were asked, using a survey instrument, to rate the level and type of care for each of the 16 vignettes. Case managers were asked to rate the vignettes with and without knowledge of the level of informal support. While there was a moderate degree of consistency in ratings, there were also differences. For example, in one jurisdiction case managers noted that Registered Nurses should be involved for 93.8% of the vignettes, while in another jurisdiction the corresponding figure was 54.4%. Part of these differences may have been due to different systems of care and patterns of practice across jurisdictions. The key findings of Substudy 8 were that there are differences between assessors, and across jurisdictions, in regard to how care plans are developed. If one is to develop new, cost-effective initiatives, it will be important to provide appropriate funds for training in order to ensure consistent decisions among case managers in regard to care planning.

Substudy 6 was also a national study of case managers. It focussed on factors which would facilitate clients continuing to be cared for at home and factors which could lead to premature or unnecessary placement into residential care. The key findings in regard to the factors which facilitate continued home care, influence placement in a facility, and enable clients in facilities to return home, are summarized in Table 8. The findings provide useful input for administrators who wish to develop and implement new programs to substitute home care for residential care. Based on the data in Table 8, critical success factors may include the following initiatives: support clients who live alone in the community; provide consistent, quality home care; work with hospitals to develop step-down or transitional care so clients can recover enough in hospital to go back home rather than be prematurely placed into residential care; develop 24-hour crisis care in the community; and involve case managers in placement decisions.

Substudy 15 analyzed the factors which impede or facilitate the effective transfer of clients from acute care hospitals to home care. This, again, was a national study in which data were collected in seven jurisdictions across Canada. The research team identified six major barriers to effective client discharge. These barriers are summarized in Table 9. The research team then developed eleven best practices to facilitate effective discharge from hospitals to the community. These best practices are summarized in Table 10. The information provided in Tables 9 and 10 should provide useful insights into efforts to develop new initiatives to facilitate the cost-effective discharge of clients from hospitals to home care.

Table 8: Factors Related to Maintaining Clients in Home Care and Influencing Placement in a Care Facility

| |
|--|
| <p>The factors which determine if a client will be cared for at home are:</p> <ul style="list-style-type: none">• provincial policies which assure access to and funding for home care services• health status of the client ...does not require 24 hour professional care• availability of an informal provider ... proximity of family members• health status of the informal provider• access to appropriate professional providers• access to home support workers• financial well-being of the client and/or family to provide additional home support• access to reasonable cost home maintenance services (e.g., lawn mowing, snow removal)• living in a supportive community (volunteers, meals on wheels, elder watch etc.)• rural dweller• access to seniors' housing which accommodates for mobility problems• inexpensive and direct transportation to and from day or night programs and medical appointments• access to respite care on a regular basis for informal caregivers• client and family level of independence and coping• home environment judged to be safe to accommodate level of care required by client• convalescent beds available so client makes transition from hospital to home with some ability to cope at home• reasonable waiting list for home care services and equitable positioning of community-based applicants and hospital-based applicants for home care services• non-access or long waiting lists for long term care facility |
| <p>The factors which influence the choice of care in a long term care facility rather than at home are:</p> <ul style="list-style-type: none">• home environment not safe for the provision of home care services or for the client's well- being• client requires 24 hour care• home care unable to provide full service package required to meet client needs• acute care environment pushed for long term care placement• client with mobility problems and inability to transfer which contributes to informal provider burn-out• in some provinces, client assessed by means of standardized tool to require long term facility care• elderly client cannot cope with non-continuity of care providers and chooses admission to a facility• lack of understanding on part of client and family of cost differences between home care and long term care facility.....believe institutional care is their right and will not cost them.• client and family unwilling to pay for additional support services that would enable the client to stay at home• home care case managers not part of hospital discharge planning team ("<i>system has failed if first visit is to do placement papers</i>")• client has no family or only informal care provider is frail• lack of community supports• client and family in crisis ... no previous contact with home care or home care unable to monitor because of heavy case loads so preventive action not taken. |
| <p>The factors which influence long term facility care clients to return home from a care facility are:</p> <ul style="list-style-type: none">• a period of respite has permitted informal providers to recover from exhaustion and other stressors and to lobby for the return of their relative• the client's residence has been adapted to accept the client with mobility problems• adequate home support workers have been found to provide care at home• the client has chosen to return home because of the rigidity of rules in the facility, especially those pertaining to alcohol consumption.• a respite care program for the informal providers has been established• the client has completed a convalescent period following acute care hospitalization and is now assessed to be able to cope at home. |

