# Evaluation of patient satisfaction with nutrition education strategies at a community dialysis unit

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Minja Milic<sup>1</sup>, Roberta Wozniak<sup>1</sup>, Jennifer Hrushkin<sup>2</sup>, Jiak Chin Koh<sup>2</sup>, Frances Johnson<sup>2</sup>, Kara Vogt<sup>1</sup>, Tamar Kafka<sup>1</sup>

<sup>1</sup>UBC Dietetics Program <sup>2</sup>Providence Health Care, Clinical Nutrition, Vancouver

**UBC** Dietetic Internship Research Project

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#### Introduction

Patients with end stage renal disease (ESRD) who are undergoing hemodialysis treatments are at an increased risk of inadequate dietary intake, related to an increased loss in nutrients, higher overall requirements, and renal diet restrictions [1]. While pharmacological approaches are important in the management of ESRD, nutrition education is also imperative to help inform patients about a healthy diet [1,2]. Through consistent and frequent nutrition and diet education, and a combination of different education strategies, nutrition status can be improved in ESRD patients [2].

There are many dietary restrictions for patients on dialysis, which often include sodium and fluid restrictions, as well as potassium and phosphorus restrictions [3]. Given that diet and nutritional status are such important factors for patients undergoing hemodialysis, it is important that the dietitian be able to offer various strategies and services to help the patients cope with their treatment. At the Richmond Community Dialysis Unit (RCDU), the renal dietitian uses a variety of strategies to provide nutrition education on a renal-friendly diet. One of the nutrition strategies offered includes inperson consultation with the patient and dietitian, which entails tailored nutrition education based on the patient's latest blood work and individual needs. Another strategy is the display of hand-made nutrition-related posters aimed to expand patients' food and nutrition knowledge. Taste testings involve sampling different foods that are prepared by the dietitian. They are offered periodically to provide the opportunity for patients to try a range of renal-friendly foods, including desserts, and other meal ideas to promote a varied diet. The coffee cart service is another chance for patients to experiment with snack foods and drinks while interacting with the dietitian and volunteers.

The inclusion of a variety of nutrition education strategies is important, but how the patient values the nutrition education offered to them is also critical [2]. The intent of patient-centred care is to integrate the patient into the care process and for the healthcare team, including the dietitian, to respect the patient's values when making clinical decisions [4,5]. Patient care, as well as nutrition education, should be customized to the individual needs and values of the patient [4]. Understanding how valuable patients find the nutrition education strategies is essential for providing patient-centred care. Therefore, it is important for renal dietitians to conduct recurrent evaluations to gain insight into how satisfied patients are with the nutrition education strategies offered [2]. This process will aid in identifying ways of improving nutrition education strategies to better support patients undergoing hemodialysis [2].

Patient perceptions of the nutrition education strategies offered by the renal dietitian at the RCDU were unknown. The purpose of this study was to describe patient satisfaction with the different nutrition education strategies provided at the RCDU, through administration of an anonymous paper survey. Results from this survey will be used to

help guide the RCDU dietitian in the development and improvement of future nutrition education strategies.

#### Methods

#### Inclusion Criteria

All patients who attended the RCDU for hemodialysis treatment during the survey administration period (February 29 – March 4, 2016) were invited to participate in the study. This captured all participants attending the RCDU as patients attend the unit three times per week for treatment. Thus, all 54 patients attending treatment were invited to participate. All patients registered at the unit are 19 years or older.

#### Survey Design

A paper survey was developed by the authors to encompass the nutrition education strategies specifically offered at the RCDU. The survey contained 17 questions that included a mixture of Likert scale, open-ended, and demographic questions (Appendix A). The five-level Likert scale questions ranged from "not at all satisfied" (designated by the number one) to "very satisfied" (designated by the number five). Open-ended questions allowed participants to provide additional comments and other suggestions. Age category of participants and the duration of hemodialysis treatment were also asked. No identifiable information was collected to maintain patient anonymity.

The survey was pilot tested at another community dialysis unit (North Shore Community Dialysis Unit) prior to data collection at the RCDU. Pilot testing occurred on February 8, 2016 and included all seven patients receiving hemodialysis treatment that morning. Minor changes were made to the survey following the results of the pilot test and all changes were re-approved by the ethics board.

#### Data Collection

Patients were approached by a RCDU nurse and were provided with an introductory letter, the paper survey, and a blank envelope to place the completed survey. The introductory letter outlined details of the study including an overview of the study design and purpose, as well as providing study investigators' contact information (Appendix B). Participation in the study involved implied consent, which allowed for anonymous participation. Participants who had difficulty communicating in English were permitted to take their survey home and have the aid of someone (e.g. family member or friend) who was proficient in both the participant's native language and English. The study investigators were not present at the time of the survey administration, to avoid coercion and response bias. Participants had until March 13, 2016 (approximately two weeks) to complete the survey and return it to a designated labeled drop-box within the patient waiting area at the RCDU.

