Determinants and Outcomes of Privately and Publicly Financed Home-Based Nursing

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We would like to thank all of the care recipients and their family members who took the time to participate in the study interviews.

We are also extremely grateful to the following people who ensured the successful completion of this study: Ada Wong for her endless hard work and dedication to managing the study; Vivian Leong for her contribution to the data analysis and excellent writing skills; and Matthew De Miglio, Ruth Lavergne, and Dev Balkissoon for conducting telephone interviews and entering data. Finally, we are indebted to Ruth Croxford who provided ongoing statistical support for the study.
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Key Implications for Decision Makers

This study aimed to assess determinants of publicly and privately financed home-based nursing and personal support service utilization. The relationship between publicly and privately financed home-based nursing and personal support services and quality of care, as well as the costs to the system and to care recipients, were also evaluated.

By characterizing the distribution of publicly and privately financed care, critical issues such as inequalities in access to homecare and quality of care can begin to be addressed. Furthermore, to be in a position to assess the relative effects of health reforms, an accurate depiction of the financing and caregiving responsibilities assigned to care recipients and their families is required. The results of this study can be used to develop a systematic measurement strategy which can then be implemented to evaluate local, provincial, or national predictors and outcomes of home-based nursing and personal support care.

By assessing determinants and outcomes of privately and publicly financed home-based services, issues concerning access to services, societal costs, and the quality of healthcare will be highlighted. Identifying which individuals face a greater burden for private financing would reveal whether the principles of the Canada Health Act regarding reasonable access to medically necessary services without financial barriers to utilization is maintained in the homecare context. Decision-making around the allocation of resources in a financially constrained environment may be facilitated through an accurate depiction of the homecare context in which healthcare services are provided. Furthermore, by characterizing the utilization of home-based nursing, gaps in knowledge may be recognized and areas for future investigation may be prioritized.
Executive Summary

**Purpose:** This study aimed to assess determinants of publicly and privately financed home-based nursing and personal support service utilization. The relationship between publicly and privately financed home-based nursing and personal support services and the quality of care, as well as the costs to the system and to care recipients were also evaluated.

**Methods:** The research team at the University of Toronto collaborated with six community care access centres across Ontario to recruit study participants. Two types of participants were recruited: 1) care recipients who were expected to receive short-term nursing services (less than 60 days) (Group S); and 2) those who had been receiving nursing and/or personal support service on a continuing basis (more than 60 days with no more than a one-week break in servicing within the 60-day period) (Group C). Potential participants were at least 18 years of age or older, fluent in English, and were receiving publicly financed home-based nursing and/or personal support services; those who were receiving palliative care were not eligible for the study. Participants participated in a telephone interview on a weekly basis for four weeks; each interview lasted on average 15 minutes.

Data were collected using the following instruments: 1) the Ambulatory and Home Care Record was used to collect information on public costs incurred by the healthcare system; out-of-pocket expenditures for medications, health professional appointments, and travel expenses; and time loses incurred by care recipients and family caregivers; 2) the Older Americans’ Resources and Services’ Activities of Daily Living Scale measured level of activities of daily living functioning; 3) the Canadian Community Health Survey’s chronic conditions module assessed co-morbidity; 4) the Quality of Care Survey assessed participants’ perceived quality of nursing and personal support care; and 5) a demographic form. The Ambulatory and Home Care Record was administered weekly and the Activities of Daily Living Scale and demographic form were used during the first interview. The Canadian Community Health Survey was used in the third interview and the Quality of Care Survey was administered during the last interview.
Physician and laboratory unit prices and the cost of clinic and emergency room visits were determined using the Ontario Health Insurance Schedule of Benefits. Medication costs were derived using the Ontario Drug Formulary. The costs of home-based health professional visits were valued using the homecare agencies’ rates. For the cost data, three distributions of total resource expenditures comprising publicly financed, privately financed, and informal care were computed. Appropriate measures of central tendency and dispersion were computed to describe the distributions, and 95 percent confidence intervals were derived. Multivariate regressions were used to assess the relationships between health service utilization determinants and various sources of cost of care.

