

CHEPA WORKING PAPER SERIES

Paper 02-01

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A Case Study from Ontario**

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Key words: home care services; adults; Ontario; health personnel; consistency of services; providers

Running head: Consistency of Home Care Personnel

Abstract

In Ontario, Community Care Access Centres (CCACs) oversee managed competition by home care agencies for service delivery contracts. Contracts are to be awarded to the agencies that provide the highest quality services at the lowest price. We examined the impact of two rounds of competitive contracting for home care services by one CCAC. Specifically, the impact of changes in market share among agencies on the consistency of personnel caring for longer term home care clients was examined. Clients who transferred to a new agency saw about twice as many service providers during an episode of care as those who did not transfer; the mean monthly number of service providers that they saw before and after transfer was not different. Higher service needs put clients at greater risk for transfer to a new agency. The factors associated with greater consistency in home care personnel for clients are also described.

Consistency of Home Care Personnel Under Managed Competition: A case study from Ontario

The home health care sector is currently the fastest growing area in the Canadian health care system.<1> Yet, the Canada Health Act, the legislation that governs the delivery of publically funded medical and health care services, is silent about standards for and funding of health services delivered in the home. It explicitly covers only medically necessary services delivered in hospitals or by physicians outside of hospitals.<2> The effects of this omission from the Canada Health Act were not fully apparent until the mid 1990s, when hospitals began discharging patients earlier into the community as a cost-saving measure to deal with reduced operating budgets and to reap the benefits of technological advances that allow more patients to have surgery without staying overnight in hospital. These patients, while not needing a hospital bed, continue to need health care services to ensure their rehabilitation and recovery. These acute care clients began to compete for home care services with “traditional” home care clients, the disabled and chronically ill, who had previously been the major recipients of home care services organized by their local communities and provinces. Thus, clients with acute care needs were added to the case load of home care agencies along with clients with longer-term care needs and provinces were under increasing pressure to provide more money for this sector.

Although the federal government contributes money toward home care, there are no national standards for home care. This has allowed provinces to set their own terms and conditions.³ The solutions sought to the increasing need for home care services have differed across Canada's ten provinces and three territories,⁴ which differ in resources, population size and density and previous home care delivery arrangements. There are some similarities among provinces. The wages paid to workers in the home care sector were and remain lower than those in the long term care and hospital sectors. Home care workers are more likely to work part time and less likely to have job-related benefits.⁵ Increasingly, the tasks of home care nurses are limited to those which absolutely require their professional skills so that more personal support functions (bathing, dressing, shaving) have been taken on by home makers who previously mainly did light housework.^{6,7} Some individuals may carry private insurance, either personally or through their employer, usually for some limited, in-home nursing services. Local communities may have a mixture of charitable, non-profit and for-profit agencies whose workers deliver home care services. Staff turnover occurs more rapidly than in other sectors as workers may leave home care for better paying jobs with benefits and regular hours in other areas of the economy or when staff openings occur in the long term or hospital healthcare sectors.⁵

In Ontario, the largest and one of the wealthiest Canadian provinces, with more than 11 million people, successive governments developed different approaches to financing and service delivery arrangements for home care, which reflected their

political ideologies. The current Conservative government, elected in 1995, sought to introduce competitive bidding by agencies into the service provision process in an effort to obtain high quality services at the lowest cost possible.<7-9> It established 43 Community Care Access Centres (CCACs) to serve regions as locally governed, not-for-profit transfer agencies who have the responsibility for assessment of the needs for home care services within their geographic area. They develop service plans that are approved for funding by the provincial government. CCACs make referrals to long term care facilities such as nursing homes and purchase in-home services from non-profit and for-profit vendor agencies through a competitive contracting process, using a requests for proposals (RFP) mechanism. Contracts to service provider agencies are awarded for a two to three year period to supply professional nursing and therapeutic services (physiotherapy, occupational therapy and speech therapy) and provide personal and homemaking support services. This change also had an impact on job security and wages in the Ontario home care sector because employment, even in unionized environments, became less secure. Wages decreased as new companies, who were not bound by existing employment equity legislation, undercut existing organizations in price, often by hiring only casual workers and not paying travel costs or time or providing employment benefit packages.

When an existing or new service agency wins a contract and with it the right to a greater share of the market in the area, CCAC case managers, who are responsible for assessing clients needs, developing a care plan and arranging for service delivery, now

send new clients service providers from the successful agency. As well, case managers must transfer some existing clients, with on-going care needs, to the winning agencies to reflect the new market share arrangements. Changes in service provider agencies (and service providers delivering care), induced by the RFP process, are unlikely to affect service delivery for acute care clients, who typically stay on the CCAC caseload for less than 60 days. Transitions from one agency to the next usually occur over a two to three month period. Thus transitions are more likely to affect longer-term clients, whose care needs are more chronic in nature. They will be told that a new agency and provider(s) will subsequently deliver care since their care extends beyond the period when changes in market share among agencies must occur.