#### Ethics

This minimal risk study underwent behavioural human ethics review. Ethics approval was obtained by the UBC-Providence Health Care Research Ethics Board on January 22, 2016 (Appendix C).

#### Statistical Methods

Descriptive statistics were used to analyze the data. A research methodologist was consulted from the Centre for Health Evaluation and Outcome Sciences (CHEOS) to assist with study methodology and statistics. Microsoft Excel 2003 was used to determine the frequencies of responses and proportions, as well as to generate frequency distribution graphs.

#### Results

#### **Participants**

There were 54 patients who attended the RCDU for hemodialysis treatment the week of survey administration (February 29 – March 4, 2016). All 54 patients were invited to participate in the survey, with 52 agreeing to take a survey. A total of 29 patients returned their completed survey within the data collection period, giving a response rate of 56% (n=29 out of 52). Participants' age categories and duration on hemodialysis treatment can be found in table 1. The majority of participants were 65 years and older (n=19/29, 66%), which is comparable to the age demographic of the total population of patients who attended the RCDU the week of survey administration (n=37/54, 69%). Over half (n=20/29, 69%) of participants have been receiving hemodialysis treatment for five years or less. This is also comparable to the population at the RCDU, where 67% of the total patients (n=36/54) have been receiving hemodialysis treatment for five years or less.

#### Table 1. Demographics of respondents (n=29)

#### Age of participants:

Less than 65 years (n = 8) 65 years and older (n = 19) Unknown (n = 2)

#### Length of time on hemodialysis:

Less than 1 year (n = 9) 1 – 5 years (n = 11) More than 5 years (n = 6) Unknown (n = 3)

#### Speaking with the Dietitian about Nutrition

Of the 28 participants who responded to the question, 19 (68%) were satisfied or very satisfied with how often they speak with the dietitian about nutrition. Twenty-two participants (n=22/28, 79%) were satisfied or very satisfied with the information they get from the dietitian. Results from the patient satisfaction questions related to speaking with the dietitian about nutrition are listed in table 2.

Table 2. Patient satisfaction with the nutrition education strategies offered at the RCDU.

	Number of	Patient Satisfaction Scale (n)					
Survey Question	Respondents	1 (Not at all Satisfied)	2	3	4	<b>5</b> (Very Satisfied)	
Satisfaction with how often patients speak with the dietitian about nutrition	28	0	2	7	6	13	
Satisfaction with the information provided by the dietitian	28	0	1	5	9	13	
Satisfaction with how often taste testings are offered	12	0	2	3	3	4	
Satisfaction with taste testings	12	0	1	4	4	3	
Satisfaction with the nutrition posters	22	0	2	8	10	2	
Satisfaction with the coffee cart service	19	0	0	5	6	8	

When asked how the sessions with the dietitian could be improved, the most frequently reported answer was to talk with the dietitian more often (n=11/27). Other suggestions included talking with the dietitian in a group setting (n=3) and meeting with the dietitian when not on dialysis (n=1). Open-ended responses also included talking after each blood work on short falls (n=1) and giving out lists of foods to eat and foods to avoid during dialysis (n=1). The total frequency of responses is visually represented in figure 1.

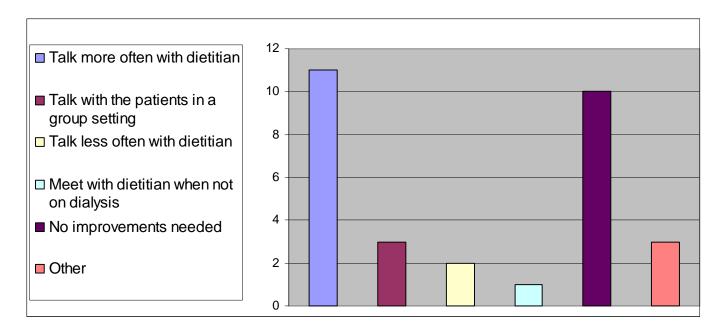


Figure 1. Frequency of responses when patients were asked how the sessions with the dietitian could be improved. Respondents were asked to check all that apply. (n = 27)

#### Taste Testings

Twelve participants (n=12/29) indicated that they have participated in the taste testings at the RCDU. Out of the 12 participants, seven were satisfied or very satisfied with the taste testings and how often they taste test foods. Results from the patient satisfaction questions related to taste testings can be found in table 2.

Suggestions for improving future recipes and taste tests (figure 2) included more fruit (n=8/17), more desserts (n=5), more vegetables (n=5), and more ethnic foods (n=4). Those that selected "other" (n=3) responded with the following suggestions for improving the taste testings: increase how often food is sampled, include more snack ideas, and snacks for on-the-go.

