

Measuring Consistency of Personnel in Home care: Current Challenges and Findings

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Abstract

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Consistency of personnel is important to ensuring continuity of care for home care clients. It is particularly important to those clients who are at high risk for adverse effects when provider changes occur. Information about the extent to which clients experience consistency of personnel is difficult to collect in Ontario. It resides with individual provider agencies rather than with the Community Care Access Centres (CCACs) that arrange service delivery. We will present findings from the Continuity of Care in Home Care study which obtained information directly from service provider agencies on the number of providers that 500 CCAC clients saw. These clients received either nursing or homemaking services or both. Factors linked with the mean number of providers experienced by a client and with the total number of providers experienced by a client during up to a year of service delivery will be highlighted. Factors affecting the frequency of provider changes will be discussed along with the implications of our findings for clients, service providers, agencies and policy makers.

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Home care delivery is complex as it usually involves tailoring the services provided (personal care, homemaking, nursing and other therapeutic services) to the specific needs of the client and coordinating the care delivered by a team of service providers. When consistent personnel deliver needed services, it is much easier to achieve continuity of home care (Woodward, Abelson, Tedford & Hutchison, 2002). It is simpler for consistent personnel to develop rapport with the client (and family caregivers) than workers that change frequently. Rapport is needed to negotiate how the care plan will be carried out and acquire the information needed to deliver care effectively in the home.

Communication among the people involved in home care delivery (clients and their care givers, case manager, service providers and physicians) also contributes to care continuity. The number of types of people who need to communicate with each other and the client and caregiver is large. Communication is less difficult and more effective when personnel are consistent. Home care workers require three types of information: about the client's care needs, goals and progress; their preferences and concerns; and the way the household is organized. Every client is somewhat different

from the next and has a home that is organized somewhat differently. The tacit knowledge about these differences that home care workers develop about the clients and their situations is not readily communicated to a succession of workers. When consistent personnel are lacking, clients complain that they must spend a considerable portion of a home care visit orienting a new worker to their home and the ways in which they need assistance. This leaves less time in which the service provider can carry out the tasks required to assist the client.

Consistent personnel are important to the team delivering home care. Team members need to develop good working relationships with each other. The home care “team” is large. But, unlike most health care teams, home care team members rarely, if ever, meet. Their usual ways of communicating are largely passive (leaving voice-mail messages or writing brief notes in a chart kept in the home). They need to be able to rapidly evaluate communications received about the client. For example, a family doctor, receiving a call about a patient whom a home care nurse is visiting, must assess the importance of the nurse’s observations. Over time, team members get to know each other and can better judge about the importance and urgency of situations reported to them by other team members (Woodward, Abelson, Tedford & Hutchison, 2002).

In Ontario, home care delivery is organized by government transfer agencies, Community Care Access Centres (CCAC), that assess clients’ need for home care, provide case management and arrange for needed services to be delivered by nonprofit

and for profit community agencies with whom they hold contracts. Contracts for service delivery are awarded to community agencies after a competitive bidding process, which begins with the issuance of a request for proposals (RFP) by CCAC's. Contracts are to be awarded on the basis of quality and price (Witmer, 2002). One of the indicators of quality that is used is the consistency of personnel promised (Woodward and Layton, 2002). This is not surprising. We have already pointed out how consistent personnel are important to achieving continuity in care delivery in the home. When new service contracts are awarded, some clients must be transferred to redistribute a market share among the agencies.

This study examined the consistency of personnel achieved during an episode of home care (or year if the episode lasted longer than a year) for a random sample of home care clients at one CCAC. We were interested in identifying factors that were associated with greater consistency of personnel. Given the high turnover of workers in the home care field, we were interested in knowing if transfer to another agency during an episode of care affected consistency of personnel during their episode of care. Three different measures of consistency were explored. We also sought information about the factors that prompt changes in service providers. The problems encountered in collecting information about consistency of personnel are discussed.

Method

This study involved examination of administrative records, in-depth interviews

with major stakeholders, and periodic meetings with our Advisory Group of representatives from the service provider agencies and the CCAC.