The consistency of the provider (or provider team) who visits the home was identified as a concern by the CCAC and provider agencies. Provider consistency can be affected by home care worker scheduling, vacations, staffing shortages and turnover and also the introduction of the RFP process, which requires the transfer of clients to agencies that gain or for the first time receive market share. Attention to consistency of providers is seen as important to client satisfaction and appropriate care delivery in the home. The agencies attempt to provide consistency by such strategies as assigning a “primary” provider who is expected to deliver the bulk of the services, having a consistent, small backup team to relieve the primary provider, and/or limiting the size of the service team so that the client becomes familiar with all the workers who visit regularly.<10> Information about consistency of providers is not routinely available to

the CCAC as it is kept by individual agencies.

We sought to examine how many clients with longer term care needs were affected by transfers to other homemaking/personal support agencies or nursing agencies during the first two cycles of the competitive bidding process of one Ontario CCAC. The outcome of the first RFP cycle resulted in the transfer of clients to new service providers from November 1998 to January 1999. Both clients receiving nursing and homemaking services were transferred. The affected clients lived in the core city area which receives about 30% of the services purchased by the CCAC. The CCAC sought to minimize impact by allowing only one service to be transferred (either nursing or homemaking). In this first cycle, the CCAC also excluded some clients deemed as vulnerable to negative effects from a transfer. The second RFP cycle, in mid to late 1999, involved nursing services in the remainder of the catchment area, which receives about 70% of the services purchased by the CCAC. No clients, aside from those who were soon to be discharged from services, were excluded from transfer.

Given these events, we were interested in knowing how many existing adult clients, who were not expected to be discharged shortly, were transferred to a different agency as a result of implementing the new market shares awarded through two RFPs and how they differed from clients who were not transferred.

A valued element in the competitive bidding process is agencies' plans for the

provision of provider or provider team to clients. We were also interested in determining whether transferred clients received services from a smaller team of workers after the transfer and how many different service providers clients generally saw in a month and during a care episode. Given reports of high staff turnover rates in this sector, it was not clear whether clients affected by RFP- induced transfers would have a higher number of service providers during an episode of care during which transfer occurred (or the year for clients receiving services during the entire period) than non-transferred clients. Finally, we were interested in factors that were associated with a high numbers of total providers for clients. We sought information on the number of providers monthly and during this care episode in a random sample of these clients who were “at risk” for transfer, whether they were transferred to another agency or not. We sought the reasons for the provider changes that occurred.

Clients may have case conferences (meeting of case manager, service providers and sometimes client and family) to discuss home care arrangements. Case conferences usually signal some difficulties with the care arrangements that need to be sorted out. We questioned whether more case conferences occurred for clients who transferred to a different service provider agency as a result of the RFP process. Finally, we were interested in exploring factors that increased the number of providers a client saw during the study period

METHODS

Sample Selection

A random sample of 600 adult clients was selected from the Hamilton-Wentworth Community Care Access Centre (HW-CCAC) data base. After first excluding children from consideration, we tried to mirror the inclusion and exclusion criteria used to implement the results of each RFP. In the transfers resulting from the first RFP, besides acute care client who were likely to be discharged within 60 days, the CCAC excluded clients if death was imminent, they were cognitively impaired, mental health or behavioural management clients and change of providers was assessed as likely to create a detrimental impact or risk for the client or care giver, they were awaiting transfer to attendant care outreach services, or they were high need complex care clients whose care plan could be jeopardized by changes in personnel. For the 200 clients chosen from the core city area, (sample A), eligible clients had not been discharged from the CCAC between October 1, 1998 and January 31, 1999 (the time period in which transfer among agencies occurred in this area). In sample A, clients with a primary mental health diagnosis and dementia, clients receiving palliative care and those awaiting transfer to attendant care were excluded along with clients whose care plan indicated they were due to be discharged within 60 days. To randomly select 400 clients from the surrounding area, (sample B), clients had to be receiving services on July 1 and could not have been discharged between July 1, 1999 and October 31, 1999 (when transfer among agencies occurred in this area). Children were again excluded and clients whose care plan indicated that they were to be discharged within 60 days. A random number generator was used to select the study samples from

among eligible clients.

Once the random sample was chosen, descriptive data for these clients were obtained from the CCAC's computerized Client Service Plan record: age, gender, diagnosis (ICD9 code and descriptors), and living arrangements (live alone, live with family, live with friends, live with other residents, live with spouse). Service delivery data were sought for July 1, 1998 to June 31, 1999 for sample A and from March 1, 1999 to February 28, 2001 for sample B. These data included: types of service(s) received (nursing, homemaking, therapeutic), vendor id, start and end date of service plan, billing units, and billing cycle (monthly, bi-monthly, etc). Other information extracted included: referral source (hospital, community, etc), referral reason (assistance with daily living, assess and treat, caregiver support, rehabilitation, etc), and treatment site (private home, nursing home, etc), treatment goal (delay or prevent deterioration, return to total self care, adjust to altered function status, etc).

