Perceptions of Multidisciplinary Renal Team Members toward Home Dialysis Therapies

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Key Points
- Even in a mature home therapies program, renal team members had substantial differences in perceptions toward the candidacy of home therapies.
- Structured, focused, and repeated education sessions for the renal team may address misperceptions in influential modality candidacy factors.
- Expanding educational opportunities to include allied health team members, who self-identify as modality educators, would likely be of value.

Abstract
Background Patients with ESKD are encouraged to pursue home dialysis therapy with the aims of improving quality of life, increasing patient autonomy, and reducing cost to health care systems. In a multidisciplinary team setting, patients interact with nephrologists, nurses, and allied health staff, all of whom may influence a patient’s modality choice. Our objective was to evaluate the perceptions of all renal team members toward home dialysis therapies.

Methods We performed a cross-sectional survey of multidisciplinary renal team members across five renal programs in British Columbia, Canada. The survey contained questions regarding primary work area, modality preference, patient and system factors that may influence modality candidacy, perceived knowledge of home therapies, and need for further education.

Results A total of 334 respondents (22 nephrologists, 172 hemodialysis nurses, 49 home nurses, 20 predialysis nurses, and 71 allied health staff) were included (48% response rate). All respondents felt that home dialysis was beneficial for patients who work or study, improved patients’ quality of life, and provided cost savings to the system. Compared with in-center hemodialysis nurses, home therapies nurses were between five and nine times more likely to favor a home therapy for patients of older age, lower socioeconomic status, lower educational level, higher burden of comorbidities, and those lacking social supports. Nephrologists and patients were felt to have the most influence on modality choice, whereas dialysis nurses were seen as having the least effect on modality choice. Most respondents felt the need for further education in home therapies.

Conclusions The majority of multidisciplinary team members, including allied health staff, acknowledged the benefits of home therapies. There were significant discrepancies among team members regarding patient-/system-level factors that may affect the candidacy of home therapies. Structured, focused, and repeated education sessions for all renal team members may help to address misperceptions around factors that influence modality candidacy.

Introduction
Despite the established benefits of home-based dialysis therapies to patients and the health care system, the proportion of patients with ESKD who start either peritoneal dialysis (PD) or home hemodialysis (HD) in Canada is substantially lower than the proportion of patients who start in-center HD (1,2). This pattern has remained largely unchanged for the past decade, and is influenced by both medical and nonmedical factors (3–5). In the Canadian province of British Columbia, approximately 29% of the prevalent dialysis population are receiving a home therapy (25% PD and 4% home HD) and the majority of patients (72%) receive in-center HD (2). Similar to other Canadian provinces, British Columbia has established a patient-centered, multidisciplinary...
approach to the care of individuals with kidney disease (6). This includes a “home-first” approach to dialysis, such that home therapies are actively promoted as the first-line modality for patients with progressive kidney disease who do not have an overt contraindication (7–10). Orientation and education regarding RRT options occur early in the course of the patient’s trajectory toward ESKD, thus allowing sufficient time for a patient to come to a fully informed decision (11).

Due to the importance and complexity of this decision-making process, a multidisciplinary team has been established to support patients with their diagnosis and navigate complex decision making around initiating dialysis and transitioning between dialysis modalities (2). This team consists of nephrologists, nurses, pharmacists, dieticians, and social workers, all of whom may exert an influence on an individual patient’s modality decision (11–13). It is important, therefore, to understand the knowledge and perception of home therapies among different members of the team. The current literature suggests that nephrologists have the biggest influence on a patient’s decision. However, this largely stems from surveys of nephrologists and nurses from academic centers only, thus limiting generalizability of the findings (14,15). Furthermore, the opinions of allied health staff, and their potential contribution to the patient’s decision, have not been previously captured.

In this provincial survey, we sought to evaluate the perceptions of multidisciplinary team members involved in the care of patients with advanced kidney disease toward home-based dialysis therapies. We further sought to identify potential ways in which perceived challenges to home therapies could be overcome. We hypothesized that knowledge and attitudes toward home therapies would differ depending on the team member’s primary area of work.