Table 9: Barriers to Effective Client Discharge from Hospital

| |
|---|
| <ul style="list-style-type: none">• System Barriers to Working Together: includes barriers resulting from definitions of roles and responsibilities as well as the scheduling, availability and assignment of human resources.• Family/Caregiver/Patient Barriers: barriers resulting from resistance to discharge, lack of education/awareness of benefits of early discharge and lack of family or caregiver capacity to provide support to discharged patient.• Geographic Barriers: includes barriers in rural access to services, supports, equipment and supplies. Interjurisdictional barriers are also evident in “out of region” patient discharge.• System Management and Control Barriers: barriers resulting from inflexible governance structures, rigid systems, processes or controls. Financial controls put different pressures on each sector. Organizational focus on incompatible performance measures can similarly inhibit effective discharge relationships. Lack of common access to patient information is a significant barrier to patient discharge in some jurisdictions.• Constant System Change: this overarching barrier inhibits the development of external formal and informal relationships and the focus and energy available for boundary-spanning initiatives.• Resource Barriers: three main types of resource barriers are identified. First, the system does not seem to be resourced appropriately to respond easily to new demands for service or to provide the range and scope of supports necessary for patient discharge. Second, shortages of trained health care professionals can result in barriers to discharge. And finally, limited community supports for discharged patients as well as few alternatives to home care discharge create barriers. |
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Table 10: Best Practices for Discharge from Acute Care Hospitals

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| <p>Formal Systems:</p> <ul style="list-style-type: none">• Legitimization of the relationship between acute care and home care• Access to compatible and/or common information systems• Flexible use of resources <p>Relationships and Informal Networks:</p> <ul style="list-style-type: none">• Formal opportunities for communication and the development of working relationships• Continuity and stability of staff assignment• Boundary spanning positions <p>System Capacity:</p> <ul style="list-style-type: none">• Program resources• Access to home care – availability of referral and assessment service• Home care supports• Community supports• Continuum of care |
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The purpose of the above three studies was to obtain information which could be used to provide practical advice to administrators who wish to implement cost-effective programs. There are a number of useful lessons. Perhaps the first is the importance of an overall philosophy of enablement which should underlie policy formulation and practice. This philosophy should help care providers focus on the needs of clients and their families rather than on processing clients through the system. It should also ensure that adequate funding is obtained and that there are efforts to provide a range of needed services in an integrated system of care. That is, new initiatives should be considered in relation to the broader system of care.

Another lesson is that care providers may not always be consistent in how they do things. Thus, it will be important to build in monitoring of care patterns and inter-rater reliability of assessment and classification to ensure a consistency of practice on an ongoing basis.

Ongoing and effective communication will be critical to gain acceptance for a new program both from care providers and from clients and their family members. One can expect resistance to new initiatives. Resistance may be based on a number of factors, but that portion which is based on a lack of understanding can be overcome by effective communication strategies.

It is important to adequately resource new initiatives. A lack of adequate resources could lead to early failures from which it may be hard to recover. Even good models, if they are not adequately resourced, can fail because they can not function optimally if they are under resourced. Thus, failure may come about due to underfunding rather than due to the nature of the model which is implemented. However, in such cases the failure may be, incorrectly, attributed to the model itself.

Finally, it must be recognized that the primary challenges of implementing new programs are often organizational and administrative rather than technical. Change is always difficult and often involves winners and losers. The skill of the administrator is critical in bringing about effective and positive change.

7. LEARNINGS ABOUT RESEARCH

This program of research has confirmed the value of using an integrated set of studies to inform decision-making on complex topics. While research always takes time, programs of research can be conducted at moderate cost, and in a fairly timely manner, if they are well planned. Also, related studies can be conducted in parallel and can provide useful results.

Having noted the above, there are, however, significant challenges to conducting research projects or programs of research in a timely manner. Despite rhetoric supporting evidence-based decision-making, clinicians and administrators may make important decisions in order to achieve cost savings without including a research component. Many such decisions can have a significant impact on client care and, thus, should be evaluated so that cost cutting in and of itself does not become a major driver of policy. In addition, it is more likely that key decisions will be evaluated or considered more thoroughly if the care components affected are part of an integrated system of care in which one administrator will be affected not only by the type of service the decision was made about, but also by the ripple effects the decision has on other parts of the health system. For example, a hospital administrator could implement efficiencies by reducing hospital stays and discharging clients earlier to home care, but this only focuses on hospital-related efficiencies. If none of the savings are shared with home care, it puts increasing pressure on home care administrators, service providers and clients. Different decisions may be made if administrators are required to consider all affected components of the health system when they make decisions about one type of service. Thus, integrated models of care may result in better decisions, and

administrators may be more anxious to include a research component because they will be directly affected by the consequences of their decisions.

Given the findings in Substudy 9, which discovered that home care is being used to substitute for acute care in many areas where little or no research has been conducted to date, it may be useful to fund further exploratory studies that identify new areas where it may be possible to organize services in a more cost-effective manner. It may also be useful to fund cost-effectiveness studies on topics which have been discovered in such exploratory studies.

In doing our research, and considering what methodological and statistical tools to use, it became clear that there may be certain inherent value biases against the poor and seniors in some of the techniques of economic evaluation. For example, cost-utility analysis uses quality-adjusted life years (QALY) as its measure of outcome. However, QALYs are constructed from a combination of years left to live and a quality of life score. Thus, younger people, all other things being equal, will have higher QALY scores than older people with the same rated quality of life, simply because they are younger. It would be helpful for health economists to review their tool kits and develop more appropriate methods for conducting economic evaluations in regard to seniors and persons with disabilities.