Obtaining Client Information from Service Provider Agencies

Using CCAC file data, we identified which of nine nursing and homemaking agencies who supplied services to the HW-CCAC had provided services to a given client in the sample during the period of interest. Each agency was asked to provide client-specific information about the home visits made to this client while their agency served them. Requested information included: the number of service providers who saw the client during a month, the number of visits the client received per month, the

number of visits in a month provided to the client by the service provider who had done the most home visits, and the total number of different service providers the client had seen from the agency during the period of service (or the year for clients receiving services for the entire period). We also requested the reasons for each provider change. This aspect of our analysis was abandoned after discovering that this information can not be retrieved retrospectively on a per client basis.

Agencies had difficulty abstracting other required information which was either available by reviewing charts, reviewing old computer printouts or downloading the variables from computerized systems. A researcher worked with each agency to find the easiest way to retrieve the needed information. Sometimes this involved extracting the data from client files, coding it and entering it on our data base. At other times, she was able to extract the information directly from computerized data systems or assist the agency in having it extracted and then merge it with the main file. Files for some clients were incomplete or missing. For two agencies, the data for the month of July 1998 were no longer available.

The data base was initially organized by agency to allow easy entry of data from multiple agencies for a client. We subsequently converted the data to organize the file by client and anonymized the data. A client could have service information from one or more agencies during the twelve months they were eligible for study and could have service data for nursing services, homemaking and personal support services or both

types of service.

Determining Which Clients Were Transferred

The transfer status of a client could not be ascertained directly from the records. Transfer was inferred as occurring if a client ceased to receive services from one agency (as indicated in the CCAC service data records) and began to receive the same type of services from another agency. If six or more months elapsed between the end of service from one agency and the start of service by another agency supplying the same type of service, the client was considered not to have transferred as it was more likely that they ceased receiving services for a period of time and resumed receiving services at a later date.

Information About Case Conferences

We planned to extract case conference information from the HW-CCAC files. However, this information was not coded and only recorded in text files, making it difficult to find and extract. If no indication of a case conference was found, we could not be sure that no case conference had occurred or whether human error was responsible. We obtained information about case conferences for the year of interest for each sample member from the Ministry of Health and Long Term Care's Client and Services Information System file. These data are believed to be accurate as they are coded using billings by service agencies for case conference attendance.

Setting Limits on Extent of Agency Data Loss

We set rules about how much missing information would be acceptable for clients to be included in the analysis of data regarding service providers. The research team decided that clients missing information from an agency or missing 20% or more of the data regarding service providers would be excluded from these analyses.

Analysis

After data cleaning and checking, descriptive analyses (frequencies, distributions, means, etc) were used to examine the data using SPSS-PC version 10.0. We checked on the extent to which the two samples differed, excluding only variables obtained directly from service provider agencies. Particularly, we were interested in the extent to which clients were transferred and the relationship between transfer status and having a case conference. The number of clients for whom data were available for analysis of service provider data was determined. Clients available for and excluded from the analysis of service agency data were compared on key demographic variables and transfer and case conference status to ascertain whether such data loss created bias. Service provision variables for the entire year or the episode of care by service type (nursing or homemaking/personal support services) were obtained. They included: total service providers seen, total visits, length of service in months, mean number of service providers seen monthly and mean number of visits monthly. Demographic and service provision differences between the clients in the two samples and among clients who received different service combinations (homemaking only, nursing only, both

homemaking and nursing) were examined using ANOVA and t-tests.

To examine how the introduction of transfers between agencies affected the total number of providers seen by clients, we compared clients who transferred to clients who did not, controlling for length and intensity of service provision. We also examined the service patterns of clients who transferred before and after their transfer. Mean number of providers seen monthly, mean percentage of care by the provider providing the most care during a month and mean visits monthly were calculated by averaging the respective services before and after the transfer month for each transferring client. The month the client transferred was not included in this latter analysis.

We examined correlates of mean number of providers seen monthly, mean percentage of visits by highest provider monthly and total providers seen using regression analysis. Given their skewed distributions, we used the log of mean number of providers and visits by most frequent provider to approximate the normal curve. We first entered client descriptors (age, gender, live alone (yes/no), hospital referral (yes/no), number of diagnoses and mobility impairment (yes/no) (mobility impairment listed as primary diagnosis), then length and number of types of service were entered, next transfer (yes/no) and case conference status (yes/no) were entered and, finally total number of visits was entered. The final model contained only those variables that had been important in one of the partial models. Separate regression equations were used for the three groups according to the types of services received: 1) both

homemaking and nursing 2) nursing only 3) homemaking only.