**Results:** Five hundred twenty-six participants completed the study. Group S and C participants were similar in demographic characteristics, except for marital status and education level. Overall, the mean cost of care for a four-week period for Group S and Group C participants was $7,243 and $8,054 respectively, with time spent providing and receiving care accounting for the majority of costs. Eighty-six percent of in-home services (nursing, personal support, physiotherapy, etc.) that short-term clients received were publicly financed, whereas 97 percent of this type of service that continuing care clients received were publicly financed.

Overall, the results showed an increase in public expenditure was associated with an increase in private expenditure ($t = 4.85$, $p < 0.0001$). Private expenditures were higher for the very elderly, younger care recipients with chronic conditions, males, and care recipients who had many chronic conditions, regardless of age. Private expenditures were lower for females. In addition, a 10-fold increase in public expenditures was associated with a 10-percent increase in private expenditures for someone who had excellent or good functioning for activities of daily living.

The median scores for the quality of nursing and personal support care survey were 84/100 and 79/100 respectively. Regressions analyses demonstrated 1) there were systematic variations among community care access centres in the perceived quality of nursing care, while holding
other factors (age, gender, income, education level, employment status, daily functioning, co-morbidity, urban/rural residence, rurality, and amount of nursing/personal support service received) constant; and 2) perceptions of quality of personal support care were higher for rural access centres.

**Linkage, Exchange, and Dissemination Activities:** Representatives from the Ontario Association of Community Care Access Centres and the six partner access centres were involved in all stages of the study. Each centre received regular updates on the progress of recruitment activities and ongoing communication among all partners was maintained. Study updates were disseminated through electronic newsletters to administrators, government agencies, academics, healthcare professionals, and students. Study findings were presented at two health policy and economic conferences in 2005. We are currently in the process of planning further dissemination activities. An abstract is under review to present a symposium at the Ontario Association of Community Care Access Centres Annual Conference in June 2006. In addition, three manuscripts are in preparation for publication.

**Implications:** The results of this study can be used to develop a systematic measurement strategy which can then be implemented to evaluate local, provincial, or national predictors and outcomes of home-based nursing and personal support care. By assessing determinants and outcomes of privately and publicly financed home-based services, issues concerning access to services, societal costs, and the quality of healthcare will be highlighted. By assessing the determinants of home-based nursing services, such as age and socioeconomic status, issues regarding the inequitable access to home-based care may be examined and addressed by decision makers. Furthermore, gaps in knowledge may be recognized and areas for future investigation may be prioritized.
**CONTEXT**
In Canada, the environment in which home-based nursing services are delivered is increasingly constrained by limited resources. Within an environment characterized by personnel shortages and escalating healthcare costs, an increasing number of care recipients who were traditionally cared for as in-patients are being cared for in the home setting. As a result, a financing shift has occurred, where care recipients may receive a mixture of publicly and privately financed home-based nursing services as well as informal care provided by family members and/or friends. Despite the need for the delivery of efficient and effective nursing care within this complex environment, a limited understanding of the use, cost, and outcomes of home-based nursing services exists. A greater appreciation of home-based nursing is necessary for practitioners, health managers, and policy decision makers to ensure care recipients and their families receive efficient, effective, equitable, and quality care.

This study assessed the determinants of publicly and privately financed home-based nursing and personal support service utilization across the province of Ontario. Determinants such as socio-economic status, age, the amount of informal caregiving, and geographic location of residence were considered. The relationship between the amount of publicly and privately financed home-based nursing and personal support services and the quality of care, as well as the overall costs to the system and to care recipients and their informal caregivers, were evaluated.