Finally, it became clear in a number of the studies in which original research was conducted that the restraint of the 1990s and other factors have had a detrimental impact on the climate for doing original research. Care providers have been asked to do more with less for a number of years and many are at the breaking point. In addition, more and more people are trying to do community based research. The consequence of these pressures has been that administrators and care providers are often quite reluctant to participate in research and have very little time to give to researchers. Yet, research is needed now, more than ever, to inform policy-making.

8. KEY ISSUES FOR POLICY AND PRACTICE: NEXT STEPS

There are a number of important topic areas in regard to health services for elderly persons and those with disabilities that can be informed by the work conducted in the National Evaluation of the Cost-Effectiveness of Home Care either directly, based on the findings of the studies, or indirectly, based on issues the research team had to address in one form or another as part of their activities. The findings from the National Evaluation can thus provide useful input to a range of key issues. The following are our suggestions about things which should be considered by clinicians, administrators and policy makers in order to improve the delivery of health services to seniors and persons with disabilities in Canada.

8.1 Develop Effective and Integrated Service Delivery Systems for Seniors and Persons with Disabilities

The emphasis on home care over the past several years has been useful in regard to promoting new research and focusing on the important role home care plays in the health care system. However, home care does not exist in isolation. The recent focus on home care *per se* may also have led to some negative consequences. Home care in Canada is being transformed from care provision for a chronically ill population to a medical support system for early discharges from acute care hospitals. In addition, the maintenance and preventive function of home care (not a focus of this program of research) is being dismantled as home care services have been cut for persons with lower level care needs. One of the reasons for this is the focus on home care in isolation from the other parts of continuing care (a broader system including home care, home support, case management, residential long term care and chronic care, and specialty services). Because the home care industry is less powerful than some other components of the health care system, and because, until recently, there has been little evidence of the cost-effectiveness of home care, it has been an easy target for fiscal restraint.

The policy discourse should now shift from home care to the broader system of continuing care. While the focus on home care resulted in research studies on its cost-effectiveness, it inhibited similar studies on the cost-effectiveness of residential care services as a substitute for hospital services. In most jurisdictions, home care is already considered to be part of a broader system of continuing care and we believe that this existing approach to organizing health services should be supported and strengthened. By focusing on more integrated and coordinated models of care, one can consider policy issues from the broader perspective of the health care system rather than from the narrower perspective of one type of service. In addition, we believe that greater integration and coordination will make it easier to substitute home care services for residential services and acute care services. In a more integrated model of care, savings from greater efficiencies realized in acute care would be shared with home care so that it can expand at the rate necessary to provide continued support to the hospital sector.

Substudies 1, 2, and 5 show the type of analysis which can be conducted in a more integrated continuing care program. These studies could not have been conducted in a fragmented system. Thus, continued fragmentation of care services contributes to an ongoing ignorance of what is, and is not, cost-effective. This is particularly true of the home care and hospitals interface.

A number of jurisdictions such as British Columbia, Ontario and Québec have announced that they will be building more long term care beds. This is probably a good thing as some people do require residential care. However, if home care is a less costly alternative to residential care, would it not be more reasonable to consider allocating new resources to both home care and residential care. Again, a more strategic approach, considering the overall continuing care system, is worthy of consideration.

While there are many similarities, continuing care systems are still organized somewhat differently across Canada. We believe that efficient and effective continuing care service delivery

systems have certain common characteristics and decision-makers may wish to consider incorporating them into their systems of care. As noted in Substudy 1, these characteristics are:

- **Single Entry**

Single entry provides a consistent screening mechanism which ensures that only those with appropriate care needs are provided services. This increases overall systems efficiencies because it makes it less likely that unnecessary care will be provided. In addition, single entry provides a focal point, in local communities, for “one-stop shopping” for care services. This means that individuals do not have to speak to multiple sources to find out what services are available and how they can be accessed. This increases the level of accessibility to the care system. In systems without single entry, people may not obtain care, or the most appropriate care, because of a lack of knowledge about what is available to them. Client entry is to a whole system of care, offering a comprehensive range of services, and not just to part of the system, such as home care.

- **Coordinated, System Level Assessment and Service Authorization**

Coordinated assessment and service authorization at the system level ensures that there is an appropriate determination of need, and that an initial care plan is developed which is most closely suited to the needs of the client. This care plan constitutes a statement of the range and approximate volume of services to be delivered by one or more types of service providers. There may also be further clinical assessment and case management activities that are carried out within the agency providing actual hands-on care to the client. Based on the overall care plan, the client is “placed,” that is, access to care is authorized for any of the components of the service delivery system whether these services are provided in institutions, the community or the client’s own home. Coordinated assessment and service authorization increases systems efficiencies because, during this process, consideration is given to whether or not clients can be cared for in the community, as opposed to a facility. In most cases, community based care is less expensive. The system level assessment and service authorization process maximizes the probability that the most appropriate services are provided based on the needs of the client. Another positive feature is that the management of facility waiting lists by the assessors/case managers stops facilities from selecting clients who are the easiest to manage or whose care costs less, a practice sometimes referred to as “cream skimming.” Finally, coordinated assessment allows for the collection of the same information for residential and community based clients on admission to the overall system of care.