RESULTS

EXAMINING CHARACTERISTICS FOR ALL CLIENTS

Description of sample for each period and overall

Demographic descriptors, information about types of services and numbers of agencies, transfer status and case conferences were available for the entire sample. These are described in Table 1. A few differences were noted between Sample A and B. The clients in the city core were somewhat older, more likely to live alone, more likely to be referred from hospital and more likely to have had a case conference. Overall 13.3% of clients had transferred to another agency; this was significantly different ($p < 0.000$) in the two samples with 21.5% of clients in sample A transferring agencies compared to 9.3% of clients in Sample B. Clients in the core city (sample A) had somewhat fewer diagnoses, more months of service and received more services.

Most clients were referred (referral reason) to the HW-CCAC for assessment and treatment and assistance with daily living (86% Sample A and 95% Sample B) of six possible reasons and most were treated (treatment site) in their home (97% Sample A and 94% Sample B). Although there were ten possible treatment goals, the treatment goal listed for most clients in the sample was to delay or prevent deterioration or to help the client adjust to altered function status (80% Sample A and 73% Sample B). These variables were not used in subsequent regression analyses.

Differences between those who transferred and those who did not

Comparing clients who transferred agencies to those who did not, we found (see Table 2) that clients in Sample A who transferred were younger than those who did not transfer. For both samples, clients who were transferred had more months of service by agencies and more types of service than clients who were not transferred. Clients who transferred were more likely to have a case conference than clients who did not transfer (8.8% vs 5.2%); although the difference was not significant ($p=0.153$).

Analysis of extent of loss in service provider data

As noted earlier, in some cases, we were not able to obtain information on client's contacts with one or more agencies because files were missing or not available and, in other cases, where a client file was available at agencies, we were unable to obtain information about services for one or more months because files had some missing information. Using the cutoff rules for missing data set before data analysis began, 50 clients in sample A ($n=200$) had complete information, 122 were missing less than 20% of information, 24 were missing complete information from one or more agencies and 4 were missing 20% or more of the service information although information was received from all agencies. Likewise, 306 clients in sample B ($n=400$) had complete information, 22 were missing less than 20% of information, 37 were missing all information from one or more agencies and 35 were missing 20% or more of the service information although information was received from all agencies. These latter two groups (24 + 4 or 14% from Sample A; 37 + 35 or 18% from Sample B) were

excluded for analyses involving service providers. Thus, 172 clients from sample A and 328 clients from sample B were included in analyses of data that involved number of service providers.

Table 3 compares included and excluded clients on key demographic and service variables. We found no difference by age, sex, whether clients had a case conference or were living alone. Eleven percent of the included sample transferred agencies compared to 24% of excluded cases, a significant difference overall and in each time period. Compared to clients in the excluded sample, clients in the sample retained in the analysis of service provider data received more months of service from all agencies, used fewer agencies, and used fewer types of services to a maximum of three (nursing, homemaking, therapeutic). These differences, when considered individually, were significant overall and in both time periods. Yet, when all of these variables were allowed to enter a stepwise logistic regression equation, once number of agencies entered the model, the other variables were not significantly related to excluded or included status (Standardized Beta = $-.676$, Wald = 25.2 , $df=1$, $P<0.001$). Excluded clients were involved with a greater number of agencies (excluded $O(sd)=1.94(.96)$; included $O(sd)=1.51(.67)$; $F=29.190$, $P<0.001$).

EXAMINING SERVICE PROVIDER DATA

Do transferred and non-transferred clients differ?

Clients who transferred saw more total providers and more providers per month

than clients who did not transfer. Clients who transferred also had more total visits and more visits per month. The differences were significant overall and for both samples (see Table 5). Clients who received both homemaking and nursing services were significantly more likely to transfer than clients who received nursing or homemaking alone. This could help explain the higher level of service delivery among the transfer group. To examine this hypothesis we developed a regression equation with dummy variables for the service types and simultaneously considered demographic and service provider variables to explain transfer. We found people who transferred were more likely to be clients receiving both homemaking and nursing services (Standardized Beta = .300, Wald = 19.9, df=1, $P < 0.001$). This variable was the only one that entered the regression model.

Is there a difference in mean monthly number of service providers before and after transfer?

Thirty one of the retained sample A clients transferred agencies and 25 of the retained sample B clients transferred agencies. No differences were seen in the mean number of providers they saw monthly before and after transfer. (before $O=4.7$ $SD=3.6$; after $O=4.8$ $SD=3.6$; $t=-.313$; $p=0.76$).

Are there differences among clients who received different types of services?