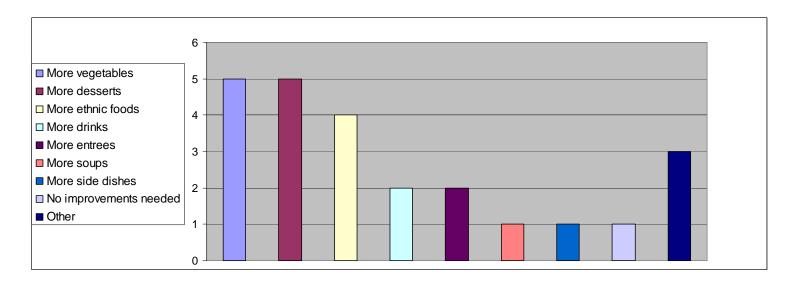


Figure 2. Frequency of responses when patients were asked how future recipes and taste tests could be improved. Respondents were asked to check all that apply. (n = 17)

#### **Nutrition Posters**

A total of 22 participants (n=22/29, 76%) have looked at the nutrition posters displayed around the RCDU. About half of the respondents (n=12/22, 55%) were satisfied or very satisfied with the nutrition posters (table 2).

Eighteen participants gave suggestions for poster topics (figure 3). Some of the most frequent responses included label reading (n=9), phosphorus (n=9), heart health (n=8), potassium (n=7), and holiday foods (n=7). Some other open-ended responses for poster topic suggestions included drinks containing high levels of phosphorus and/or potassium, and a comparison of different cheeses. When asked for suggestions to improve the nutrition posters, participants suggested rotating the posters more often (n=11/22), changing the location of the posters (n=4), and displaying the posters in more languages (n=2). Ten participants had no suggestions for improvement.

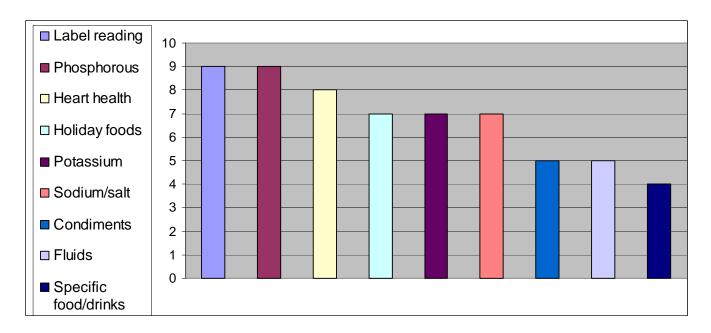


Figure 3. Frequency of responses when patients were asked how the nutrition posters could be improved. Respondents were asked to check all that apply. (n = 18)

#### Coffee Cart Service

Nineteen participants (n=19/29, 66%) responded that they have participated in the coffee cart service at the RCDU. Of the 19 participants, 14 (74%) were satisfied or very satisfied with the coffee cart service. Patient satisfaction responses can be found in table 2.

There was a range of suggestions when participants were asked how to improve the coffee cart service (figure 4). Some of these included more variety of options (n=4), different cookies (n=4), more crackers (n=3), and 10 participants responded that they did not have any suggestions for improvement. Other written responses included providing hotter tea and coffee, as well as having cold drinks offered in the summer.

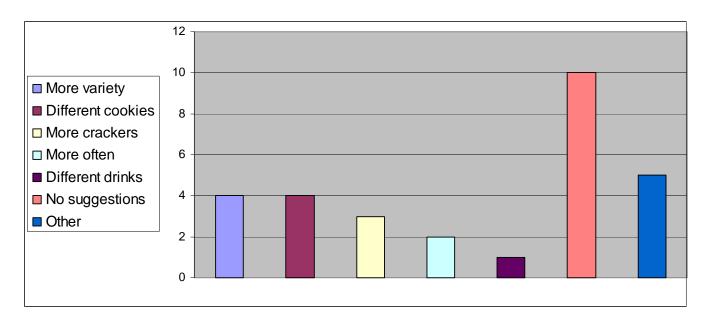


Figure 4. Frequency of responses when patients were asked how the coffee cart service would be improved. Respondents were asked to check all that apply (n = 22).

#### **Discussion**

We were able to describe patient satisfaction with the different nutrition education strategies provided at the RCDU, which met the objective of the study.

All patients at the RCDU were invited to participate, but it was expected that not all patients would agree to participate or would be present during data collection. Based on a study by Baruch and Holtom, where response rates were analyzed in 1607 studies, the authors found that surveys completed in person or on a drop-in basis had an average response rate of 62.4% [6]. The 56% response rate from this study was only slightly below the average response rate from the Baruch and Holtom study. One potential factor impacting the response rate could have been language, as the survey was only available in English. This could have been a barrier to participating given that approximately 30% of the patients at the RCDU have difficulty communicating in English (J. Hrushkin, personal communication, June 16, 2016). To help overcome this, participants were permitted to bring the survey home to have a friend or family member translate the survey for them. However, participants may have forgotten to return completed surveys as there was no follow-up due to anonymity of participation.