- **Coordinated, Ongoing, System Level Case Management**

Coordinated, system level case management ensures that there is regular monitoring and review of client needs and that, as needs change, care plans are adjusted to ensure that there is a continuing match between the needs of the client and the range of care services provided. This increases systems efficiencies by not allowing clients to deteriorate, from lack of regular monitoring, to the point where more costly services such as admission to an acute care hospital may be required. In addition, clients often come into care in a state of crisis and may require considerable resources for a short period of time until they can be stabilized. Reassessment allows case managers to adjust the care responses to a lower level of need once a client is stabilized. This also increases systems efficiencies.

- **A Single, System Level, Administrative and Funding Structure**

A single administration for a system of health care services has several positive aspects. Government funds, and funds within regional health authorities, can typically be more readily transferred between residential and community based services to maximize system efficiencies if they are in one division than if they are split between two divisions or two ministries. Similarly, at a policy level, a single administration maximizes the probability that policy issues are viewed in the context of the total continuing care system, not just one sector, such as the residential sector or the community sector. At the clinical level, a single administration maximizes the probability that care staff have a sense of the overall continuing care system, the roles that each of the service components play in the system, and, therefore, how the needs of the client can best be met within the system. At a planning level, a single administration ensures that planning and resource allocation can be done on an overall systems basis, rather than on a component by component basis. It is also important to note that in an integrated system of care no one sub-component should be favoured over other sub-components.

- **A Consistent, System Level Approach to Client Classification**

A consistent client classification method allows for clients to be compared across service delivery components by level of care, in an “apples to apples” comparison. This, in turn, allows analysts to determine the extent to which greater efficiencies may be possible. For example, they can calculate to what extent clients who could be treated at less cost in the community are being admitted to residential care. Without the ability to compare levels of care, it is not readily possible to determine the extent to which similar types of clients are served across service components. Without this knowledge, one cannot easily plan for an efficient and effective mix of services on a system-wide basis. For example, if all community and home based clients are at low levels of care, and all facility clients are at high levels, providing more resources to community services, and reducing beds, may only result in having more clients at low levels of care in the community while depriving those with high care needs of the

facility based care they require. Conversely, if a significant proportion of community based clients are at higher levels of care, and a proportion of facility clients are at lower levels of care, the continuing care system may be capable of greater efficiencies because community and home based services have demonstrated their capacity to care for people who may be at an equivalent level of need as those in facility care. Without having comparable care levels, this type of analysis is much more difficult.

8.2 Enhance Information Systems and Analysis

A noteworthy shortcoming, from a national perspective, is the lack of a national database on home care. This fact, for example, restricted the amount of information which could be provided on home care clients in Substudy 7. While efforts have been made to address this issue by the Canadian Institute for Health Information we, regrettably, still do not have a national database on home care. The need for national data on home care remains an urgent and outstanding priority which should be resolved as soon as possible. To not have basic data on what may soon be a three billion dollar, publicly funded industry should be a matter of significant concern.

There is also room for improvement in regard to national data on long term care facilities and hospitals. In most jurisdictions, chronic care beds are part of the long term care program. However, in some jurisdictions, such as British Columbia and Ontario, extended care beds are still in the hospital sector for statistical reporting purposes and, therefore, comparable data do not exist for all extended care level facility clients across Canada because some institutions report on Statistics Canada's Survey of Residential Care Facilities while others report through the hospital abstracts. This lack of comparability may also contribute to some degree of inaccuracy in national data on hospitals as hospital data in some jurisdictions would include chronic care beds while hospital data in other jurisdictions would not include such beds.

Another important area for policy makers to consider is what is an appropriate strategy for the development of health information systems. It appears at present that the policy of choice is large-scale, long-range mega projects. While this may be appropriate and may yield benefits in future years, policy makers may also wish to balance such mega projects with short term projects that yield tangible and more immediate results.

As evidenced by Substudies 1, 2, 3, 7, and 9, which are based on existing administrative data, policy-makers can learn a great deal simply by using data that already exist. Thus, the policy choice is to determine how to most effectively allocate information systems resources. In the systems field, high priority appears to be given to systems development, while systems maintenance and analysis garner low priority. Problems related to a lack of information integration are often cited as reasons for developing new, cutting-edge systems. However, so much could be done by computerizing existing data and developing better mechanisms to link data sets. In addition, more could be done to ensure data quality, all while maintaining appropriate safeguards to ensure client confidentiality. To make the most of what we already have, we need to analyze existing data and present it back to administrators and clinicians. Once they become engaged in a dialogue about what the data mean, whether or not they are accurate,

and how they can be used to inform policy, a much greater value will be placed on data and more effort will be expended to ensure that data are valid and reliable.