Comparing clients who received both homemaking and nursing, nursing only and homemaking only we found clients receiving homemaking services only were older,

tended to be female and were more likely to live alone (see table 5). Clients who received both homemaking and nursing services were the most likely to experience a transfer. Younger clients were more likely to receive nursing services alone.

Clients receiving homemaking services had the highest proportion of visits (80%) during a month by one provider. Those clients who received both homemaking and nursing services had more visits per month than the others. Although the months of service are similar for clients who received homemaking services only and both homemaking and nursing services, the average total number of service providers seen by the client more than doubled when both services were supplied (see table 5) although total visits did not quite double. Total service providers seen during the episode of care was similar for nursing alone and homemaking alone although for nursing, the average total service months are 3.5, while homemaking clients received an average of 9.5 months of service. This suggests greater consistency of personnel is maintained by homemaking providers.

Correlates of total number of service providers, proportion of monthly services delivered by the most frequent provider and mean service providers per month

When we examine predictors of total number of service providers seen during this period of care, we found that total number of providers seen by clients who received both homemaking and nursing services was positively associated with the total number of services received and, whether clients transferred agencies (37 of the 56

transfers that occurred were in this group) . The regression model accounted for 72% of the variance. The total number of providers seen by clients receiving homemaking services increased with the number of services received. The model accounted for 58% of the variance. The total number of providers seen by clients receiving nursing services increased with the number of months of services and total services received; the model accounted for 62% of the variance. (see Table 6)

For clients who received homemaking only and homemaking and nursing services, the more visits a client received during a month, the less likely a single service provider did a high proportion of these visits. This variable accounted for all of the variance explained in both groups (27% and 18% respectively; see Table 6). For the group that received nursing services only, none of the variables examined were related to the proportion of visits made by the most frequent provider. How many service providers a client saw during a month was also explained best by the total number of visits received during a month. For each client group, this variable accounted for all or most of the explained variance (see Table 6). However, in the group that received both homemaking and nursing services, clients who lived alone were likely to see fewer providers than clients who lived with other people.

Discussion

The frequency of services received and the number of different types of services clients needed were the major factors in determining how many different service

providers they saw during a month and the proportion of visits done by the primary provider (person visiting the most frequently). As Smedby et al <10> have discussed, the proportion of total visits by one given provider is sensitive to utilization and decreases as visits increase. Thus, it is not surprising that service intensity is associated with these measures. It is interesting that service intensity was not related to percentage of care by the main service provider for nursing services. Whether a client transferred was also related to total number of providers seen over the episode of care (or year) studied. This finding suggests that the changes in personnel within an agency due to human resource problems do not affect the number of service providers a client sees as much as a transfer between agencies. Being transferred nearly doubled the number of providers a client saw during the care episode. Similarly, it is not surprising that clients who received both nursing and homemaking services were more likely to be transferred than clients who received only one service. They were at higher risk of transfer as they were in both the nursing and homemaking pools, even though in the first transfer period, the CCAC took care not to transfer both services for a client. If the CCAC transfers clients who are heavy users of service, they can more quickly redistribute market shares of service delivery to agencies that have gained or lost market share in the RFP competition.

Contrary to our expectations, the number of case conferences held among the transferred group was not significantly greater than in the group of clients who did not transfer. We note that far fewer case conferences were held in the second 12 month

period studied. If the rate had remained at the same as in the first period, we would have expected 36 case conferences to occur rather than 16. Further, the few case conferences that occurred were for clients who had not been transferred but among this group a decline in case conferences is also noted. The reasons for this change between time periods is not known. It could relate to the increasing case loads of the CCAC case managers during this time which may have affected the likelihood of having a case conference.

Using our rule for determining that a client transferred between agencies (billings ending at one agency and shortly thereafter starting at another agency) it appears that some clients transferred outside the RFP process. In the second time period, 3.5% of the sample changed homemaking agencies. Yet, only transfer of nursing services was necessitated by the RFP process. We left this group in our transfer group, a decision that some analysts might differ with. Some client transfers between agencies, irrespective of the RFP process; but, the rate of such transfers is much lower than when changes occur in agencies' market share.

Information gathered in a concurrent qualitative study <11> examined how these agencies describe their benchmarks for consistency of personnel. It suggests that current decision-making about contracting relies on fairly crude information about how consistency of service delivery personnel will be managed. Such benchmarks were defined in broad terms (e.g., 80% of care will be delivered by a team of [specified]

number of workers). Often the length of time over which benchmarks are measured was not indicated. Client characteristics and their effect on size of the team used to serve them were not mentioned. No differentiation is made by the intensity or nature of service delivery specific clients may require. Thus, it is not surprising that no difference was found in the number of providers a client saw before and after transfer. Williams et al have speculated that given the paucity of information about quality available and the difficulty comparing and evaluating quality claims by service provider agencies, the RFP process may lead to selection of the lowest cost provider, as costs can more readily be compared. We cannot confirm this but we can say that the information available to the CCAC regarding consistency of service delivery personnel did not allow ready comparison among agencies.