Materials and Methods
Survey Design

The questions in this survey were informed by a previous survey of nurses in Ontario conducted by Tennankore et al. (14) in 2013. The Ontario survey was developed using a modified Delphi process and further refined by nursing managers and educators before being disseminated to nursing staff. The present survey sought to maintain the integrity of the Ontario survey to facilitate comparisons between the two provinces. Furthermore, the scope of this survey was expanded to include the views of physicians and allied health professional (pharmacists, dieticians, and social workers). The survey (Supplemental Appendix 1) was developed through an online platform and distributed via email to all eligible staff through their department managers. The survey was also disseminated to all five regional health authorities via BC Renal—a provincial organization that provides care for all patients receiving RRT and those registered in multidisciplinary kidney care clinics (12,13). Each health authority provides dialysis services to a catchment population from urban and rural locations, and patients in each health authority have the opportunity to pursue a home-based therapy. The survey email was initially sent out on January 7, 2019 and the survey remained active for 6 weeks. Two reminder emails were sent after 2 and 5 weeks to maximize the response rate (8).

Respondents were asked to declare their primary area of work from the following list: PD, home HD, in-center HD, community dialysis unit, and predialysis/CKD.

Data Collected
Baseline demographic information included type of dialysis center (academic or nonacademic center), accumulated number of years working in all nephrology areas, highest academic qualification, country of nephrology education, and completion of Certified in Nephrology Canada (CNeph[C]) (8). The CNeph(C) is awarded to nursing staff who have undergone additional nephrology training that includes specific training in dialysis modality education. The survey questions were categorized into four domains: (1) perceived patient- and system-level factors that influence modality choice, (2) perceived current versus desired proportions of patients receiving either in-center HD or a home therapy, (3) perceived level of influence the respondent has on a patient’s modality selection, and (4) opportunities for further education and training regarding dialysis modalities (14). Patient-level factors included lower socio-economic status, multiple chronic illnesses, lack of higher education (no education after high school), older age (>70 years), language barriers (English not the primary language), lack of caregivers/social supports, and employment status (full-time working or studying). System-level factors included lower cost to the patients, lower cost to the health care system, the risk of a patient experiencing serious harm from a dialysis modality, employment and job security for dialysis nurses, better patient survival, and quality of life.

Statistical Analysis
Categoric response variables are summarized as percentages and presented graphically in the form of bar charts. For the primary analysis, overall differences across all five respondent groups were evaluated using a chi-squared test. In a secondary analysis, where heterogeneity was observed among respondents, differences between respondent groups were further evaluated using a logistic regression model with the response dichotomized to favoring home therapies (agree or strongly agree) versus not. Results are expressed as odds ratios and 95% confidence intervals. For this analysis, in-center HD nurses were chosen as the reference group because they had the largest sample size. Statistical analyses were performed using Stata IC version 14 (StataCorp, College Station, TX).

Ethics Approval and Consent to Participate
A formal research ethics board review was not acquired due to this being a quality improvement project undertaken under the auspices of the BC Renal Home Therapies Committee. The survey was anonymous and felt to be low risk for the participants involved.

Results
Response Rate
Out of 695 eligible multidisciplinary team members, a total of 368 responded to the survey, representing a response rate of 53%. Those with incomplete responses to
questions about roles (n=2) or work area (n=3) and those who did not identify themselves as a nephrologist, nurse, or allied health professional (n=29) were excluded. A final cohort of 334 respondents (48%) was included in the analysis.

Demographics of Respondents
There was broad representation in the survey from all primary work areas and sites (Table 1), including 22 nephrologists, 71 allied health staff, 172 in-center HD nurses, 49 home therapies nurses, and 20 predialysis CKD nurses. The majority of respondents were female (87%), received their education in Canada (92%), and worked at an academic center (64%). The CNeph(C) designation had been attained by 40% of CKD nurses, 39% of home therapy nurses, and 32% of in-center HD nurses.