**Objectives**
The primary objective of this study was to assess the determinants of publicly and privately financed home-based nursing and personal support service utilization across the province of Ontario. Publicly financed services are those that are financed by the public sector, while privately financed services refer to those services which are paid for out-of-pocket by care recipients and family members and/or by non-governmental third party insurers. The secondary objectives of this study were to 1) determine the extent to which health system and care recipient costs are related to the absolute and relative amounts of publicly and privately financed home-based nursing and personal support services; and similarly to 2) determine the extent to which perceived quality of care is related to the absolute and relative amounts of publicly and privately financed home-based services. Absolute amounts of home-based services refer to the total expenditures on services, and relative amounts refer to the share of publicly financed services in total expenditures.
APPROACH

Conceptual Framework

The framework by Andersen and Newman (1) guided the collection and subsequent analysis of potential determinants of health service use for this study. Nine determinants were considered: age, sex, marital status, level of education, income, informal caregiving, community care access centre region, geographical location of residence (urban/rural), and ability to perform activities of daily living. These nine determinants were chosen because they have been identified in previous studies as predicting use of home-based services and because they might provide insight into determining whether efficient, effective, equitable, and quality care were being delivered.

Participant Recruitment

A purposive sample was recruited from six community care access centres across the province of Ontario. The recruiting centres were Algoma; Brant; Etobicoke & York; Haliburton, Northumberland and Victoria; Grey-Bruce; and Ottawa. These six centres represent the six geographical regions across Ontario.

Two groups of participants were recruited: 1) care recipients who were expected to receive short-term nursing services (less than 60 days) (Group S); and 2) those who had been receiving nursing and/or personal support service on a continuing basis (more than 60 days with no more than a one-week break in servicing within the 60-day period) (Group C). These two groups were sampled as they were expected to differ in terms of their utilization rates, determinants, and total costs. If the duration of care extended beyond 60 days for participants in Group S, an intent-to-treat approach was used in that their data were analysed in Group S. Participants were eligible if they were 1) current recipients of publicly financed home-based nursing and personal support services; 2) fluent in English; and 3) 18 years of age or older. Those receiving palliative care were not eligible. Informal caregivers participated as proxy respondents when care recipients were cognitively or physically incapable of participating and/or not fluent in English.

Data Collection

Instruments

To collect data on the nine determinants, data were obtained from 1) the Ambulatory and Home Care Record (2); 2) a demographic data form; and 3) the Older Americans’ Resources and Services’ Activities of Daily Living Scale (3, 4). Costs of care were assessed using the Ambulatory and Home Care Record, while the Quality of Care Survey (5) assessed care recipients’ perceptions of quality of nursing and personal support care. Information on participant’s health status was collected, using the chronic conditions module from the
Canadian Community Health Survey (6), to determine if the presence of certain chronic conditions influenced the use of health services.

The Ambulatory and Home Care Record was used to collect information on time and monetary costs of care (see Appendix A). Care recipients provided information on the amount of time they and their caregivers spent receiving and providing care and attending medical appointments, and the out-of-pocket costs they spent on medication, additional health services, and household help. The items in the record could be categorized as publicly financed care; privately financed care; and care recipients’ and informal caregivers’ time losses. Publicly financed care included costs incurred by the public sector, privately financed care included out-of-pocket payments for items such as medications, health services, and parking, and time losses referred to the monetary value assigned to time dedicated to caregiving. The psychometric properties of the Ambulatory and Home Care Record has been evaluated in a study funded by the Canadian Institutes of Health Research (2), and it is currently being used in four other studies to measure the resource costs associated with alternative care practices (7-10).

The Activities of Daily Living Scale was used to measure participants’ ability to perform activities of daily living (see Appendix B). Although this scale was initially developed for the elderly, it was adapted to make it applicable to adults aged 18 years or older. The scale consists of 15 items assessing the level of functioning for individuals who live at home. It provides a total score ranging from one (outstanding functioning) to six (complete impairment). Testing of its psychometric properties has indicated it demonstrates good levels of reliability and validity (3, 4).

The chronic conditions module of the Canadian Community Health Survey was used to identify the number of chronic conditions with which participants had been diagnosed (see Appendix C). The survey was designed to collect health and socio-economic information of Canadians 12 years and older. It is applicable to this study sample because it focuses on chronic conditions that are common among Canadians. The total number of chronic conditions was used as a measure of co-morbidity.