A higher proportion of visits to clients who received homemaking services were made by one provider (mean 80%) during a month than to clients who received both nursing and homemaking services or nursing services alone (mean 68%). It appears that it is easier to maintain consistent homemakers than consistent nurses. This difference may reflect the fact that nursing visits for some clients may be twice a day or include weekends, while this is rarer for homemaker's visits. A visit in the morning and then again at night would usually be made by different nurses. It may also reflect home care agencies' need to deal with both acute and chronic patients. Nurses often have specialized skills such as using IVs, etc, while homemakers' skills are more generic. Thus, nurses are more likely to be asked to change their schedules to accommodate the

needs of new acute care patients that require a specialized skill. Nurses also have a less predictable schedule than homemakers. A nurse may be delayed by several hours because a client required more care than anticipated or a crisis developed. Under such circumstances, agencies also send in replacement nurses.

Consistency of provider is often seen as important to ensuring continuity of healthcare and to promoting high quality health care.<12,13,14> In home care, achieving consistent personnel may be more important than in other health care sectors as the client may need several different types of service providers and the home is the venue for care delivery. Elderly clients often find having many different service providers visit their home a difficult experience.<15> In home care, consistent personnel can be a vehicle for promoting continuity of care as they are more likely than a succession of different providers to be knowledgeable about the service needs and client's preferences, be able to observe changes in the client's behaviour or physical condition and establish good rapport with the client and other members of the care team.<15>

The study has several limitations. First, a differential loss of data for clients who transferred occurred which may affect our examination of service provider data. Particularly, the clients excluded were involved with more agencies. It is not known whether they were more likely to see fewer service providers in the months after transfer, but this appears unlikely given the experience of clients who were involved with

many agencies. Secondly, we had to rely on agency records for service provider data. Several agencies had already discarded information about clients served in July 1998 from their data files, which caused some missing data. In other cases, files were incomplete because they were inadvertently left in the client's home or because they were currently in use (at client's home) and thus not available to us. We tried to minimize the influence of these problems on the analysis by setting rules for how we would treat such cases before the analysis began.

The introduction of managed competition into home care service delivery in Canada is new. The processes used to establish which agencies are awarded new contracts and may gain or lose market share are still being refined. This study looked at the first two waves of RFPs in one Ontario CCAC and found no obvious benefit, in terms of greater provider consistency, created by this process.

Acknowledgements

The authors are grateful to the home care agencies in the City of Hamilton for their cooperation with this study. We thank the members of our Research Advisory Group for their contributions to this study. This study was funded by a grant (# RC-028606) received from the Canadian Health Services Research Foundation and the Ontario Ministry of Health and Long Term Care.

Table 1: Home Care Client Descriptors						
	Sample A (N=200)		Sample B (N=400)		Total (N=600)	
	N		N		N	
Age Mean (SD) ***	200	79.8 (13.5)	400	74.4 (15.4)	600	76.2 (15.0)
% Male	62138	31.0%	1372	34.3%	2e+05	33.2%
% Female		69.0%	63	65.8%		66.8%
% Living Alone ***	103	51.5%	98	24.5%	201	33.5%
% Hospital Referral ***	23	11.5%	10	2.5%	33	5.5%
% Case Conference **	18	9.0%	16	4.0%	34	5.7%
% Transfer ***	43	21.5%	37	9.3%	80	13.3%
% Homemaking ***	27 **	13.5%	14 **	3.5%	41 **	6.8%
% Nursing	17	8.5%	24	6.0%	41	6.8*
# of Diagnoses (Min 0, Max 3) Mean (SD) **	200	1.1 (.37)	400	1.2 (.50)	600	1.2 (.46)
# Months of Service (Max 12) Mean (SD)***	200	10.3 (2.2)	400	6.4 (4.5)	600	7.7 (4.3)
# Types of Services (Max 3 *) Mean (SD)	200	1.9 (.83)	400	1.9 (.80)	600	1.9 (.81)
# of agencies (Max 5) Mean (SD) **	200	1.7 (.81)	400	1.5 (.70)	600	1.6 (.75)

*** sig at 0.001 level; ** sig at 0.01 level; * sig at 0.05 level

+ homemaking, nursing, therapeutic service; ** one individual in each sample transferred both nursing and homemaking agencies.