Patient- and System-Level Factors
Respondents were asked to rate their preference for either in-center HD or home therapies on the basis of specific patient- and system-level factors using a five-point Likert scale (Table 2). Higher scores indicate a preference for home therapies for all questions. Overall, respondent groups differed significantly in their modality preference on the basis of all patient-level factors except employment status, where respondents generally agreed that home therapies were beneficial for patients who either work or study full time (Figure 1). These differences were further examined in a logistic regression model (Supplemental Appendix 3). When asked about the risk of a harmful dialysis-related event and patient survival, home therapies nurses and CKD nurses were each more likely to choose a home therapy compared with in-center HD nurses. Home therapies and CKD nurses also tended to favor home therapies for job security reasons. Responses of allied health staff were similar to those of in-center HD nurses, except for patient survival, where allied health staff were twice as likely to favor a home therapy.

Current and Desirable Relative Proportions of In-Center and Home-Based Dialysis
The majority of respondents stated they would choose a home therapy if they ever were to require dialysis themselves (n=28, 286%), and this pattern was consistent across all respondent groups. Respondents favored PD over home HD (49% versus 37%) as their modality of choice, whereas some chose self-care (7% nocturnal or increased responsibility in dialysis) and very few chose in-center HD (3%) or conservative care (4%). All respondent groups estimated the current proportion of patients receiving a home therapy with reasonable accuracy and were generally in agreement that an increase in this proportion would be desirable in the future.

| Table 1. Demographics of survey respondents |
|---------------------------------------------|
| **Characteristic** | **Nephrologists** | **In-Center Hemodialysis** | **Home Therapy** | **Chronic Kidney Disease** | **Allied Health Members** |
| N                  | 22 | 172 | 49 | 20 | 71 |
| Female, n (%)      | 9 (41) | 147 (86) | 47 (96) | 18 (90) | 66 (93) |
| Primary work area, n (%) |
| CKD                | 9 (41) | 0 | 0 | 20 (100) | 27 (38) |
| IHD                | 4 (18) | 121 (70) | 0 | 0 | 21 (30) |
| Community          | 0 | 51 (30) | 0 | 0 | 7 (10) |
| PD                 | 3 (14) | 0 | 31 (63) | 0 | 13 (18) |
| Home HD            | 1 (5) | 0 | 18 (37) | 0 | 2 (3) |
| Academic center    | 13 (59) | 104 (61) | 31 (63) | 13 (65) | 50 (70) |
| Years, n (%)       | 0 | 5 (3) | 1 (2) | 0 | 6 (9) |
| <1                 | 2 (9) | 42 (24) | 4 (8) | 4 (20) | 21 (30) |
| 1–5                | 8 (36) | 35 (20) | 9 (18) | 1 (5) | 16 (23) |
| 6–10               | 5 (23) | 38 (22) | 16 (33) | 6 (30) | 14 (20) |
| 11–15              | 5 (23) | 27 (16) | 10 (20) | 4 (20) | 6 (9) |
| 16–20              | 2 (9) | 24 (14) | 9 (18) | 5 (25) | 6 (9) |
| >20                | N/A | 55 (32) | 19 (39) | 8 (40) | N/A |

Data missing for sex (n=4), work area (n=6), center (n=5), years in practice (n=3), and CNeph(C) (n=3). IHD, in-center hemodialysis; PD, peritoneal dialysis; CNeph(C), Certified in Nephrology Canada certification; N/A, not applicable.
Perceived Influence on a Patient’s Modality Selection

All nephrologists and the vast majority of predialysis (CKD) and home therapies nurses felt they played a role in educating patients about RRTs during the modality selection process (Figure 3). In contrast, 27% of allied health staff and 12% of dialysis nurses did not feel that they educated patients about dialysis modalities. Respondents were asked to rank the influence of different individuals on a patient’s choice of modality on a Likert scale from most (one) to least (five). Nephrologists were ranked most influential in 41% of responses, followed by patients (28%), and predialysis CKD nurses (19%). Dialysis nurses were ranked the least influential in 51% of responses. Among respondents who were nurses, 69% chose a rating of four or five for dialysis nurses.

