# Is Population Mobility an Obstacle to Continuity of Care?

## Attrition Rates Over Five Years in 17 Ontario Practices

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*The University of Western Ontario Hypertension Study provided an opportunity to study attrition rates over a five-year period in the population of 17 family practices in southwestern Ontario. The baseline population consisted of all patients between the ages of 20 and 65 years who were active in the practices in 1978. During the five years of the study, a medical assistant in each practice recorded data on morbidity, mortality, and patients leaving the practice. The follow-up of nonresponders to a demographic questionnaire provided additional data on patient moves.*

*The overall five-year move rate was 13.2 percent for men and 16.6 percent for women. Those in the 20- to 29-year age group had the highest rates, and those in the 30- to 39-year age group had the next highest. The rates for men stabilized after the age of 40 years to between 8 and 10 percent, and for women after 40 years to between 11 and 13 percent. The move rates were higher in urban than in rural practices. Ninety percent of hypertensive patients received continuous care over the five-year period. In southwestern Ontario, population mobility does not appear to be a major barrier to continuing care.*

The population of the United States and Canada is highly mobile. In the United States, 46 percent of persons over the age of 5 years moved house between 1975 and 1980.[1] In Canada 48 percent of husbands in husband-wife families moved house over a similar five-year period. In Ontario, the figure was 47 percent.[2]

If this experience were true for all age groups and in all communities, long periods of continuing care would be exceptional. Family physicians would have little opportunity to build with patients the long-term relationships that have been considered such an important aspect of family medicine. Patients with chronic diseases would face many breaks of continuity in their relationship with physicians. At certain levels of mobility, it might prove impossible for family practice to maintain the principle of continuity in the face of an increasing trend toward episodic and fragmented care.

Up to the present, little information has been available on the impact of population mobility in family practice. The University of Western Ontario Hypertension Study[3] provided the opportunity to study attrition rates over a five-year period in family practices in southwestern Ontario. Of particular interest was how patient mobility patterns varied by age, sex, location, and presence of a chronic condition.

## METHODS

The method of the study has been previously described.[3] All family practitioners in London, Ontario, and its rural area were invited to participate in the study. Of the 178 who were approached, 87 expressed interest, of whom 34 were chosen who could be pair-matched on the following variables: location (urban or rural), sex of physician, level of practice activity (less than 100 or more than 100 office patients per week), and length of time in practice (more or less than five years). Eighteen of the 34 practices were

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TABLE 1. PERCENTAGE OF PATIENTS WHO MOVED OR DIED BY AGE AND SEX

| Age (years) at Start of Study | Men | | | Women | | |
|---|---|---|---|---|---|---|
| | Number | Moved | Died | Number | Moved | Died |
| 20 to 29 | 2025 | 19.8 | 0.5 | 3067 | 23.6 | 0.1 |
| 30 to 39 | 1677 | 13.2 | 0.9 | 1975 | 14.3 | 0.2 |
| 40 to 49 | 1316 | 10.0 | 1.4 | 1463 | 11.3 | 1.2 |
| 50 to 59 | 1235 | 8.3 | 6.0 | 1583 | 12.8 | 2.1 |
| 60 to 65 | 526 | 8.0 | 9.7 | 657 | 12.2 | 4.4 |
| Total, 20 to 65 | 6779 | 13.2 | 2.5 | 8745 | 16.6 | 1.0 |

in London, a city of 270,000 people in 1976. Sixteen were in smaller communities within a 40-mile radius of London. All were full-time community-based practices. The 34 physicians in these practices were comparable with the total group of London physicians in country of medical school graduation (79 percent vs 72 percent Canadian) and membership of the College of Family Physicians (62 percent vs 58 percent). They were somewhat younger (10.2 years vs 18 years since graduation). A similar proportion were female. Each practice in a pair was allocated to either the experimental or control group by the toss of a coin. A strategy for the detection and management of hypertension was implemented in the 17 experimental practices by introducing a medical assistant who worked with the physician in case finding and patient management. In this paper the attrition rates in the 17 experimental practices are presented.

### Population

The baseline population under study consisted of all patients between the ages of 20 and 65 years who were active in the practice at the beginning of the study in 1978. An active patient was defined as one whose chart or whose spouse's chart showed that a service from the practice had been received within the previous two years and who showed evidence of future commitment. Future commitment was based on completing the study demographic questionnaire or visiting the practice at least once between 1978 and 1982.

### Data Sources

During the five years of the study, the medical assistant in each study practice recorded data on morbidity and mortality and patient population movements out of the practice. Whenever a patient left the practice, an exit form was completed. Information about patients leaving the practice came from requests for the transfer of records to new physicians, patients informing the practice of a move, and information from family and friends.