We do not have to wait five or ten years for much of the data required for evidence-based decision-making. While we may have to wait for some things, many issues can be addressed quite adequately right now if we computerize existing data, link relevant databases for analytical purposes, and analyze them. The province of Alberta, a leader in the development of assessment and classification instruments for continuing care in Canada, developed leading edge assessment and classification instruments in the late 1980s. The usefulness of these instruments came to be questioned in the mid-1990s because clinicians and administrators often could not obtain data from the system since most of the data were not computerized. This lack of computerization is common across Canada in the continuing care sector. The unfortunate lack of priority on the use of existing data results in lost opportunities to provide better care to those in need through the use of good clinical information, and to provide decision-makers with relevant inputs into their decisions. Could not 10 to 15 percent of the dollars currently allocated to systems development and the information highway be re-allocated to the analysis of existing data in order to provide timely, targeted, and effective analysis of relevant policy issues right now?

As a minimum, it would be helpful to initiate a survey of home care agencies, similar to the Survey of Residential Care Facilities used in the residential sector. This would at least provide some national, baseline data on home care and could be done fairly quickly.

8.3 Enhance Policy and Legislation Regarding Home Care

There has been considerable discussion about a National Home Care Program, but it has proven difficult to find appropriate approaches to enhancing home care services. If legislation is not possible, it may, nevertheless, be possible to obtain some degree of consensus, perhaps through the Social Union mechanism, on how to improve home care services. Some suggestions for consideration are the following:

- Moving all continuing care services into a universal, or modified universal, model of coverage. It may, for example, still be appropriate to charge user fees for the room and board portion of residential care because people are generally responsible for their own room and board charges. However, all home care services, including home support services could be paid for by government. Home support costs are already provided without co-payments in provinces such as Manitoba, Ontario and Québec.
- Enhancing the portability of continuing care services across Canada. Currently, most jurisdictions have some type of waiting period for residential services and some also have a waiting period for community based long term care services. Given the already existing financial burden on informal caregivers, policy-makers may wish to reconsider residency requirements for both residential care and home care (including home support) services.

- Providing funding, as required, to redress the current anomaly of clients obtaining drugs for free in the hospital and having to pay for the same drugs in the community. It should be possible to establish methods of subsidizing drug costs for individuals in the community with a clearly identified need, as determined by an appropriate health professional.
- Determining the extent to which individual family members should be assisted in their efforts to care for their loved ones who suffer from functional deficits. What level of burden is appropriate for family members and at what point should government lend a hand to those in need? It may be appropriate, given the current pressures on home care, to provide some additional support to informal care providers through the tax system and/or by enhancing existing programs such as respite care.

If it is decided that it is not possible, feasible or desirable to make changes such as those noted above, due to fiscal concerns, then decision-makers should consider the extent to which they have an obligation to inform the public about the realities of the financial risks the public may face in the future with regard to the care of seniors and persons with disabilities. This would allow Canadians to consider the extent to which they need to protect themselves from financial hardship through the private market for insurance, through not-for-profit cooperative insurance plans, or through other means.

Some form of universal coverage, or enhanced coverage, of the costs of continuing care services would no doubt be of benefit to care recipients. Many elderly persons in Canada survive solely on Old Age Security and the Guaranteed Income Supplement (OAS/GIS). There is not a lot of money left over to pay for drugs, eye glasses, dentures, cleaning services, taxis or buses (for those who can no longer drive) let alone the small pleasures of life such as a movie or a meal in a restaurant, after one pays for food, clothing and shelter out of their OAS/GIS cheque. What is medical necessity? Can it differ with age and disability? What about the current focus on population health which defines health broadly. How consistent are our public policy responses with the broader population health perspective espoused by government?

The matter of whether or not, and if so how, to provide increased health coverage for seniors will bring policy makers, those needing care, other groups who are also disadvantaged, and the public face to face with larger philosophical issues. The role of the state versus the role of the individual, the universal model of coverage versus the residual welfare model, the relative need for societal support by different worthy groups, and fundamentally, what kind of society we wish to have, that is, what it means to be a Canadian, all come to mind.

8.4 Develop Innovative and Cost-Effective Pilot Projects

Most of the easy savings from home care may already have been obtained. Nevertheless, there are still many opportunities to increase the cost-effectiveness of service delivery, but most of the savings will probably come from new initiatives based on pilot projects.

Substudy 1 found that the cost is in the transitions and that home care is not cost-effective for people who die. These findings clearly point to the potential for increased efficiencies from targeted initiatives to monitor clients and quickly re-stabilize them if they begin to have problems, and from community based palliative care services for seniors. Such initiatives could be developed by implementing pilot projects to determine the most appropriate care models. Given the activities of informal caregivers noted in Substudy 5, it may be appropriate to develop pilot projects related to enhanced models of respite care. Based on Substudies 9 and 15, it may be useful to develop pilot projects to enhance discharge planning. Finally, further pilot projects on home based intravenous therapy may have promise, as noted in Substudy 11.