Administrative Data

We studied client records at one CCAC during two year-long periods during which the first two rounds of the competitive contracting process occurred. The first RFP cycle involved both nursing and homemaking services. It affected clients who lived in the core city area which receives about 30% of the services purchased by the CCAC. The CCAC sought to minimize impact on clients by allowing only one service (either nursing or homemaking) to be transferred per client. The outcome of the first RFP cycle resulted in the transfer of clients to new service providers from November 1998 to January 1999. We studied the utilization of home care and nursing services by a random sample of 200 core city clients from July 1998 through June 1999. 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. We studied the utilization data (March 1999 to February 2000) for a random sample of 400 clients present during the second transfer period. These two samples were combined for the data analyses reported.

Although we used the CCAC files to identify members of the sample, information was required from nine nursing and homemaking agencies about the services that they had provided to these clients during the period of interest. Each agency was asked to

provide client-specific information about the home visits made to these clients 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 to the client made 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. However, we soon discovered that this last information could not be retrieved retrospectively on a per client basis and instead sought such information through interviews.

Information about a transfer was not directly noted on the CCAC administrative data base. Rather, we inferred that a transfer occurred if one agency stopped billing the CCAC for a particular type of service for a given client and another agency began to do so.

After data cleaning and checking, descriptive analyses (frequencies, distributions, means, etc.) were used to examine the data using SPSS-PC version 10.0. Clients available for and excluded from the analysis of service agency data were compared on key demographic variables and transfer 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) 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 among clients who received different service combinations (homemaking only, nursing only, both homemaking and nursing) were examined using ANOVA and t-tests.

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. Because their distributions were skewed, 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) was 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

Agencies had difficulty abstracting the required information about service provision and number of service providers. A researcher worked with each agency to find the easiest way to retrieve the needed information. Often it was available by

reviewing client charts or old computer printouts although sometimes we were able to help them download the variables from computerized systems. Files for some clients were incomplete or missing, either because the file (or parts of it) was no longer available, had been left in the home or was again in the home as the client was also receiving services currently. For two agencies, data for the month of July 1998 were no longer available. Given these problems, we set rules about how much missing information would be acceptable for clients to be included in the analysis of data regarding consistency of service providers. The research team decided that clients missing information from an agency or missing 20% or more of the data would be excluded from these analyses.

Applying these criteria, 100 of the 600 clients initially chosen had to be excluded from the analysis. When we examined the factors that differentiated these two groups of clients, using a stepwise logistic regression, only one variable was significant ($p < 0.001$); excluded clients were involved with more agencies than non-excluded ones. The other variables that seemed important in bivariable analyses did not contribute to explaining who was excluded once number of agencies was considered. (See Table 1.) Given that we excluded people who did not have information from an agency, people who were seen by several agencies had a greater chance of being excluded.

In our sample of 500, the largest group of clients received homemaking services only ($N=227$), followed by the group ($N=187$) who received both nursing and

homemaking services, while 86 received nursing services only. A description of each of these groups is found in Table 2. Those receiving homemaking services were significantly older than those receiving nursing services only and received more months of service. Males were more likely than females to receive only nursing services. Clients who received only nursing services were less likely to live alone. Clients who received both nursing and homemaking services in their home were more likely to have been transferred to another agency. Clients receiving only homemaking services saw the fewest different providers in a month and had the highest (80) percentage of care from one provider during a month. They saw an average of 8 different providers during their care episode despite having the longest episodes of care (mean= 9 months). Clients who received both homemaking and nursing services saw the greatest number of different providers in a month and, on average, 68% of their care for a given service came from one provider. Clients receiving only nursing services had the shortest episodes of care (mean=4 months), during which they saw 3 providers per month on average and saw a mean of 8 providers during the episode of care. Again, 68% of their care was delivered by one provider.

There are several ways that one might measure consistency of provider. One is to consider the total number of providers seen during an episode of care. The 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 3.)

Another way of thinking about consistency of providers is to measure the proportion of visits for each type of care done by the service provider who visits the most frequently. For clients who received only homemaking 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 3). Clients who had fewer visits were more likely to have a single, consistent provider. However, for the group that received nursing services only, none of the variables we examined were related to the proportion of visits made by the most frequent provider.

Finally, one can consider how many different service providers a client typically sees during a month (by averaging the monthly total across all months of service). This measure of consistency of personnel was also explained best by the total number of visits received during a month. For each client group, it accounted for all or most of the explained variance (see Table 3). However, in the group that received both homemaking

and nursing services, another variable was also important. Clients who lived alone were likely to see fewer providers than clients who lived with other people.