**Table 2: Client Descriptors For Those Who Transfer and Did Not Transfer
All Clients N=600**

	Sample A (N=200)		Sample B (N=400)		Total (N=600)	
	Transferred (N=43)	Did Not Transfer (N=157)	Transferred (N=37)	Did Not Transfer (N=363)	Transferred (N=80)	Did Not Transfer (N=520)
Age O (SD)	76.3 (13.6) *	80.8 (13.4)	72.2 (19.6)	74.6 (14.9)	74.4 (16.7)	76.5 (14.7)
% Male	29.0%	71.0%	10.9%	89.1%	16.6%	83.4%
% Female	18.1%	81.9%	8.4%	91.6%	11.7%	88.3%
% Living Alone	41.9%	54.1%	16.2%	25.3%	30.0%	34.0%
% Hospital Referral	12.1%	9.3%	0	2.8%	5.0%	5.6%
% Case Conference	16.3%	7.0%	0	4.4%	8.8%	5.2%
# of Diagnoses (Min 0, Max 3) O (SD)	1.1 (.35)	1.1 (.37)	1.3 (.45)	1.2 (.51)	1.2 (.40)	1.1 (.47)
# Months of Service (Max 12) O (SD)	10.9 (1.8)	10.2 (2.3)	7.6 (3.8)	6.2 (4.6)	9.4 (3.3)	7.4 (4.4)
# Types of Service (Max 3⁺) O (SD)	2.3 (.83) ***	1.8 (.80)	2.4 (.79) ***	1.8 (.79)	2.3 (.81) ***	1.8 (.79)
# of Agencies O (SD)	2.8 (.65)***	1.4 (.58)	2.9 (.67)***	1.4 (.55)	2.8 (.66) ***	1.4 (.55)

*** sig at 0.001 level; ** sig at 0.01 level; * sig at 0.05 level
+ homemaking, nursing, therapeutic service.

Table 3: Description of Clients Included and Excluded from Analysis of Service Provider Data

	Sample A (N=200)				Sample B (N=400)				Total (N=600)			
	N	Included (N=172)	N	Excluded (N=28)	N	Included (N=328)	N	Excluded (N=72)	N	Included (N=500)	N	Excluded (N=100)
Age Mean (SD)	172	80.4(13.3)	28	76.5 (14.7)	328	74.7(14.8)	72	72.7(17.7)	500	76.7(14.5)	100	73.7(16.9)
% Male	501	29.1%	12	42.9%	111	33.8%	26	36.1%	161	32.2%	386	38.0%
% Female	22	70.9%	16	57.1%	217	66.2%	46	63.9%	339	67.8%	2	62.0%
% Living Alone	86	50.0%	16	60.7%	78	23.8%	20	27.8%	164	32.8%	36	36.0%
% Hospital Referral	23	13.4% *	0	---	8	2.4%	2	2.8%	31	6.2%	2	2.0%
% Case Conference	15	8.7%	3	10.7%	11	3.4%	5	6.9%	26	5.2%	8	8.0%
% Transfer	311	18.0% **	12	42.9%	256	7.6% *	12	16.7%	562	11.2%***	241	24.0%
% Homemaking	912	11.0%	85	28.6% **	20	1.8% **	84	11.1%	532	5.0% **	69	16.0 **
% Nursing		7.0%		17.9%		6.1%		5.6%		6.4%		9.0
# of Diagnoses (Min 0, Max 3) Mean (SD)	172	1.1 (.39)	28	1.0 (.19)	328	1.2 (.50)	72	1.2 (.51)	500	1.2 (.47)	100	1.1 (.45)
# Months of Service (Max 12) Mean (SD)	172	10.7 (1.3) ***	28	7.9 (4.1)	328	6.9 (4.5) ***	72	3.8 (3.8)	500	8.2 (4.1) ***	100	4.9 (4.3)
# Types of Services (Max 3 +) Mean (SD)	172	1.9 (.83) **	28	2.3 (.72)	328	1.8 (.79) **	72	2.1 (.82)	500	1.8 (.81) ***	100	2.2 (.80)
# of agencies (Max 5) Mean (SD)	172	1.6 (.71) ***	28	2.4 (1.1)	328	1.5 (.65) ***	72	1.8 (.86)	500	1.5 (.67) ***	100	1.9 (.96)

*** sig at 0.001 level; ** sig at 0.01 level; * sig at 0.05 level; + homemaking, nursing, therapeutic service; ** one individual transferred in both nursing and homemaking.