Another major source of data on patients' mobility was the follow-up of nonresponders to a demographic questionnaire recording data on marital status, height, weight, occupation, smoking, exercise, and alcohol consumption. Completed questionnaires were obtained from 70 percent of the baseline population. All patients received the questionnaire either by mail or when attending the office. In the third and fourth years of the study, those who had not returned a questionnaire were approached by mail or were telephoned. Patients were recorded as having moved if the questionnaire was returned by the post office marked "not at this address," or if the person answering the telephone gave the same information. At the end of the study, a second chart review was done in all practices. Charts of hypertensive patients were reviewed annually.

Essentially this paper is descriptive. Since the large denominators imply that very small differences will be statistically significant, statistical tests are not reported.

## RESULTS

Table 1 shows the attrition rates (moves and deaths) in the baseline population of the 17 practices, by age and sex, between 1978 and 1982. Those recorded as having moved included a small number of patients changing their physicians as well as those moving away from the area.

The five-year move rate was 13.2 percent for men and 16.6 percent for women. Those in the 20- to 29-year age group had the highest rates and those in the 30- to 39-year age group the next highest. The move rates for men stabilized after the age of 40 years to between 8 and 10 percent and for women after the age of 40 years to between 11 and 13 percent.

In Table 2 the attrition rates in London and outside London are compared. Between 1978 and 1982 the move rates in each age group were consistently higher in the London practices.

In Table 3 are displayed the attrition rates in patients of the 17 practices who were identified as hypertensive (two diastolic blood pressures > 90 mmHg) prior to the

TABLE 2. PERCENTAGE OF PATIENTS WHO MOVED OR DIED BY AGE AND LOCATION OF PRACTICE

| Age (years) at Start of Study | London | | | Outside London | | |
|---|---|---|---|---|---|---|
| | Number | Moved | Died | Number | Moved | Died |
| 20 to 29 | 2986 | 24.9 | 0.2 | 2106 | 18.0 | 0.3 |
| 30 to 39 | 2093 | 16.4 | 0.3 | 1559 | 10.3 | 0.8 |
| 40 to 49 | 1625 | 11.6 | 1.6 | 1154 | 9.4 | 0.9 |
| 50 to 59 | 1642 | 12.4 | 3.0 | 1176 | 8.8 | 5.0 |
| 60 to 65 | 675 | 12.3 | 5.0 | 508 | 7.7 | 9.1 |
| Total, 20 to 65 | 9021 | 17.3 | 1.4 | 6503 | 12.2 | 2.0 |

TABLE 3. PERCENTAGE OF PATIENTS WHO MOVED OR DIED BY AGE AND HYPERTENSIVE STATUS

| Age (years) at Start of Study | Hypertensive | | | Normotensive | | |
|---|---|---|---|---|---|---|
| | Number | Moved | Died | Number | Moved | Died |
| 20 to 29 | 66 | 33.3 | 1.5 | 5026 | 21.9 | 0.2 |
| 30 to 39 | 141 | 9.9 | 1.4 | 3511 | 14.0 | 0.5 |
| 40 to 49 | 313 | 6.4 | 1.9 | 2466 | 11.2 | 1.2 |
| 50 to 59 | 625 | 9.3 | 5.1 | 2193 | 11.3 | 3.5 |
| 60 to 65 | 405 | 9.1 | 7.9 | 778 | 10.9 | 6.2 |
| Total, 20 to 65 | 1550 | 9.7 | 4.7 | 13974 | 15.8 | 1.3 |

onset of the study. Male and female hypertensive patients had similar attrition rates. Although more 20- to 29-year-old hypertensives moved, the move rates for all other age groups and for the population as a whole were higher in normotensives.

Continuity of care may be broken not only by a patient's move but also by a physician leaving his practice. During the five years of study, only one of the 34 physicians moved.

## DISCUSSION

The overall five-year move rate in this population was 13.2 percent for men and 16.6 percent for women. Over the age of 40 years, the rate ranged between 8 and 10 percent for men and 11 and 13 percent for women. The move rate was substantially higher in London than in the surrounding area and in normotensive than in hypertensive patients.

These rates are lower than would be expected from the knowledge of mobility in the general population. One explanation for the difference is that mobility rates from the census data include moves of home within the same municipality. About one half of all moves of domicile are within the same municipality and therefore do not require a change of physician. In the United States Hypertension Detection and Follow-up Program, 11 percent of patients changed residence in a two-year period, but only 4 percent moved outside the service areas of the programs.[4]

The results are in accordance with the known facts about age and mobility. Move rates, like moves of domicile, were very much higher in the 20- to 29-year age group than in all the other groups.