The administrative records we used provided no information about the reasons for changes in providers over time. In interviews with service providers and clients, and discussions with our Advisory Group of home care administrators, many potential reasons for changes in providers, either temporarily or permanently, were mentioned. Reasons for temporary changes included illness and vacation time, scheduling difficulties, or that skills of a particular service provider (usually the nurse) are needed more urgently by another client. These latter two reasons may sometimes lead to permanent changes. Reasons for permanent changes in personnel included requests by either the client or service provider for changes because of perceived incompatibility and job turnover in agencies. Service providers may choose to move to another agency, to another sector of the health care system or to leave the health care field.

Discussion

Our study pointed out interesting differences as well as some similarities among the measures of provider consistency we employed. Each measured somewhat different aspects of consistency. Total number of providers seen picked up the effects of changes induced by the RFP process on clients. Clients receiving both nursing and homemaking services who experienced a transfer from one agency to another had a higher total number of providers during an episode of care than those who did not. It is interesting

that the total number of providers seen was not related to the length of time that the client received homemaking care only (at least to a maximum of one year) but length of time that services were delivered was important when a client received nursing care only. This finding suggests that once the providers of homemaking services are established, they tend remain more stable over time. The home care nurses who visit a home are more likely to change over time. It is unfortunate that the reasons for these differences were not available within the data set.

The proportion of visits done by the most frequent (or primary) provider is another way to examine consistency of personnel. As has been pointed out previously (Smedby, Eklund, Eriksson & Smedby, 1986), this measure suffers from a problem that is inherent in the way it is measured. The more visits made to the home, the more likely the proportion of visits done by one provider will be less than 1. That is, it is easy to have 100% of visits done by the same provider if only one visit occurs per month. The association we see with visit frequency is to some extent, predictable. This finding should also remind us that when agencies set benchmarks for performance, agencies with clients who receive few visits may appear to perform better than agencies with clients who need frequent services. If we are to compare agencies on this measure, we need information from them about the proportion of visits done by the primary provider across a range of visit frequencies. Again, nursing services were different from homemaking services. Among clients receiving only nursing services, there was no association between visit frequency and proportion of services provided by the nurse who

visited most frequently. Why this is so is not clear.

How many different providers visit the home during a month was also associated with the number of visits made. As the number of visits made increased, the number of providers also increased. It should also be noted that the number of visits per month explained more of the variance in the number of different providers seen per month than it did for the proportion of services delivered by the most frequent provider. This finding suggests we also need to examine this variable across a range of visit frequencies.

Among clients receiving both homemaking and nursing services, we found that clients' living arrangements were related to number of different people who visited. It appears that agencies may try to limit the number of different personnel that someone living alone experiences.

Unfortunately, we could not tell the extent to which each of these different reasons for changes in personnel affected consistency of personnel for the clients who were studied. Assigning a reason for a change in personnel can only be done when changes in personnel are gathered prospectively. We also did not have information about the size of the team assigned to a each client by the agency while its was providing services to the client or whether one provider had been assigned to a client as the primary provider. These pieces of information would be important to collect in a prospective study.

Currently, in Ontario, it is very difficult to examine the consistency of home care personnel that clients receive. CCACs record the number of services that a client receives each month during a care episode as they need to keep track of this information for payment purposes. CCACs, while they award contracts for service and manage the service delivery for their clients, do not obtain information about how many different providers deliver those services to a given client. They do not have any way of ascertaining how many different service providers a client saw during a care episode, except by asking on a client by client basis. Such information is found only at the agency level, and in our experience, may not always be readily available. This lack of information makes it difficult to track and compare the consistency of personnel achieved for clients. Understanding the number of people who may be visiting the client in a month or over a care episode is further complicated when more than one agency is simultaneously involved with the client. Some of the problems identified in measuring consistency of personnel may be unique to home care systems in which the management and service delivery functions have been separated. It is also possible to fix these problems by demanding more information from the direct service providers as part of the contract.

