Original Article

Attitudes of Canadian nephrologists, family physicians and patients with kidney failure toward primary care delivery for chronic dialysis patients

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Abstract

Background. Nephrologists have traditionally assumed responsibility for both nephrological and primary care health problems of their dialysis patients. However, given the increasing limitations of nephrology human resources, there is concern that traditional models may fall short of providing comprehensive care.

Methods. We studied this issue by distributing three different self-administered surveys to 361 members of the Canadian Society of Nephrology, 325 family physicians, and 163 chronic dialysis patients.

Results. The overall response rate was 61.3% for nephrologists, 51% for family physicians, and 90% for patients. More than 50% of Canadian nephrologists are spending approximately one-third of their time in primary care delivery. The majority of these nephrologists and family physicians agree that nephrologists should not be solely responsible for the primary care of patients on dialysis. Yet, both groups of physicians have concerns that family physicians do not have the knowledge/training and time to care for this complicated group of patients. The patients themselves have more confidence in the primary care that is delivered by their family physicians than by their nephrologists. Unfortunately, there is little communication between the two physician groups either between themselves or with their patients about the services that should be provided by their nephrologist or their family physician.

Conclusion. Nephrologists and family physicians agree that more primary care for dialysis patients should be provided by family physicians. However, the lack of communication between physicians and patients may result in either a duplication or omission of services that are required by this patient population. Dialysis delivery systems in Canada must evolve to ensure that comprehensive chronic dialysis and primary care is provided to these patients through cooperation and communication with primary care physicians.

Keywords: haemodialysis; peritoneal dialysis; primary care; survey

Introduction

Unlike the pattern of practice of most subspecialists, nephrologists have a unique long-term relationship with their dialysis patients. This is especially true for chronic in-centre haemodialysis patients, who come for treatment three times per week. It has been common for nephrologists to assume the major responsibility for diagnosis and treatment of the incidental minor health problems that non-dialysis patients would normally see their family physician for. Indeed, 25 years ago, nephrologist-directed primary care at an end-stage renal disease (ESRD) centre was promoted as a particularly effective care model [1].

The prevalence rate of end-stage kidney failure in Canada is increasing at 9% per year [2] and the ratio of dialysis patients per nephrologist has been increasing with time [3]. There is concern that nephrology human resources will become increasingly insufficient to provide optimum care for dialysis patients in the traditional manner. In addition, the recent trend towards an increasing focus on earlier referral and pre-ESRD care will require a major time commitment by nephrologists potentially limiting the amount of time spent providing care to the dialysis population [4]. Whether traditional models of dialysis care can continue to provide excellent patient care for the expanding dialysis population is not at all certain.

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Therefore, we undertook a survey-based project designed to look at opinions and attitudes of Canadian nephrologists, family physicians and dialysis patients, concerning primary care delivery to dialysis patients.

Subjects and methods

Three different self-administered surveys were developed using a modified Total Design Method [5]. All 361 members of the Canadian Society of Nephrology were sent the initial questionnaire with one follow-up mailing to non-respondents. A similar survey was sent to a random sample of 325 Canadian family physicians who lived in Canada’s 14 largest cities (to maximize the likelihood of having to care for dialysis patients). Two mail-outs followed the initial survey to non-respondents to increase response rates. Patients were recruited during their regular haemodialysis shift or follow-up in the peritoneal dialysis clinics in Toronto, Ottawa and Vancouver. After receiving informed consent, a convenience sample (scheduled peritoneal dialysis visit during the study period, daytime haemodialysis shift) of 163 English speaking patients were provided with a survey for completion.

The physician questionnaires (available from the authors on request) were designed to survey several domains including (i) demographics of physician respondents, (ii) opinions about physician relationships with dialysis patients, (iii) current practice and attitudes concerning routine primary care for dialysis patients, and (iv) dialysis units policy and practices concerning primary care for dialysis patients (nephrologist survey only). The domains of the patient questionnaire included (i) demographic characteristics of the patients including co-morbid illnesses, (ii) reasons for seeing their family physician (if applicable), and (iii) primary care delivery. Each survey was pilot tested in the target population and modified prior to the first mail-out.

As primary care has been variably defined, for the purposes of this study we did not attempt to define a specific set of illnesses or behaviours that define primary care but rather simply asked the physicians their perceptions of their ‘primary care delivery’. We determined what ‘primary care’ they were delivering by using a similar set of examples as Bender and Holley [6].