Perceived Understanding of Dialysis Modalities and Need for Education

The majority of CKD nurses (67%) agreed that patients were well informed about dialysis modalities, whereas a similar proportion of in-center HD nurses (61%) and home therapies nurses (60%) felt the opposite. Over 80% of respondents in each group agreed that patients would benefit from further education about dialysis modalities. Nursing respondents and allied health staff were in favor of receiving further education in home therapies, preferably in the form of online continuing medical education or obtaining more practical experience.

Discussion

In this multicenter, provincial survey of nephrologists, nurses, and allied health staff involved in the care of patients with advanced CKD and ESKD, the majority of respondents recognized the benefits of home therapies such that they would choose a home therapy for themselves if they ever required dialysis, and favored an expansion in the capacity of both PD and home HD. However, there were significant differences across respondent groups in the perception of factors that affect patients receiving dialysis in their home, at both the patient and system level. Nephrologists, patients, and predialysis CKD nurses were deemed to have a substantial influence on a patient’s modality choice, whereas dialysis nurses were perceived to have the least influence, despite having perhaps the greatest exposure to patients requiring RRT. Overall, the findings suggest there are identifiable discrepancies in attitudes toward home therapies among different members of the multidisciplinary team.

Our results are consistent with previous surveys that found that nephrologists and nurses were overwhelmingly in favor of a home therapy for themselves if ever needed (>90%), but that this did not necessarily translate into endorsing these modalities for patients, potentially due to a lack of confidence in the topic or a misconception of factors that affect home therapies (16,17). A previous single-center study evaluated the opinions of nurses toward home therapies in a large academic center in Ontario (14). In keeping with our findings, this study found that the majority of nurses shared the view that home therapies were beneficial for patients who work or study full time, represented a lower cost alternative for the health care system, and provided better quality of life for patients. In the Ontario study, there was a marked difference among home therapy and in-center HD nurses when it came to choosing a home therapy for themselves if ever needed (80% versus 52%, respectively). In our study, >80% of respondents from all three nursing categories (in-center, predialysis, and home therapies) believed that evidenced-based information is insufficient for the optimal choice and that patients should be allowed to make a choice based on their preferences.

Table 2. Respondents’ preference for home-based (PD or HHD) or in-center (IHD) modality on the basis of specific patient and system-level factors

| Factor            | Nephrologists | In-Center Hemodialysis | Home Therapy | Predialysis | Allied Health Members |
|-------------------|---------------|------------------------|--------------|-------------|-----------------------|
| Patient factors   |               |                        |              |             |                       |
| Lower SES         | 3 (3−4)a      | 2 (1−3)b               | 4 (3−5)c     | 4 (2−5)d    | 3 (2−4)a              |
| Comorbidities     | 3 (3−4)a      | 2 (1−3)b               | 4 (2−4)c     | 3 (2−5)h    | 2.5 (2−3)b            |
| Education         | 4 (3−4)f      | 3 (2−4)a               | 4 (2−4)f     | 3 (3−5)f    | 3 (3−4)a              |
| Older age         | 4 (3−4)f      | 2 (2−3)b               | 4 (3−5)f     | 4 (3−5)f    | 3 (3−4)a              |
| Language          | 3 (3−4)f      | 3 (2−4)a               | 4 (3−5)f     | 4 (3−5)f    | 3 (3−4)a              |
| Work              | 5 (4−5)c      | 5 (4−5)c               | 5 (3−5)c     | 5 (4−5)c    | 5 (4−5)c              |
| Support           | 3 (3−4)f      | 2 (1−3)b               | 4 (2−4)f     | 3 (2−4)a    | 2 (2−3)b              |
| System factors    |               |                        |              |             |                       |
| Patient cost      | 4 (3−4)c      | 4 (3−5)c               | 5 (3−5)c     | 4 (3−5)c    | 4 (3–4)c              |
| System cost       | 5 (4−5)c      | 5 (4−5)c               | 5 (5−5)c     | 5 (5−5)c    | 5 (4–5)c              |
| Risk              | 3 (3−4)a      | 3 (2−4)a               | 4 (3−5)f     | 4 (3−5)f    | 3 (2−4)a              |
| Employment        | 3 (3−4)f      | 2 (1−3)b               | 3 (3−4)a     | 3 (3−4)a    | 3 (2–3)a              |
| Survival          | 4 (3−4)f      | 3 (3−5)c               | 5 (4−5)c     | 5 (4−5)c    | 4 (3–5)c              |
| QOL               | 5 (4−5)c      | 5 (4−5)c               | 5 (4−5)c     | 5 (5−5)c    | 5 (4–5)c              |