The Quality of Care Survey is part of a larger survey by the NPC+Pickering Group (formerly Smaller World Communications), which was developed to assess care recipients’ perceptions of the quality of home-based care provided by community care access centres (5)(see Appendix D). Two subsections of the survey measure care recipients’ perceptions of the quality of nursing and personal support care, each with 20 items and using a four-point scale (1 = excellent; 4 = poor) and yes/no response format (see Table 1).
This survey has been used extensively by various community care access centres to assess accountability and to evaluate performance by provider agencies. Psychometric testing of the instrument demonstrated appropriate content validity, test re-test reliability (greater than 70-percent agreement), and internal reliability (correlations between 0.5 and 0.8). In this study, a summary score out of 100 was calculated based on the percentage of items that were scored “excellent” or “yes;” a higher the score represents a higher quality of care.

<table>
<thead>
<tr>
<th>Table 1: Quality of Care Questionnaire Scoring</th>
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</thead>
<tbody>
<tr>
<td>Quality of Care Category</td>
</tr>
<tr>
<td>----------------------------</td>
</tr>
<tr>
<td>Attitude and Behaviours (2 items)</td>
</tr>
<tr>
<td>Communications (3 items)</td>
</tr>
<tr>
<td>Consistent Care (4 items)</td>
</tr>
<tr>
<td>Responsiveness (1 items)</td>
</tr>
<tr>
<td>Completing work (5 items)</td>
</tr>
<tr>
<td>Overall Quality of Care (1 item)</td>
</tr>
<tr>
<td>Interaction with CCAC (4 items)</td>
</tr>
</tbody>
</table>

Finally, age, sex, marital status, and socioeconomic status (level of education and income) were assessed using a demographic data form (see Appendix E).

**Data Collection Procedures**

This study received ethics approval from the University of Toronto Research Ethics Office. In addition, we also applied for and received ethics approval from the Etobicoke & York access centres prior to their involvement with the study.

At each community care access centre, potential participants who met the eligibility criteria were identified by the in-take co-ordinators from the referral list (for Group S) and from the list of current clients (for Group C). The in-take co-ordinator then contacted potential participants by telephone to ask if they were interested in talking with the research assistant to learn more about the study. The research assistant then contacted those who indicated they were interested within one week. For those who agreed to participate, verbal consent was obtained over the telephone and a written consent form was mailed to participants to sign and return in a postage-paid envelope.

Study participants participated in a telephone interview once a week for four weeks. A four-week time period was selected to capture the period of time in which services were provided at the greatest intensity for patients who had an in-hospital referral and to capture the variability in
resource use for all patients. In all four interviews, participants were asked to recall their resource use over the previous seven days by completing the Ambulatory and Home Care Record. In the first interview, participants were also asked to complete the demographic data form and the Activities of Daily Living Scale. In the third interview, participants were asked about their health status using the Canadian Community Health Survey. In the fourth interview, they were asked to complete the Quality of Care Survey. The length of time required to complete each of the interviews was approximately 15 minutes. Once participants returned their signed consent form, they were entered into a draw to win a $20 gift certificate for use at a major department store.

**Data Analysis**

All data obtained in this study were entered into Microsoft Excel and analysed using SAS (11).

**Valuation Methods**

Cost for healthcare appointments such as physician visits, laboratory tests, and emergency room visits were based on the Ontario Health Insurance Schedule for Services and Benefits. Publicly financed home-based services were valued using the homecare agency rates. Privately financed home-based services costs were equal to the amount of money paid out-of-pocket by the care recipient for additional health services that are not covered by the provincial health insurance or homecare agencies, such as chiropractors and additional nursing or personal support service. Out-of-pocket costs were summed and any reimbursements received from medical insurance were subtracted. Prescribed medication costs were derived using the Ontario Drug Formulary. Although these prices may have been determined through regulatory and bargaining arrangements, and may therefore represent an imperfect measure of “true” costs, these prices were utilized because they were readily available. Over-the-counter medications, supplements, and medical supplies costs were based on average market costs. Informal caregiving time was assigned a monetary value using the human capital approach (12, 13), which applies current average earnings by age and gender to lost market time and then imputes the market value of time dedicated to caregiving. Despite its deficiencies, which include its potential to undervalue some groups relative to others (14), most studies evaluating productivity losses use this approach because it is more straightforward and less expensive than other methods to implement. For this study, the 2001 census data on average earnings were used.