8.5 Determine How Best to Allocate Any New Money Coming Into Home Care

There are many good arguments for increasing funding to home care to enable care staff to provide more appropriate care and to reduce the financial burden on family members, even if such action may represent an overall increase in funding. However, a fundamental lesson from the National Evaluation is that simply adding money to home care and long term care services, by itself, may not produce cost-effective results or desired policy goals.

If, and when, a decision is made to provide more resources to this sector, a number of issues will need to be considered. Policy makers will need to clearly think through the extent to which new funding will be allocated for overall improvements in services compared to specific, targeted programs which may increase cost-effectiveness. Money is likely required for both purposes. They will also need to consider what proportions of possible new funds for home care will go to the preventive and maintenance model of home care (not the focus of the research reported here), the long term care substitution model, and the acute care substitution model and, for each area, what type of innovative strategies will produce the greatest efficiencies. Confusing a preventive strategy and a substitutive strategy may lead to suboptimal results. For example, a series of studies were conducted in the early to mid-1980s in the United States to evaluate the cost-effectiveness of home care as a substitute for residential care. However, many of the clients in the studies were light care clients whom one would consider to only need community based maintenance and preventive care, not residential care. The conclusions from these studies that home care was not a cost-effective alternative to residential care was, at least in part, an artifact of having a substitution goal but conducting the studies on people who only needed preventive care.

Policy-makers will also need to determine how new funds are to be targeted. Do they wish to increase salaries for homemakers to the level of care aids in long term care facilities to correct what some perceive to be a relative bias in compensation favouring institutions over home care? Do they wish to provide salary enhancements to other categories of workers, such as nurses and administrators? Do they wish to provide more services for existing clients because it can be argued that many existing clients need more service? Do they wish to use funds to compensate for funding cuts to lower level home care clients? Do they wish to provide services to more people and reduce or eliminate waiting lists for home and community based services such as adult day care? Do they wish to do all of the above, and if so, in what relative

proportions? These are important policy choices. If they are not addressed adequately we may again have sub-optimal solutions to complex problems.

As noted above, the easy savings, and even some of the moderately difficult savings, may have already been achieved given the significant reductions in the length of stay in hospitals and the reduction in the utilization rate of long term care beds across Canada. Further efficiencies may well be possible, and may be substantial, but they will mostly likely require a fairly high level of administrative and program excellence to achieve. This suggests that there may be a greater need than ever for strategic, evidence-based management.

8.6 Reduce the Divide Between Health Services and Supportive Services

A critical issue for policy makers is how to deal with professional home care services compared to home support services. As was noted earlier, home care and continuing care are an amalgamation of health and social services. Historically, health services have been provided without user fees and this tradition was incorporated into home care for its professional care staff. Thus, professional home care services are generally provided without co-payments or user fees.

Home support services such as homemakers and care aides came into home care from a social service tradition which did not have universal coverage. The concept of user fees or a means test was carried over into home care in a number of jurisdictions, so that while professional services are free, home care clients may have to pay a portion, or all, of the costs of home support services. Most jurisdictions have a user fee for home support services, but some jurisdictions such as Manitoba, Ontario, and Québec, do not. Given that it is the supportive services which play a significant role in allowing clients to remain in the community, and prevent institutionalization, serious consideration should be given to making home support services universal services.

8.7 Provide Additional Support to Informal Caregivers

Informal caregivers provide a significant amount of care to individuals who are home care clients. While they provide these services willingly as part of their family obligations, they also contribute significantly to the cost-effectiveness of home care. Given the current fiscal restraint climate, informal care providers are now asked to do more and more. We need to recognize that there are limits to how much they can do. It would be helpful to expand respite care programs so that family members can take a break as needed to recharge their batteries.¹⁵ Good respite care aims to allow family members to care for clients for a longer period of time, which both saves money and allows families to stay together longer. Decision-makers may also wish to consider providing support to informal caregivers through the tax system.

¹⁵ Chappell, N.L., Reid, R.C., & Dow, E. (2001). Respite reconsidered: A typology of meanings based on the caregiver's point of view. *Journal of Aging Studies*, 15 (2), 201-216.

8.8 Recognize That One Can Simultaneously Do Good *and* Save Money

There is a very strong fiscal imperative today that affects policy and program decisions. Everyone seems concerned with cutting costs, and there appears to be no time for even worthy and cost-effective programs if they cost money in the short run. This situation is both regrettable and probably not in the public interest. One of the key, but counter-intuitive, findings from our program of research is that it may be possible to provide better care *and* save money. Initiatives to monitor and quickly re-stabilize clients result in better care than letting clients deteriorate over longer periods of time. As stable clients cost less, it may also save money. Home based palliative care allows clients to die in familiar surroundings with family and friends nearby. Provided the necessary supports are in place, palliative care should result in fewer trips to the hospital and save money. Respite care can allow families to care for their loved ones for longer periods of time before they are placed into long term care facilities, thus saving money. Step down care is less costly than hospital care and allows clients to recover to the point where they can go home rather than to a long term care facility. This too, in all likelihood, will save money.