Data are presented as median (interquartile range). PD, peritoneal dialysis; HHD, home hemodialysis; IHD, in-center hemodialysis; HD, hemodialysis; SES, socioeconomic status; QOL, quality of life.
aScores of 3 (neither in-center or home dialysis preferred).
bScores of 1 (in-center hemodialysis strongly preferred) or 2 (in-center hemodialysis somewhat preferred).
cScores of 4 (home dialysis somewhat preferred) or 5 (home dialysis strongly preferred).
therapy) were in favor of a home therapy when asked the same question. Nursing staff are not usually provided formal modality education apart from the CNeph(C) course, and one might hypothesize that an environment with fewer nurses that have completed this training may have favored home therapies less due to a relative lack of knowledge and experience. Yet, despite the lower proportion of British Columbia nurses with the CNeph(C) designation compared with those in Ontario, the findings were similar between both studies with respect to choice of modality for patients under specific patient- and system-level factors.

When considering patient- and system-level factors, nursing respondents in both studies favored the dialysis modality in their own scope of practice, such that in-center HD nurses tended to choose in-center dialysis and home therapies nurses tended to choose home-based therapies for patients in these contexts. This may stem from an individual’s comfort level from working with a certain dialysis modality over a longer period of time, or a lack of understanding regarding what constitutes an insurmountable barrier to a patient receiving a home therapy (16). It could be argued that in-center HD nurses are more likely to have been exposed to patients who experienced complications related to their home therapy that necessitated a transition to in-center HD—an experience that could bias their perception of the appropriateness of home therapies for subgroups of patients. This merits further study, given that such biases can potentially be overcome and the observation that nursing staff were open to receiving further practical education in home therapies. Nursing staff in both studies perceived a minimal influence on a patient’s modality decision and ranked themselves lowest in terms of influence (18,19). Although not pursued within this study, it is postulated that the nephrology team members view the in-center nursing role inherently as having a singular focus on their own modality while also facing significant time constraints (e.g., rotating patient loads, truncated patient interactions). Both factors may lead to a decreased capacity to engage patients about the breadth of modalities available. Increasing the exposure of staff members to multiple areas of nephrology may facilitate crosspollination of knowledge and expertise in dialysis modalities, and thus

Figure 1. | For most patient-level factors, respondent groups differed significantly in their overall modality rankings. Above are the corresponding results when asked the survey question, “Please indicate preference for home therapies (HHD or PD) or in-center hemodialysis (HD) for these specific patient-level factors,” by proportion (%). The P values represent a test of the null hypothesis that the relative proportions are the same in each group. HD, hemodialysis; HHD, home hemodialysis; PD, peritoneal dialysis.
help to reduce inherent biases. In support of this, our findings indicated that the majority of nursing staff favored further practical experiences in home therapies.

To make an informed modality decision, patients rely on their multidisciplinary team for information, guidance, and support (15). The opportunity to discuss modality selection with different members of the team could be beneficial to patients, especially because patients may be more likely to choose a home therapy if they attain the same information from multiple sources (15,20). The attitudes of staff toward home therapies and the prevailing culture of a dialysis program with respect to dialysis modalities could contribute to the uptake of home therapies (4,5). Further, the nurses’ opinion of how well patients are educated regarding dialysis modalities likely varies with their experience with patients who have a suboptimal dialysis start (i.e., those that start acute HD without the benefit of predialysis education). Because patients’ value comprehensive, evidence-based information to make modality decisions, encouraging all team members to have an adequate and balanced understanding of home therapies could promote consistency in the information delivered to patients (17,21).