Three distributions of total resource expenditures comprising publicly financed, privately financed, and informal care were computed. Because the distribution of costs was skewed, the public and private expenditures of care were log transformed. Appropriate measures of
central tendency and dispersion were computed to describe the distributions, and 95 percent confidence intervals were derived (8).

**Multivariate Analyses**

Multiple regression models were computed for groups S and C to determine the extent to which the nine determinants predicted the amount of publicly and privately financed nursing and personal support care. To determine the relationship between the amount and mix of publicly and privately financed care and the three outcomes (health system costs, care recipient/caregiver costs, and quality of nursing care), multiple regression methods were used.

**Results**

**Study Participation and Withdrawal**

Over the study period, of the 881 individuals identified as eligible, 624 (71 percent) individuals agreed to participate; of these, 526 (84 percent) completed the study. The participants in each group (254 for Group S and 272 for Group C) are distributed equally across each of the six community care access centre regions (see sampling strategy above). Of the 98 who did not complete the study, 80 (82 percent) withdrew and 18 (18 percent) no longer met the eligibility criteria at the time of the first interview. Reasons for withdrawal included failure to contact individuals for interviews (40 percent), changed their mind about study participation (34 percent), worsening of health (15 percent), busy schedule (eight percent), and death (three percent). Other than being older than participants in Group C ($t = -2.41$, $p<0.05$), the withdrawals were not statistically different than those who completed the study in terms of age, gender, marital status, education, employment, household income, and group membership.

**Demographic Characteristics**

Within Group S, the participants did not differ in terms of age, gender, annual household income, and employment status. Participants from three access centres (Etobicoke & York; Grey-Bruce; and Ottawa) had a higher proportion of individuals who had received some university education compared to participants from the other centres ($\chi^2=27.2$, df=15, $p<0.05$). Within Group C, participants differed in terms of age ($F=2.3$, df=5, $p<0.05$), a greater proportion of individuals from one access centre (Grey-Bruce) were married ($\chi^2=13.7$, df=5, $p<0.05$), and three of the centres (Algoma; Brant; Haliburton, Northumberland and Victoria) had a higher proportion of individuals who had less than high school education ($\chi^2=29.5$, df=15, $p<0.05$). There were no differences in gender, annual household income, and employment status (see Table 2).
There was difference in rurality index in both Group C (F=155.1, df=5, p<0.0001) and Group S (F=106.8, df=5, p<0.0001); participants from three access centres (Brant; Etobicoke & York; and Ottawa) had lower rurality index scores, indicating that healthcare was more available compared to the other community care access centres.

<table>
<thead>
<tr>
<th>Table 2: Participant characteristics</th>
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</thead>
<tbody>
<tr>
<td>Mean age (range)</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Married</td>
</tr>
<tr>
<td>Employment status</td>
</tr>
<tr>
<td>Paid employment</td>
</tr>
<tr>
<td>Retired/disability</td>
</tr>
<tr>
<td>Not employed outside of home</td>
</tr>
<tr>
<td>Education (NA: n = 9)</td>
</tr>
<tr>
<td>Less than high school</td>
</tr>
<tr>
<td>High school — some or completed</td>
</tr>
<tr>
<td>College/vocational school — some or completed</td>
</tr>
<tr>
<td>Undergraduate and/or post-graduate degree</td>
</tr>
<tr>
<td>Income (NA: n = 141)</td>
</tr>
<tr>
<td>$25,000 or less</td>
</tr>
<tr>
<td>$25,001 – 45,000</td>
</tr>
<tr>
<td>$45,001 – 65,000</td>
</tr>
<tr>
<td>$65,001 or more</td>
</tr>
<tr>
<td>Mean ADL functioning (NA: n = 9)</td>
</tr>
<tr>
<td>Mean number of chronic conditions (NA: n = 2)</td>
</tr>
<tr>
<td>Service Type</td>
</tr>
<tr>
<td>Nursing only</td>
</tr>
<tr>
<td>Personal support work only</td>
</tr>
<tr>
<td>Nursing and personal support work</td>
</tr>
</tbody>
</table>
Public and Private Costs Associated with Home-Based Care