Policy makers have a choice. They can focus on immediate reductions in costs, which may actually be more costly in the long run,^{16, 17} or they can take a more strategic and longer term approach which can result in better care and save money. A longer term approach would also allow decision-makers to benefit from ongoing, longitudinal programs of research.

8.9 Develop a Capacity for Rapid Response Research (R³)

There are many decisions that are made on an ongoing basis to reduce costs. Once new policies or programs have been put into place, it is much more difficult to evaluate their cost-effectiveness. Thus, we propose that a program of Rapid Response Research (R³), be developed which allows researchers to work with policy-makers to evaluate new initiatives as they happen. With R³ it would be possible to obtain funding quickly, while still ensuring an appropriate review of proposals. This strategy would allow researchers to study major changes as they are happening and would provide much more timely, and methodologically sound, research results.

8.10 Make a Renewed Commitment to Evidence-Based Decision-Making

As was noted above, many of the easy savings in continuing care may already have been achieved. In order to move forward successfully a high degree of management excellence will be required. Administrators will need to be strategic, analytical managers, that is, there will be a greater need than ever for effective, evidence-based decision-making. Policy makers will need to study the extent to which it is feasible to institute initiatives such as bringing greater consistency to the financing of home care services by eliminating user fees for home support services. Administrators and clinicians will have to oversee the development of key pilot projects that can

¹⁶ Hollander, M.J. (2001). *Evaluation of the maintenance and preventive function of home care*. Victoria: Hollander Analytical Services Ltd.

¹⁷ McDaniel, S.A., & Chappell, N.L. (1999). Health care regression: Contradictions, tensions, and implications for Canadian seniors. *Canadian Public Policy*, 15 (1), 123-132.

both provide better care and save money. Tough decisions will need to be made by managers about how to allocate, or re-allocate, current resources and how to make the best use of new resources. These are all matters for which relevant evidence can provide meaningful inputs into the decision-making process. We believe that there is a need for a renewed commitment from senior clinicians, administrators and policy-makers to ensuring that they both develop needed information and actively use it in their day to day decision-making processes.

Appendix

List of Substudies

Title: Substudy 1: Final Report of the Study on the Comparative Cost Analysis of Home Care and Residential Care Services

Research Team: Marcus J. Hollander, PhD (Hollander Analytical Services Ltd.)

Citation: Hollander, M. J. (2001). *Substudy 1: Final report of the study on the comparative cost analysis of home care and residential care services*. Victoria: National Evaluation of the Cost-Effectiveness of Home Care.

Title: Substudy 2: Care Trajectories: The Natural History of Clients Moving Through the Continuing Care System

Research Team: Dean Uyeno, PhD (University of British Columbia)
Marcus J. Hollander, PhD (Hollander Analytical Services Ltd.)

Citation: Uyeno, D., & Hollander, M. J. (2001). *Substudy 2: Care trajectories: The natural history of clients moving through the continuing care system*. Victoria: National Evaluation of the Cost-Effectiveness of Home Care.

Title: Substudy 3: Cost Implications of Informal Supports

Research Team: Konrad Fassbender, PhD (University of Alberta)

Citation: Fassbender, K. (2001). *Substudy 3: Cost implications of informal supports*. Victoria: National Evaluation of the Cost-Effectiveness of Home Care.

Title: Substudy 4: Pilot Study of the Costs and Outcomes of Home Care and Residential Long Term Care Services

Research Team: Marcus Hollander, PhD (Hollander Analytical Services Ltd.)
Neena Chappell, PhD (University of Victoria)
Betty Havens, PhD (University of Manitoba)
Carol McWilliam, PhD (University of Western Ontario)
Elizabeth Walker, MA (Hollander Analytical Services Ltd.)
Julie Shaver, MA (Hollander Analytical Services Ltd.)
Jo Ann Miller, PhD (Hollander Analytical Services Ltd.)

Citation: Hollander, M., Chappell, N., Havens, B., McWilliam, C., Walker, E., Shaver, J., & Miller, J. A. (2001). *Substudy 4: Pilot study of the costs and outcomes of home care and residential long term care services*. Victoria: National Evaluation of the Cost-Effectiveness of Home Care.

Title: Substudy 5: Study of the Costs and Outcomes of Home Care and Residential Long Term Care Services

Research Team: Marcus Hollander, PhD (Hollander Analytical Services Ltd.)
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Carol McWilliam, PhD (University of Western Ontario)
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Citation: Hollander, M., Chappell, N., Havens, B., McWilliam, C., & Miller, J. A. (2002). *Substudy 5: Study of the costs and outcomes of home care and residential long term care services*. Victoria: National Evaluation of the Cost-Effectiveness of Home Care.