For the patients, we defined primary care as those services the patients would have expected to see their family physician for if they were not on dialysis. Again, we followed this with specific questions about the reasons that they were seeing their family physician.

Data were analysed with a commercially available software package (Microsoft Access 2000) using univariate and bivariate statistics. The Research Ethics Boards of Saint Michael’s Hospital, Ottawa Hospital and Vancouver General Hospital approved the research project.

Results

Physicians

Of the 361 members of the CSN, 41 were excluded as potential participants as they felt they were not sufficiently knowledgeable to complete the questionnaire. Reasons included retirement (19), mainly administrative, research, and/or paediatrics duties (18), or for other unspecified reasons (4). Of the eligible 320 physicians, 196 surveys were returned for an overall response rate of 61.3%. After three mailings, 167 of 325 family physicians returned their questionnaires for an overall response rate of 51%.

Nephrologists were older (47 vs 42 years, \( P = 0.002 \)) and more likely to be male (81 vs 48%, \( P < 0.001 \)) compared to family physicians. In addition, nephrologists were more likely to be in university group practices (71%) whereas most of the family physicians were in community group practices (53%).

The majority of nephrologists (54.3%) reported that >31% of their time was devoted to primary care. As shown in Figure 1, most nephrologists said they were confident in the role of primary care provider. However, while nephrologists reported attending an average of 6.7 nephrology meetings in the past 3 years, and an average of 1.8 internal medicine meetings, only

![Fig. 1. Nephrologist confidence in ability to provide primary care.](image)
an average of 0.3 primary care meetings were attended. Similarly, when asked to list the three most frequently read medical journals, no primary care journal was mentioned.

Despite their confidence as primary care providers, almost 80% of nephrologists felt that ‘a nephrologist should not provide all the primary care for dialysis patients’. The majority of family physicians (85%) also concurred with this statement. Figure 2 shows the opinion of nephrologists and family physicians about who should be responsible for primary care of dialysis patients. Equally split care by family physician and nephrologists was selected by 39.8% of nephrologists and 34% of family physicians, while another 41.9% of nephrologists and 40% of family physicians thought the family physician should have more responsibility than the nephrologist. Only 18.3% and 17% thought the nephrologist should have more responsibility than the family physician.

Figure 3 shows the confidence of nephrologists and family physicians that the family physician has the knowledge and training to provide good primary care to dialysis patients. On a six-point scale where 1 was not at all confident and 6 was extremely confident, 45.8% of nephrologists answered 1 or 2 such that they were not very confident in the knowledge and training of family physicians. In addition, 51.1% answered 1 or 2 such that they were not very confident that family physicians had the time required to provide good primary care to dialysis patients. These percentages are close to the 40 and 62% of family physicians who answered the 1 and 2 categories as above. Of note, 66% of family doctors report that they do not have dialysis patients in their current practice. Another 29% had only one or two dialysis patients in their current practice, and only 5% had between three and five dialysis patients. In all categories of ‘primary care’ surveyed, a greater percentage of family physicians stated that they provided these services with the exception of managing hyperlipidaemia. The greatest discrepancies were in the performing of breast exams, PAP smears and referring for mammography (Table 1).
Nephrologists stated that they encouraged patients to maintain a relationship with their family physician (85.2%). However, 34.3% said they never send a written report to the patient’s family physician, and another 27.0% do so only once per year. The majority of family physicians were unsure whether nephrologists encourage patients to maintain a relationship with them. In addition, they concurred with the low communication rate between nephrologists and themselves. Although patients were advised about the types of problems that should be brought to the family physician by 67.6% of nephrologists, the family physician was advised about which types of patient problems should be brought to them by only 24.7% of nephrologists. Similarly, 63% of family physicians did not tell their patients which problems should be brought to themselves or the dialysis staff.