Overall, the mean cost of care for a four-week period for short-term and continuing care clients was $7,243 and $8,054, respectively (see Table 3). Time spent providing and receiving care accounted for most care costs. Eighty-six percent of in-home community care access centre-type services (nursing, personal support, physiotherapy, etc.) that short-term clients received were publicly financed, whereas 97 percent of the same in-home services continuing care clients received were publicly financed.

<table>
<thead>
<tr>
<th>Table 3: Summary of cost of care for a four-week period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall expenditure</td>
</tr>
<tr>
<td>----------------------</td>
</tr>
<tr>
<td>Public expenditure</td>
</tr>
<tr>
<td>Public home-based care expenditure</td>
</tr>
<tr>
<td>Private expenditure</td>
</tr>
</tbody>
</table>

Substitutability of Privately and Publicly Financed Home-Based Care

Private expenditures were higher for the very elderly, younger care recipients with chronic conditions, and care recipients with many chronic conditions (regardless of age). Private expenditures were lower for females. Males and the very elderly had higher private expenditures. A 10-fold increase in public expenditures was associated with a 10-percent increase in private expenditures for someone who has excellent or good functioning in activities of daily living.

Regression models were computed to identify relationships between the determinants of home-based service utilization and the public and private sources of cost of care. Since no statistically significant difference was found between short-term and continuing care clients, the two groups were analysed together to assess substitutability. An increase in public expenditure was associated with an increase in private expenditure (t = 4.85, p < 0.0001).

Quality of Care

Four hundred fourteen participants (240 short-term and 174 continuing care clients) completed the quality of care survey for nursing service, while 187 participants (13 short-term and 174 continuing care clients) completed the quality of care survey for personal support service. The quality of nursing care scores ranged from five to 100 (median = 84), with 100 representing complete satisfaction (see Figure 1). The quality of personal support care scores ranged from nine to 100 (median = 79) (see Figure 2). Determinants such as age, gender, amount of nursing/personal support service received, and rurality were considered.
The multiple regressions analyses demonstrated that, holding other factors constant (age, gender, income, education level, employment status, activities of daily living functioning, co-morbidity, urban/rural residence, rurality, amount of nursing/personal support service received), there were systematic variations among the community care access centres in the perceived quality of nursing care. Furthermore, the perceptions of quality of personal
support care were higher for the rural access centres (Algoma; Grey-Bruce; Haliburton, Northumberland and Victoria). Other factors were not statistically significant in determining quality of nursing and personal support care.

**Implications**

By characterizing the distribution of publicly and privately financed care, critical issues such as inequalities in access to homecare and quality of care can begin to be addressed. Furthermore, to be in a position to assess the relative effects of health reforms, an accurate depiction of the financing and caregiving responsibilities assigned to care recipients and their families is required. This research may lead to the development of a measurement strategy which can then be implemented to evaluate local, provincial, or national predictors and outcomes of home-based nursing care.

By assessing determinants and outcomes of privately and publicly financed home-based services, issues concerning access to services, societal costs, and the quality of healthcare will be highlighted. To assess which individuals face a greater burden for private financing would reveal whether the principles of the Canada Health Act regarding reasonable access to medically necessary services without financial barriers to utilization is maintained in the homecare context. Decision-making around the allocation of resources in a financially constrained environment may be facilitated through an accurate depiction of the homecare context in which healthcare services are provided. Furthermore, by characterizing the utilization of home-based nursing, gaps in knowledge may be recognized and areas for future investigation may be prioritized.