**Table 4: Provider Services Received by Clients who Transferred and Did Not Transfer
N=500**

	Sample A (N=172)		Sample B (N=328)		Total (N=500)	
	Transferred (N=31)	Did Not Transfer (N=141)	Transferred (N=25)	Did Not Transfer (N=303)	Transferred (N=56)	Did Not Transfer (N=444)
Mean # of Providers Monthly O (SD)	4.4 (3.5)*	3.1 (2.6)	5.4 (2.9) **	3.5 (3.0)	4.8 (3.3) ***	3.4 (2.9)
Mean Monthly % Care by Primary Provider O (SD)	74% (16)	77% (19)	63 (12) *	73 (23)	69% (15)	74% (22)
Total Service Providers O (SD)	23.2 (18.8) **	14.3 (13.4)	24.5 (13.5) ***	11.0 (11.9)	23.7 (16.5) ***	12.0 (12.5)
Mean # of Visits Monthly O (SD)	17.2 (17.4)*	12.1 (11.3)	18.8 (16.3) **	11.5 (12.7)	17.9 (16.8) ***	11.7 (12.2)
Total Visits O (SD)	191.9 (203.4) *	129.3 (126.2)	173.8(157.8)**	86.0 (132.0)	183.8 (183.1)***	99.7 (131.6)
Services Received:						
Homemaking & Nursing	67.7% ***	34.8%	64.0% **	33.3%	66.1% ***	33.8%
Homemaking Only	29.0%	65.2%	8.0%	40.9%	19.6%	48.6%
Nursing Only	3.2%	0	28.0%	25.7%	14.3%	17.6%

*** sig at 0.001 level; ** sig at 0.01 level; * sig at 0.05 level
+ homemaking, nursing, therapeutic service.

Table 5: CCAC Client Descriptors by Types of Services Received All Eligible Clients (n=500)						
	N	Nursing & Homemaking (N=187)	N	Nursing Only (N=86)	N	Homemakin g Only (N=227)
Age O (SD) ***	187	77.6 (12.6)	86	66.1 (15.2)	227	80.0 (14.0)
Male **	651	34.8%	3947	45.3%	571	25.1%
Female	22	65.2%		54.7%	70	74.9%
Living Alone **	63	33.7%	15	17.4%	86	37.9%
Hospital Referral **	9	4.8%	0	--	22	9.7%
Case Conference *	15	8.0%	0	--	11	4.8%
Transfer ***	37	19.8%	8	9.3%	11	4.8%
# of Diagnoses O (SD)	187	1.2 (.45)	86	1.2 (.54)	227	1.1 (.45)
# Months of Service (Max 12) O (SD) ***	187	8.9 (3.8)	86	3.5 (3.3)	227	9.5 (3.4)
# Types of Services (Max 3 +) O (SD) ***	187	2.7 (.47)	86	1.2 (.37)	227	1.4 (.49)
# of Agencies O (SD) ***	187	2.3 (.48)	86	1.1 (.36)	227	1.1 (.22)
Mean # of Service Providers per Month O(sd) ***	187	5.4 (3.7)	86	3.4 (2.3)	227	2.1 (1.3)
Mean Monthly % of Care by Primary Provider O(sd) ***	187	68 (18)	86	68 (31)	227	80 (18)
Total Service Providers O(sd)***	187	22.4 (16.7)	86	7.9 (6.8)	227	8.0 (6.7)
Mean Monthly Visits (service intensity) O(sd) ***	187	18.8 (17.0)	86	7.6 (7.1)	227	8.9 (7.6)
Total Visits O(sd) ***	187	170.5 (190.0)	86	28.3 (39.0)	227	89.2 (86.4)

*** sig at 0.001 level; ** sig at 0.01 level; * sig at 0.05 level
+ homemaking, nursing, therapeutic service.

Table 6: Results of Regression analysis Examining Factors Linked with Total Providers Seen, Mean Proportion of Visits During a Month by the Most Frequent Providers, Mean Number of Providers Seen Monthly

Predictors of Total Providers During the Episode
Standardized BetatSig

Homemaking and Nursing Services
total visits during episode.83321.2600.000
transfer.0862.1990.029
F=243.73df=2,184p=0.000adj R-squared=.72

Homemaking Services Only
total visits during episode.76217.6390.000
F=311.13df=1,225p=0.000adj R-squared=.58

Nursing Services Only
total visits during episode.4975.4890.000
months of service.3684.0630.000
F=70.76df=2,83p=0.000adj R-squared=.62

Predictors of Proportion of Monthly Visits by Most Frequent Provider

ST. BetatSig
Homemaking and Nursing Services
Mean total visits
per month-.508-7.9660.000
F=34.807df=2,184p=0.000adj R-squared=.27

Homemaking Services Only
Mean total visits
per month-.433-7.1970.000
F=51.798df=1,225p=0.000adj R-squared=.18

Predictors of Mean Number of Providers Seen Monthly

ST. BetatSig
Homemaking and Nursing Services
Mean total visits
per month.80018.530.000
Live alone-.103-2.3900.018
F=176.59df=2,184p=0.000adj R-squared=.65

Homemaking Services Only
Mean total visits
per month.72115.6280.000
F=244.24df=1,225p=0.000adj R-squared=.52

Nursing Services Only
Mean total visits
per month.7219.5400.000

F=91.01df=1,84p=0.000adj R-squared=.51

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