These results raise a number of questions. First, is the London area typical of similar areas in the rest of Canada and the United States? London is the regional capital of southwestern Ontario. There is no single dominant industry. Much of the industry could be described as white collar, but there are numerous small and medium-sized manufacturing industries. The city has grown in population from 270,000 to 293,000 between 1976 and 1986.[5] London is surrounded by an area of very productive agricultural land. The nearest large cities are Kitchener (population 120,000) 80 miles to the east, and Windsor (population 200,000) 120 miles to the west. The nearest metropolitan area is Toronto, 120 miles to the northeast. It can be said with reasonable confidence that London is typical of a regional capital in the midwestern region of North America.

The second question concerns the study population. Is it representative of the population of the London area as a whole? It could be that those people who attend family physicians for their care are only a subgroup of the general population. Another recent study provides the answer to

this question. In 1982, Birkett et al[6] conducted a household survey of Middlesex County residents. Middlesex is the county that includes London and a large part of its rural area. Interviewers listed each house in each census enumeration area in the county, then picked a random sample of 25 houses in each area and interviewed all adults over 18 in each household. One of the questions asked was, Do you have a family physician? To this, 93.8 percent answered yes, and 6.2 percent answered no. By far the largest part of primary medical care in the London area is provided by family physicians, of whom there were, in 1985, 185 in the city alone.

The third question relates to the study method. Could the method have underestimated or overestimated the move rate? In a fee-for-service system, where patients do not register with their family physician, there is inevitably an arbitrary element in the definition of the denominator. The enumeration of active patients by chart review at one point in time is probably the most accurate method available, other than interviewing each patient.[7] For this study a wide net was cast initially by including spouses as potentially active patients even if they had not visited. Birkett et al found in their survey that 90 percent of those interviewed had seen their family physician in the previous two years. It is probable, therefore, that the study method has captured a very high proportion of the population of these practices.

That some moves may possibly have been missed is considered to have little impact on the study findings. For a move to have been missed, the patient would have attended after 1978, returned a questionnaire, then left the practice without the knowledge of the physician or the medical assistant. Patients who did not return a questionnaire were followed up. If moves had been missed, the rate of missed moves would be expected to be higher among the normotensive patients, since hypertensive patients were assessed clinically at intervals of no greater than three months, and all nonattenders were traced. The mobility figures for normotensive patients show no evidence of this bias.

The higher move rates in older women may be due to several factors. The rates may reflect the higher mortality rate in middle-aged men and a tendency of widows to leave the area, or it may reflect a greater movement of women among physicians. The lack of a major difference in move rates between older hypertensive patients and older normotensive patients may reflect the asymptomatic nature of this chronic illness. A more debilitating chronic illness might have yielded different findings.

The rate of population movement in this area is compatible with continuity of personal care. There is reason to believe that the area is representative of similar communities in North America. Eighty-seven percent of male patients, 83 percent of female patients, and 90 percent of hypertensive patients received continuous care over a five-year period.

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# Commentary


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What proportion of family physicians' regular patients leave their practices over a five-year period? In the above article, McWhinney and colleagues[1] provide some new and provocative information on this question. About 13 percent of men and 17 percent of women who were active patients of 17 southern Ontario family physicians in 1978 had left their physicians' care by 1982. Patients from urban areas, women, and younger patients were more likely to leave than others. The attrition rates provided included moving away as well as changing physicians, but deaths are reported separately. The authors conclude that "population mobility does not appear to be a major barrier to continuing care."

At first glance the results of this study seem reassuring.

On reflection, however, there is no reason to be complacent. The reported attrition rates may represent the most favorable rates rather than the norm. In this commentary, I will discuss the implications of these results for practicing clinicians and for researchers on continuity.

As a practicing clinician, I wish I had a better handle on my practice attrition rate. How many established patients leave my care and why? In my own practice the best sense I get of attrition is through imprecise methods—record transfers, word of mouth from colleagues and friends, and charts put in the inactive file. A major strength of the Ontario report is that it seems to capture what happened in 17 practices. Unfortunately the study did not differentiate between patients who move and those who change physicians for other reasons, though the authors imply that there were few of the latter. A study of four pediatric practices[2] found that of patients who left the practices, 48 percent did so because of dissatisfaction or for the sake of convenience, 39 percent because they moved, and 13 percent for other reasons. I suspect the attrition rate is higher in my own practice than in Ontario and that patients leave my practice for reasons besides moving, but these published numbers give me a place to start in estimating my own rate.

The next thing to consider is how my practice differs from those described. Several factors come to mind, some of which reflect the march of time and others reflect differences in our medical care environments. In 1982 there were no walk-in centers in central New Hampshire. Patients went to a physician's office or to an emergency room for care. Now there are two centers within a few miles of my office. Some patients elect to get walk-in care for acute problems, backed up by ongoing care from a subspecialist for chronic problems. People not only seem more willing than in the past to see one of my practice colleagues who may be covering for me, but also seem more willing to go elsewhere for certain aspects of their care without checking with me first. Even if patients continue to see me as their regular source of care, the potential depth of our relationship diminishes as they independently seek other sources. These two factors would increase practice attrition and may have also become more commonplace in southern Ontario since 1982.