**LINKAGE, EXCHANGE, AND DISSEMINATION ACTIVITIES**

An array of linkages and overlaps between the investigative team and the decision-making partners exists. These linkages have been cultivated over several years and are ongoing. Specifically, the investigative team consists of two co-principal investigators, one co-investigator, and seven decision-maker partners. Six of the decision-maker partners are senior administrators of community care access centres. The seventh decision-maker partner is the provincial chief nursing officer of the Ontario Ministry of Health and Long-Term Care. Indeed, many of the decision-maker participants have more than a passing interest in research; likewise for the involvement of the research team in decision-making. Each of the six decision-maker partners from the geographically dispersed community care access centres are also members of their respective regional access centre associations, comprising member executive directors, board chairs, and members of the board of the Ontario Association of Community Care Access
Centers. These arenas provide opportunities to garner input to the research process from a wide audience of decision-maker partners and to assist in the communication of the findings and to facilitate knowledge uptake.

This study was built on the established relationships between 1) executive directors of community care access centres who are members of the Ontario Association of Community Care Access Centres; 2) the healthcare, technology, and place strategic training program at the University of Toronto; and 3) Dr. Peter Coyte, who acts as a bridge between the academic and decision-maker communities. The healthcare, technology, and place strategic training program is a uniquely positioned research team focusing on homecare services. The centre is addressing the current void of systematic research on policy options within homecare. This training program is the first research centre in the world focused on all types of home healthcare and all care recipients regardless of age. Its programs of homecare research and exchange address the organization, delivery, and financing of homecare across the healthcare continuum. It has received significant financial commitments from private and voluntary sector decision makers that span the healthcare and organizational continuum; has been supported by a multidisciplinary team of investigators at the University of Toronto and other Canadian universities; and has demonstrated significant success in acquiring peer-reviewed funding for its thematic programs.

All decision-maker partners have indicated their enthusiastic support to strengthen receptor capacity, and all partners were involved in shaping the research agenda. Several indicated they are committed to being a key influence in the community; they desire to be viewed as thought leaders and innovators, are ready to champion research results within their organizations by narrowing the gap between evidence and action, and yearn to be proponents of evidence for decision-making for the system and policy environment.

**Linkage and Exchange Activities During Data Collection**

The following is a list of activities that took place or are still ongoing to ensure the partners and other interested members in the health services research area remain up-to-date on the study process and facilitate in the dissemination of findings:

1) **Collaboration in study development and recruitment**

All members of the team participated in the development of the objectives and formulation of the research questions and methods. During the recruitment and data collection stages, partners from the Ontario Association of Community Care Access Centers were instrumental in ensuring and facilitating access to participants.
The partners also contributed to this study by encouraging communication with other access centre administrators in their respective regions regarding the progress of the study.

2) **Study recruitment in collaboration with community care access centres**

The recruitment protocol was initially established by the research team at the University of Toronto to ensure uniformity across access centres. However, the specific details such as the length of recruitment period and the method to forward potential participants’ contact information were negotiated when each partner access centre came aboard. This was to ensure the recruitment method would match the unique nature of the population each centre serves and thus maximize the effectiveness and efficiency of the recruitment process.

3) **Communication with participating community care access centres**

The research team at the University of Toronto had ongoing and regular communication with the partner access centres throughout the recruitment period. Each centre received a weekly report of the number of clients who had 1) declined or consented to participate; 2) dropped out of the study and their reason for dropping out; and 3) not yet been contacted. Discussions between the research team and each of the access centres were necessary to develop an effective recruitment approach and to discuss any problems that arose with the recruitment process. Once recruitment was completed within an access centre, a letter of appreciation and an honourarium of $1,500 was sent to the relevant centre.

4) **Newsletter updates**

A newsletter (see Appendix F), which summarized the purpose of the study, methods used, and the participation statistics (as of August 2004) was written and distributed in August 2004. The newsletter was sent to the provincial chief nursing office, the Canadian Home Care Association, the Ontario Association of Community Care Access Centres, the department of health policy, management and evaluation and the healthcare, technology, and place strategic training program at the University of Toronto, and the six participating community care access centres. We encouraged the recipients to use the newsletter as a tool to communicate ongoing research that will help to inform their practice and generate interest for any future research study involvement. Another newsletter is currently in preparation. This newsletter will focus on the study findings and implications of the findings. It is anticipated the newsletter will be sent out in early 2007.
Linkage and Exchange Activities to Disseminate Results
The study findings have been/will be disseminated to the wider academic population, clinicians, program administrators, and policy makers through conferences, electronic newsletters, and manuscripts for publication.