Initiating or transitioning within dialysis modalities requires a holistic approach to care, including adjustment of medications, dietary modifications, and optimization of social circumstances. The allied health staff—consisting of pharmacists, dieticians, and social workers—are crucial components in the delivery of this care (18,22). This group of professionals work closely with patients during the process of modality selection, however, their perceptions toward dialysis options have not previously been described (18,23). Despite not traditionally being in their scope of practice, half of the allied health respondents in this study regarded themselves as patient educators. They did not strongly favor one modality over another in the context of patient- and system-level factors, which may reflect a lack of direct experience with dialysis therapies. Nonetheless, they remained in favor of a home therapy for themselves if ever needed and advocated for an expansion in the number of patients receiving home therapies. This suggests they are cognizant of the benefits of home therapies from the patient perspective, but may not have sufficient knowledge and understanding of the treatment and how it is delivered to have an informed discussion with patients. The majority of allied health staff was in favor of receiving further education in home therapies. These team members represent an untapped resource that could complement the efforts of nurses and physicians by providing consistent and accurate information to patients (20,23). Furthermore, the allied health staff may serve as a resource for patients to explore their concerns or fears about dialysis that may not be discussed with their nephrologist.

Our study has some limitations. Although there was a reasonably high response rate and good representation

![Figure 2: The respondent groups differed in their modality preference for the majority of system-level factors. Above are the corresponding results when asked the survey question, “Please indicate preference for home therapy (HHD and PD) or in-center hemodialysis for these system-level factors,” by proportion (%). The P values represent a test of the null hypothesis that the relative proportions are the same in each group. HHD, home hemodialysis.](image-url)
from urban and rural sites, there remains the possibility of responder bias in one or more respondent groups. The sample size for nephrologists was relatively small, leading to wide confidence intervals in the estimates. There may be heterogeneity among physicians, for example, related to their primary area of work, which could not be interrogated in this study. Due to the fluidity of nursing roles, renal nurses may have varying exposure to more than one clinical domain during their career, which could shape their perception of dialysis modalities. This survey did not capture specific time frames within each domain, and, therefore, we were unable to interrogate this. The amount of teaching provided by nurses could vary according to discipline, and this may have contributed to some of the differences we observed. This information was not specifically captured in the survey, nor was the underlying reasons why some nurses felt less influential. The latter may be better captured through focus groups. The selection of patient and system factors considered as potential influences on modality choice may not fully reflect the list of factors evaluated by the multidisciplinary team. Although there are certain parameters (e.g., a lack of housing or active psychiatric illness) that are generally considered an absolute contraindication to home therapies, British Columbia does not have a standardized definition for this. Therefore, local program experience and resources for home therapies may influence perception of which barriers are truly insurmountable. The implementation of formal criteria of absolute and relative contraindications would allow for a more comprehensive comparison of different programs. These limitations are balanced by several strengths. To our knowledge, this is the first study to investigate the perceptions of the entire care team, including members of the allied health staff. The survey captured a diverse group of respondents, with varying levels of clinical experience, from academic and nonacademic sites. The survey response rate of 48% exceeded the commonly reported response rates of 30%–40% (24,25). Although the findings of this study have not been externally validated, the robust response rate, inclusion of all health authorities within British Columbia, and the fact that the findings were comparable with a previous study in another Canadian province all contribute to the generalizability of the findings.