Regarding our respective medical care environments, the study reports that in Ontario 92 percent of patients name a family physician as their regular source of care, and family physicians provide most primary care, with subspecialists serving as consultants. In my area the percentage of patients naming a family physician as their regular physician would be lower, and the roles of family physicians and subspecialists are less distinct. Patients can choose to get their primary care from a subspecialist, an option that may be reinforced by their friends who already do so. Attrition from my practice to another model of care seems more likely to occur.

I would estimate that my attrition rate is 25 percent over five years. Over the next five years the forces described may drive that attrition rate higher. Further increases in attrition would be serious and have a negative impact on the quality of patient care I can give and on my practice satisfaction. The position of ongoing care in family practice now may be similar to that of obstetrics ten years ago. In a recent editorial Rosenblatt[3] observed that family physicians need to adopt a new paradigm for obstetrics in family practice or face the fact that few family physicians will be doing obstetrics by 1995. It may be too late for family physicians to continue delivering babies, but the specialty could survive this loss. Family practice cannot survive, however, without the ongoing physician-patient relationship. What if my practice five-year attrition rate goes to 35 percent or 45 percent? Would I be a family physician then?

What can be done to stop this trend? Three things can make a difference: (1) continued education of patients to use their family physician rather than walk-in centers for acute care, (2) recognition of patients' desire for better access to care and responding to their needs, and (3) making the best possible use of ongoing relationships with both the patient and the family and pointing out to patients those times when these relationships are useful. If practice attrition is not monitored and increases are not responded to, family physicians run the risk of becoming part walk-in physician and part transitional physician for people who do not yet need a subspecialist. Most family physicians did not go into family practice to provide this service. The way to alter this prospect does not lie in economics or technology. Those who rely on gatekeeper arrangements may find that both the adversarial aspects of having to limit patient access to other physicians and the frequent changes of insurance that fierce competition among health maintenance organizations engenders offer little reassurance, and a new flexible sigmoidoscope or cholesterol meter will not help much either. If family physicians do not pay attention to ongoing care, in 1995 someone may be writing that by the year 2000 few family physicians will be providing continuity of care.

The agenda for clinicians just described is a defensive one. The research agenda for continuity should go on the offensive. Critics say, "So what?" to continuity testimonials. "Show us that continuity matters." In 1982 a review of the literature revealed that there was some evidence that ongoing care was associated with increased patient and physician satisfaction and perhaps with appointment and medication compliance, but that there were many gaps in knowledge.[4] In the past six years, not much that is new has been learned. Only one major study gives convincing support to the notion that ongoing care leads to improved outcomes. Among Veterans Administration patients, Wasson and colleagues[5] showed that continuity was associated with lower costs of care and fewer emer-

gency admissions. The Ontario study should remind one that while practice attrition may not be a major barrier to continuity, continuity has still not been shown to matter. There are enough forces working against continuity of care that the burden is on family practice to show that continuity should be preserved.

This area is difficult to study. Researchers are still struggling with how to measure continuity[6] and how to assess such meaningful outcomes of medical care as functional health. Although Wasson et al were able to manipulate continuity of care in their setting so they could do a randomized trial, there are not many settings in which such manipulation is possible. Obstacles aside, however, if research in family practice does not provide adequate answers on the benefits of continuity, the specialty will fail to meet its obligations to its patients and its practicing physicians. There are three major tasks: (1) to assess what attrition rates are and how they are changing, (2) to scrutinize existing measures of ongoing care and develop new ones that do not sacrifice rigor for relevance, and (3) to conduct rigorous studies, including randomized trials, on the impact of ongoing care.

Measures of continuity quantitate what happens with ongoing care. The easier something is to count, often the further it is from what really matters. The Dartmouth Primary Care Cooperative Information Project (COOP)[7] and others[8] are attempting to develop new measures, but there are no rigorous evaluations of continuity outcomes under way. One must go beyond measures such as the UPC (usual provider care, or the proportion of all visits that took place with one provider), which are easy to calculate but which say little about what goes on in the relationship. Settings for rigorous evaluations will generally be ones in transition that will allow manipulation of the continuity provided, such as new capitated health plans, or places where continuity of care is not already established. Progress must take place on both fronts.

Higher patient attrition rates in family practice may be with us soon. Through the concerted effort of clinicians and researchers, increasing rates can be averted. The Ontario study provides an optimistic estimate of where family physicians stand but no excuse to be complacent. If you think that the attrition is higher in your practice and in North America as a whole and likely to increase, the time to act is now.

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