1) Conferences
Study results were presented at two scientific meetings in 2005 and a couple of abstracts were submitted or are in preparation for two other scientific meetings in 2006. Members of our research team continue to actively seeking out other conferences and meetings to share our research results.

a) Canadian Association for Health Services and Policy Research Conference, Montreal, QC (September 16-18, 2005)

The purpose of this oral presentation was to present the overall costs of privately and publicly funded care and to discuss predictors and substitutability of this care. The presentation (see Appendix G) summarized the average cost of home-based care for a four-week period, including the time cost for providing and receiving care. It also highlighted some of the determinants that influence the cost of care (see Results, section 3.5.4). Since the findings on the cost of home-based care are very pertinent to Canadian health service decision makers, the conference was the ideal avenue to share these findings. The response from the audience was positive in that several attendees commented this was an area of research that was important yet understudied. Names of participants who asked for further analyses were retained to continue communication of study results.

b) International Conference on Scientific Basis of Health Services, Montreal, QC (September 18-20, 2005)

The purpose of this poster presentation was to present the predictors of clients’ perceived quality of care (see Appendix H). The main study findings highlighted were 1) community care access centre was the only factor that predicted perceived quality of nursing care; and 2) access centre, rurality, and their interaction term predicted perceived quality of personal support care.

c) Ontario Association of Community Care Access Centres Annual Conference, Toronto, ON (June 11-13, 2006)
An abstract has been submitted to the Ontario Association of Community Care Access Centres Annual Conference to be held on June 11-13, 2006 in Toronto, ON (see Appendix I). We propose to present the findings in a symposium format, in which three 10-minute presentations will summarize the findings on the perceived quality of care, cost of care, and the substitutability of privately and publicly financed care. In addition, 30 minutes will be allotted during the symposium to discuss how the findings can be translated into practice. The goal of this symposium is to involve the access centre stakeholders to identify the potential implications of the study findings and ways to utilize the information to further their effort to improve quality of care. Attendees at the workshop will include the seven decision-maker partners as well as participants from each of the Ministry of Health and Long-Term Care’s regional offices and central staff and other policy makers at the local and regional levels of the access centres. This workshop will provide the opportunity for participants to gain an understanding of the results of the study, discuss potential policy changes that may be necessary, and identify areas for further analysis and investigation. The rationale for identifying areas for further investigation is to foster ongoing relationships with existing decision-maker partners and to provide the opportunity for establishing “new” partnerships.

d) Canadian Association for Health Services and Policy Research Conference, Vancouver, BC (September 17-19, 2006)

An abstract will be submitted to the Canadian Association for Health Services and Policy Research conference to present in Vancouver in September 2006.

2) Newsletters
To disseminate our study progress and generate interest in the results, short summaries of the study, including the purpose, methods, and the project status, were submitted to the department of health policy, management and evaluation at the University of Toronto and the healthcare, technology, and place program for inclusion in their regular newsletters in September 2004. The department newsletter communicates, via e-mail, current academic and research activities happening within the department to all faculty, staff, and students. The training program newsletter shares up-to-date research on all issues related to home-based health services to more than 400 subscribers, including health professionals, academics, and students from around the world. Our study update in the training program newsletters generated such interest we received several e-mails requesting information on our findings, including several professionals in Australia who work closely with nursing agencies.
3) *Manuscripts*

Three manuscripts are in preparation for submission for publication. The first manuscript focuses on the cost of care and the substitutability of privately and publicly financed home-based care. This manuscript will be submitted to the Health and Social Care in the Community in March or April 2006. The second manuscript focuses on quality of care and the predictors of quality of care. This paper will most likely be submitted to the Home Health Care Services Quarterly. The third paper focuses on costs of privately and publicly financed care by describing the components of each of these categories. Although this paper has been started, the majority of the work will occur over the spring and summer of this year.
REFERENCES