Title: Substudy 6: Decision-Making: Home Care or Long Term Care Facility

Research Team: Denise Alcock, RN, PhD (University of Ottawa)
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Citation: Alcock, D., Gallagher, E., Diem, E., Angus, D., & Medves, J. (2000). *Substudy 6: Decision-making: Home care or long term care facility*. Victoria: National Evaluation of the Cost-Effectiveness of Home Care.

Title: Substudy 7: Overview of Home Care Clients

Research Team: Marcus J. Hollander, PhD (Hollander Analytical Services Ltd.)

Citation: Hollander, M. J. (2002). *Substudy 7: Overview of home care clients*. Victoria: National Evaluation of the Cost-Effectiveness of Home Care.

Title: Substudy 8: Eligibility for Community, Hospital and Institutional Services in Canada: A Preliminary Study of Case Managers in Seven Provinces

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Citation: Hirdes, J. P., Tjam, E. Y., & Fries, B. E. (2001). *Substudy 8: Eligibility for community, hospital and institutional services in Canada: A preliminary study of case managers in seven provinces*. Victoria: National Evaluation of the Cost-Effectiveness of Home Care.

Title: Substudy 9: Costs of Acute Care and Home Care Services

Research Team: Philip Jacobs, D.Phil. (University of Alberta and Institute of Health Economics)

Citation: Jacobs, P. (2001). *Substudy 9: Costs of acute care and home care services*. Victoria: National Evaluation of the Cost-Effectiveness of Home Care.

Title: Substudy 10: Economic Evaluation of a Geriatric Day Hospital: Cost-Benefit Analysis Based on Functional Autonomy Changes

Research Team: M. Tousignant, PT, PhD (Sherbrooke University Geriatrics Institute)
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J. Desrosiers, OT, PhD (Sherbrooke University Geriatrics Institute)

Citation: Tousignant, M., Hébert, R., & Desrosiers, J. (2001). *Substudy 10: Economic evaluation of a geriatric day hospital: Cost-benefit analysis based on functional autonomy changes*. Victoria: National Evaluation of the Cost-Effectiveness of Home Care.

Title: Substudy 11: An Economic Evaluation of Hospital-Based and Home-Based Intravenous Antibiotic Therapy for Individuals with Cellulitis

Research Team: Principal Investigator:
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Citation: Coyte, P. C., Jamieson, E. G., McGeer, A., Milkovich, N., Morris, A., Ovens, H., et al. (2001). *Substudy 11: An economic evaluation of hospital-based and home-based intravenous antibiotic therapy for individuals with cellulitis*. Victoria: National Evaluation of the Cost-Effectiveness of Home Care.

Title: Substudy 12: Cost-Effectiveness of Home Versus Hospital Support of Breast Feeding in Neonates

Research Team: Co-Principal Investigators:

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Karen Ray, RN, MScN

Citation: Stevens, B., McKeever, P., Coyte, P. C., Daub, S., Dunn, M., Gibbins, S., et al. (2001). *Substudy 12: Cost-effectiveness of home versus hospital support of breast feeding in neonates*. Victoria: National Evaluation of the Cost-Effectiveness of Home Care.

Title: Substudy 13: The Geriatric Outcome Evaluation Study (GOES)

Research Team: Holly A. Tuokko, PhD (University of Victoria)

Theodore Rosenberg, MD (Capital Health Region, Victoria)

Citation: Tuokko, H. A., & Rosenberg, T. (2001). *Substudy 13: The Geriatric Outcome Evaluation Study (GOES)*. Victoria: National Evaluation of the Cost-Effectiveness of Home Care.

Title: Substudy 14: Evaluation of the Cost-Effectiveness of the Quick Response Program of Saskatoon District Health

Research Team: Joanne M. Franko, MSc

Citation: Franko, J. M. (2001). *Substudy 14: Evaluation of the cost-effectiveness of the Quick Response Program of Saskatoon District Health*. Victoria: National Evaluation of the Cost-Effectiveness of Home Care.

Title: Substudy 15: An Analysis of Blockage to the Effective Transfer of Clients from Acute Care to Home Care

Research Team: Caryl Arundel (Canadian Policy Research Networks Inc.)
Sholom Glouberman (Canadian Policy Research Networks Inc.)

Citation: Arundel, C., & Glouberman, S. (2001). *Substudy 15: An analysis of blockage to the effective transfer of clients from acute care to home care*. Victoria: National Evaluation of the Cost-Effectiveness of Home Care.

Title: Synthesis Report: Final Report of the National Evaluation of the Cost-Effectiveness of Home Care

Research Team: Marcus Hollander, PhD (Hollander Analytical Services Ltd.)
Neena Chappell, PhD (University of Victoria)

Citation: Hollander, M., & Chappell, N. (2002). *Synthesis report: Final report of the National Evaluation of the Cost-Effectiveness of Home Care*. Victoria: National Evaluation of the Cost-Effectiveness of Home Care.