Agencies may set benchmarks about consistency of service providers that they say they will meet if awarded a contract (Layton & Woodward, 2000). The benchmark may be expressed as 90% of the visits to a client will be done by the team assigned to the client or, 85% of the visits to a client will be done by the primary provider. However,

much more information is needed from service provider agencies than is currently obtained if the CCACs are to have data systems that provide feedback on how well such benchmarks are achieved. If a high level of consistency in personnel in home care service delivery to clients is a valued aspect of service delivery, greater attention must be paid to how decision-makers can obtain information about how well agencies achieve these goals. Reporting mechanisms must be established. Our study suggests that several types of measures of consistency of personnel would be useful and that this information should be divided into categories related to the frequency of service delivery and the types of services delivered.

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Table 1: Description of Clients Studied and Excluded

	Total (N=600)			
	N	Studied (N=500)	N	Excluded (N=100)
Age Mean (SD)	500	77 (15)	100	74 (17)
% Male	161	32%	38	38%
% Female	339	68%	62	62%
% Living Alone	164	33%	36	36%
% Hospital Referral	31	6%	2	2%
% Transfer	56	11%**	24	24%
% Homemaking	25	5% ⁺⁺	16	16% ⁺⁺
% Nursing	32	6%	9	9%
# of Diagnoses (Min 0, Max 3) Mean (SD)	500	1.2 (.5)	100	1.1 (.5)
# Months of Service (Max 12) Mean (SD)	500	8.2 (4)***	100	4.9 (4)
# Types of Services (Max 3 ⁺) Mean (SD)	500	1.8 (.8)***	100	2.2 (.8)
# of Agencies (Max 5) Mean (SD)	500	1.5 (.7)***	100	1.9 (1)

⁺⁺ one individual transferred in both nursing and homemaking

^{**} significant at 0.01 level

^{***} significant at 0.001 level

Table 2: CCAC Client Descriptors by Types of Services Received All Eligible Clients (n=500)						
	N	Nursing & Homemaking (N=187)	N	Nursing Only (N=86)	N	Homemaking Only (N=227)
Age O (SD) ***	187	78 (13)	86	66 (15)	227	80 (14)
Male **	65	35%	39	45%	57	25.1%
Female	122	65%	47	55%	170	74.9%
Living Alone **	63	34%	15	17%	86	37.9%
Hospital Referral **	9	5%	0	--	22	9.7%
Transfer ***	37	20%	8	9%	11	4.8%
# of Diagnoses O (SD)	187	1.2 (.5)	86	1.2 (.5)	227	1.1 (.5)
# Months of Service (Max 12) O (SD) ***	187	8.9 (4)	86	3.5 (3)	227	9.5 (3)
Mean Monthly Visits O(sd) ***	187	18.8 (17)	86	7.6 (7)	227	8.9 (8)
Total Visits O(sd) ***	187	170 (190)	86	28 (39)	227	89 (86)
# Types of Services (Max 3 +) O (SD) ***	187	2.7 (.5)	86	1.2 (.4)	227	1.4 (.5)
# of Agencies O (SD) ***	187	2.3 (.5)	86	1.1 (.4)	227	1.1 (.2)
Mean # of Service Providers per Month O(sd) ***	187	5.4 (4)	86	3.4 (2)	227	2.1 (1)
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 (17)	86	7.9 (7)	227	8.0 (7)

* sig at 0.05 level

** sig at 0.01 level

*** sig at 0.001 level

+ homemaking, nursing, therapeutic service.

Table 3: Results of Regression Analysis: Factors Associated with Total Providers Seen, Mean Proportion of Monthly Visits by the Most Frequent Provider, Mean Number of Providers Monthly

	Type of Services Received		
	Homemaking & Nursing Services	Homemaking Only	Nursing Only
Predictors of Total Numbers of Providers During an Episode of Care	(+)* total number of visits (+) transferred to another agency	(+) total number of visits	(+) total number of visits (+) months of service
Adjusted R ² (variance explained)	.72	.58	.62
Predictors of Proportion of Monthly Visits by Most Frequent Provider	(-) mean number of visits per month	(-) mean number of visits per month	-
Adjusted R ² (variance explained)	.27	.18	-
Predictors of Mean Number of Providers Seen Monthly	(+) mean number of visits per month (-)** live alone	(+) mean number of visits per month	(+) mean number of visits per month
Adjusted R ² (variance explained)	.65	.52	.51

* positive association

** negative association