Although many factors affect patients’ modality choices, renal team members play a pivotal role. Therefore, prevailing misperceptions toward patient eligibility for home therapies may be inadvertently transferred to patients. Acknowledging and understanding these systemic biases, especially those that are implicit, may allow for the multidisciplinary team to more accurately inform patients and improve their access to home therapies. This study found that, even in the setting of a robust and mature home therapies program, there were substantial differences in attitudes toward home therapies among renal team members, particularly regarding candidacy for a home therapy. Struc
tured, focused, and repeated education sessions for the renal team may help to address misperceptions around factors that influence candidacy. Most respondents were open to receiving further education in these areas so that they may be better placed to disseminate accurate information to patients. A similar strategy applied to renal transplant staff, including peer-led discussions around overcoming transplant barriers and educational workshops, has previously demonstrated success in this regard (17). Finally, continuing nursing education initiatives do appear effective at modifying perceptions toward home dialysis, most importantly for surmountable barriers. On the basis of the results of this study, broadening the target audience for home therapies education to include allied health team members may be of benefit.
Disclosures

M.A. Copland reports serving on a speakers bureau for NxStage Medical, and receiving honoraria from NxStage Medical Inc, Sanofi, and Takeda. K. Tennankore reports receiving research funding from Astellas Canada and Otsuka Canada; serving on a speakers bureau for AstraZeneca, Baxter, and Bayer; having consultancy agreements with AstraZeneca, Baxter, Janssen, and Otsuka; and receiving honoraria from AstraZeneca, Bayer, and Otsuka. All remaining authors have nothing to disclose.

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Author Contributions

M. Canney, M.A. Copland, K. Poinen, K. Tennankore, and M. Van Der Hoek reviewed and edited the manuscript; M. Canney and K. Poinen were responsible for data curation and formal analysis, provided supervision, and wrote the original draft; M.A. Copland, K. Poinen, and M. Van Der Hoek conceptualized the study; and K. Poinen was responsible for investigation and methodology.

Supplemental Material

This article contains the following supplemental material online at http://kidney360.asnjournals.org/lookup/suppl/doi:10.34067/KID.00062202/-/DCSupplemental.

Supplemental Appendix 1. BC Renal Care Team Members’ Perceptions of Home Dialysis Therapies Survey.

Supplemental Appendix 2. Likelihood of respondents favoring a home-based therapy (“strongly agree” or “agree” versus not) given specific patient-related factors.

Supplemental Appendix 3. Likelihood of respondents favoring a home-based therapy (“strongly agree” or “agree” versus not) given specific system-related factors.