Patients

Of the 163 patients who were invited to participate in the study, 147 returned their completed questionnaire. The majority of the patients (60%) were greater than 50 years of age, female (53%) and on haemodialysis (75%). The majority of patients (87%) had a family physician and 65% of these patients saw him/her two or more times per year. Most of the patients reported seeing their family physician for a new problem (83%) or to have a prescription filled (51%). Only 24% of patients saw their family physician to follow-up on an ongoing problem (the majority of these patients were not being followed by a sub-specialist either). In addition, despite the majority of patients receiving a yearly physical exam (50% by their family physician, 21% by their nephrologist), only 49% of women had had a Pap smear and 55% of the women over the age 50 had had a mammogram done within the last 2 years. Several possible explanations exist for the relatively low adherence to cancer screening guidelines. Nephrologists may not refer for Pap smears and mammography due to the controversy about the benefits that this population can expect to gain from cancer screening [11–13]. It is equally possible that the omission is due to a lack of knowledge as Canadian nephrologists are not reading primary care journals or attending primary care meetings. Also, there is a general lack of communication between the physicians that means important primary care issues may simply be overlooked.

Lastly, Canadian nephrologists and family physicians believe that family physicians could be more responsible for the primary care of patients with ESRD. Yet, both physician groups have concerns about the training of family physicians and the time required providing primary care to this complicated group of patients. The confidence of family physicians to provide primary care to patients with ESRD may be impaired due to a lack of exposure as 66% of our

### Table 1. Primary care activity by nephrologists and family physicians

<table>
<thead>
<tr>
<th>Primary care activity</th>
<th>Nephrologist</th>
<th>Family physician</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counselling</td>
<td>53%</td>
<td>77%</td>
</tr>
<tr>
<td>Stool haemoccult</td>
<td>15</td>
<td>24</td>
</tr>
<tr>
<td>Refer perform PAP</td>
<td>28</td>
<td>67</td>
</tr>
<tr>
<td>Refer for mammography</td>
<td>30</td>
<td>73</td>
</tr>
<tr>
<td>Breast exam</td>
<td>10</td>
<td>78</td>
</tr>
<tr>
<td>Immunization</td>
<td>74</td>
<td>88</td>
</tr>
<tr>
<td>Rx lipids</td>
<td>71</td>
<td>81</td>
</tr>
<tr>
<td>Rx DM</td>
<td>71</td>
<td>81</td>
</tr>
<tr>
<td>Rx heart</td>
<td>74</td>
<td>82</td>
</tr>
<tr>
<td>Rx GI</td>
<td>59</td>
<td>85</td>
</tr>
<tr>
<td>Minor illness</td>
<td>72</td>
<td>91</td>
</tr>
</tbody>
</table>

Rx, treatment of; DM, diabetes mellitus; GI, gastrointestinal.
respondents do not have any dialysis patients in their current practice and a further 29% have only one or two such patients. Interestingly, despite the concern raised by both physician groups, patients are more concerned about the training and time that their nephrologists have for primary care issues and are less concerned about their family physicians.

Our study has the limitations inherent in any survey. Primary care has been variably defined [14,15]. Therefore, each respondent may be considering different aspects of primary care in answering the survey questions. However, we tried to compensate for this by asking about specific ‘primary care’ practices. In addition, survey respondents may express opinions that do not represent their actual attitudes or practice. This may be especially true for the family physicians as the majority of them have limited numbers of dialysis patients in their practice. In addition, we did not attempt to directly measure the quality of primary care that is being delivered by the two physician groups which may be very different. Nonetheless our response rates are reasonable. We believe our results do reflect the attitudes of urban Canadian nephrologists, family physicians and patients with kidney failure and that we have identified important issues that must be addressed.

In summary, nephrologists despite their confidence in their abilities as primary care provider, no longer wish to fulfill this role in its entirety. In spite of this, most nephrologists have failed to communicate with general practitioners about patient care raising the possibility that central components of primary care may simply be overlooked. In addition, nephrologists have concerns about the knowledge and time that general practitioners have to provide primary care to this patient population. Yet, it is the nephrologists who do not read primary care journals or attend primary care meetings, the result of which appears to be the provision of less primary care activities than general practitioners. In light of this, we believe that traditional ways of managing dialysis patients must be re-examined.

Some possible solutions to this problem include the following options, which are not mutually exclusive. First, nephrologists with expertise in primary care should educate those family physicians who are interested in providing care to dialysis patients. Short hand-outs concerning common issues, and/or continuing medical education events could be developed for this purpose. Secondly, nephrologists could consider using other personnel to provide primary care in the dialysis units. Family physicians, general internists and/or primary care nurse practitioners could join nephrology practices and focus on primary care issues. Some Canadian units are already experimenting with such models. Lastly, communication between the health care providers needs to be improved.

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