References

1. Sinclair A, Cimon K, Loncar M, Sood M, Komenda P, Severn M, Pauly R: Dialysis modalities for the treatment of end-stage kidney disease: A health technology assessment, Ottawa, Canada, Canadian Agency for Drugs and Technologies in Health, 2017
2. Treatment of End-Stage Organ Failure in Canada: Canadian organ replacement register, 2008 to 2017, Ottawa, Canada, Canadian Institute for Health Information, 2019. Available at https://www.cihi.ca/en/organ-replacement-in-canada-annual-statistics-2019. Accessed December 27, 2019
3. Manns B, Agar JWM, Biyani M, Blake PG, Cass A, Culliton B, Kleophas W, Komenda P, Lobbedez T, MacRae J, Marshall MR, Scott-Doogans N, Srivastava V, Magner P: Can economic incentives increase the use of home dialysis? Nephrol Dial Transplant 34: 731–741, 2019
4. Krah MD, Bremmer KE, de Oliveira C, Dixon SN, McFarlane P, Garg AX, Mitsakakis N, Blake PG, Harvey R, Pechlivanoglou P: Home dialysis is associated with lower costs and better survival than other modalities: A population-based study in Ontario, Canada. Perit Dial Int 39: 553–561, 2019
5. Jayanti A, Foden P, Rae A, Morris J, Brenchley P, Mitra S: The influence of renal Centre and patient sociodemographic factors on home haemodialysis prevalence in the UK. Nephron 136: 62–74, 2017
6. Beaulieu M, Levin A: Analysis of multidisciplinary care models and interface with primary care in management of chronic kidney disease. Semin Nephrol 29: 467–474, 2009
7. Howard K, Salkeld G, White S, McDonald S, Chadban S, Craig JC, Cass A: The cost-effectiveness of increasing kidney transplantation and home-based dialysis. Nephrol (Carlton) 14: 123–132, 2009
8. Walker RC, Howard K, Morton RL: Home hemodialysis: A comprehensive review of patient-centered and economic considerations. Clinicoecon Outcomes Res 9: 149–161, 2017
9. Jung B, Blake PG, Mehta RL, Mendelsohn DC: Attitudes of Canadian nephrologists toward dialysis modality selection. Perit Dial Int 19: 263–268, 1999
10. Lewicki MC, Polkinghorne KR, Kerr PG: Debate: Should dialysis at home be mandatory for all suitable ESRD patients? Home-based dialysis therapies are the second choice after transplantation. Semin Dial 28: 147–154, 2015
11. British Columbia Provincial Renal Agency (BCPRA): Best practices: Kidney care clinics. 2019. Available at: http://www.bcrenalagency.ca/resource-gallery/Documents/Best_Practices-Kidney_Care_Clinics.pdf. Accessed June 23, 2020
12. Barbour S, Beaulieu M, Gill J, Djurdjev O, Reich H, Levin A: An overview of the British Columbia glomerulonephritis network and registry: Integrating knowledge generation and translation within a single framework. BMC Nephrol 14: 236, 2013
13. Mendelsohn DC, Toffelmire EB, Levin A: Attitudes of Canadian nephrologists toward multidisciplinary team-based CKD clinic care. Am J Kidney Dis 47: 277–284, 2006
14. Tennankore KK, Hingwala J, Watson D, Bargman JM, Chan CT: Attitudes and perceptions of nephrology nurses towards dialysis modality selection: A survey study. BMC Nephrol 14: 192, 2013
15. Walker RC, Marshall R, Howard K, Morton RL, Marshall MR: Who matters most? Clinician perspectives of influence and recommendation on home dialysis uptake. Nephrol (Carlton) 22: 977–984, 2017
16. Mendelsohn DC, Mullaney SR, Jung B, Blake PG, Mehta RL: What do American nephrologists think about dialysis modality selection? Am J Kidney Dis 37: 22–29, 2001
17. Phillips M, Wile C, Bartol C, Stockman C, Dhir M, Soroka SD, Hingwala J, Bargman JM, Chan CT, Tennankore KK: An education initiative modifies opinions of hemodialysis nurses towards home dialysis. Can J Kidney Health Dis 2: 51, 2015
18. Mendelsohn DC: Coping with the CKD epidemic: The promise of multidisciplinary team-based care. Nephrol Dial Transplant 20: 10–12, 2005
19. Goldstein M, Yassa T, Dacouris N, McFarlane P: Multidisciplinary predialysis care and morbidity and mortality of patients on dialysis. Am J Kidney Dis 44: 706–714, 2004
20. Devoe DJ, Wong B, James MT, Ravani P, Oliver MJ, Barnieh L, Roberts DJ, Pauly R, Manns BJ, Kappel J, Quinn RR: Patient education and peritoneal dialysis modality selection: A systematic review and meta-analysis. Am J Kidney Dis 68: 422–433, 2016
21. Friberg IO, Märtensson L, Haraldsson B, Krantz G, Mååta S, Järbrink K: Patients’ perceptions and factors affecting dialysis modality decisions. Perit Dial Int 38: 334–342, 2018
22. Desai AA, Bolus R, Nissenson A, Bolus S, Solomon MD, Khasaw O, Gitlin M, Talley J, Spiegel BM: Identifying best practices in dialysis care: Results of cognitive interviews and a national survey of dialysis providers. Clin J Am Soc Nephrol 3: 1066–1076, 2008
23. Waterman AD, Hyland SS, Goalby C, Robbins M, Dinkel K: Improving transplant education in the dialysis setting: The “explore transplant” initiative. Dial Transplant 39: 236–241, 2010
24. Baruch Y, Holton BC: Survey response rate levels and trends in organizational research. Hum Relat 61: 1139–1160, 2008
25. Johnson T, Owens L: Survey response rate reporting in the professional literature. Presented at the 58th Annual Meeting of the American Association for Public Opinion Research, Nashville, TN, May 2003

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