#### Speaking with the Dietitian about Nutrition

In regards to speaking with the dietitian, most people indicated that they were satisfied with the information they received, but many of the participants indicated that they wish to speak with the dietitian more frequently. Since the survey is anonymous, it cannot be determined which participants indicated wanting to speak with the dietitian

more often. One possible explanation could be that evening patients do not have as many opportunities to meet face-to-face with the dietitian, as the dietitian only works three days a week, during regular work hours. Moving forward, some potential suggestions to improve satisfaction with speaking to the dietitian could include: scheduling one-on-one telephone sessions with the patient and dietitian or using a designated mailbox for patients to drop off nutrition-related questions. Email is also an option, however, given that the majority of the population at the RCDU is 65 and older, it may not be the most appropriate method for communication between patients and the dietitian. Another option to improve patient satisfaction could be for the dietitian to include evening shifts more regularly to help accommodate all patients' schedules.

#### Taste Testings

It should be noted that the taste testings had the least number of participants out of all of the nutrition education strategies offered at the RCDU. It is important to keep this in mind, as this represents only a small sample of the population. A possible reason for the low participation could be due to the taste testings being offered infrequently. This is evidenced by the lower satisfaction rating with how often the taste testings are offered. Therefore, it is recommended to offer the test testings more often, to try and reach those patients who have not had the opportunity to participate. The results for satisfaction of the taste testings also showed room for improvement, as evidenced by only one participant indicating no improvements were needed.

Given the limited cooking facilities and budget, it has been difficult for the dietitian to provide frequent taste testings. In order to increase the frequency of taste testings in the future, the dietitian can consider providing more low cost options and foods requiring minimal preparation. Possible suggestions include offering renal-friendly fruits and vegetables that are in season, which also require little preparation. While increasing the frequency of the taste testings has been suggested, it is important for the dietitian to consider that patients also want a variety of foods offered. This is demonstrated by the range of suggestions provided by the study participants.

#### **Nutrition Posters**

The nutrition posters are displayed in a central location at the RCDU and many of the participants have looked at the nutrition posters, as indicated by the number of responses. However, this nutrition education strategy had the lowest satisfaction rating. This suggests that several of the participants are aware of the posters, but are not as satisfied with the content. The suggestions for improving the nutrition posters, including specific poster topics and rotating posters more often, are helpful for the dietitian who was unaware of the level of interest in learning about nutrition through posters. Moving forward, it is recommended that the dietitian displays posters on a monthly basis rather than seasonally in order to expand on the range of topics provided.

#### Coffee Cart Service

Most participants indicated that they were satisfied with the coffee cart service, which is not surprising as it is a complimentary service offering tea, coffee, and treats, provided by volunteers on a weekly basis. Hemodialysis patients require four-hour treatment sessions and therefore generally enjoy the social interaction with the volunteers. It can be challenging for patients to find renal-friendly options, therefore it is not a surprise that participants indicated they wanted more variety. A potential suggestion for improvement is for the dietitian to trial new food items more often.

#### Limitations

While the study was able to address the objective, it should be noted that there were some limitations. One limitation was that not everyone who received a survey completed it. As mentioned previously, the survey was not translated into other languages. Given the ethnic diversity at the RCDU, it is possible that language could have been a barrier to participation. Another limitation of the study is that it is unclear if the respondents differed in their satisfaction of the nutrition education strategies from the non-respondents [6]. Although the response rate of this study was comparable to the literature for paper surveys, the satisfaction of almost half of the population at the RCDU remains unknown. A suggestion for the future would be to consider other ways to reach out to the non-respondents. For instance, if language was a barrier to participating, survey administrators could consider using a translated survey or translator in the future, in order to reach non-respondents. Focus groups or other opportunities to provide verbal feedback may also be a strategy to increase participation.

It is also worth noting that some respondents answered questions that they were instructed to skip. For instance, if respondents did not participate in the taste testings, they were instructed to skip the question related to suggestions for improvements. However, some respondents answered this question despite having indicated they had not participated in the taste testings. This could indicate that the survey instructions were unclear.

Another limitation is that the survey was not able to determine why the patients did not participate in some of the nutrition education strategies. As a result, it is unknown if patients were not choosing to participate because they were unsatisfied with the nutrition education strategies, or if it was due to other reasons. One factor that could have contributed to some strategies having lower reported participation could have been the wording of the survey questions. For instance, patients may not be familiar with the term "taste testings" and what that specifically pertains to. In this case, it may have been appropriate to provide an example or a definition to help with clarity. Because of the low response rate of the questions pertaining to the taste testings, conclusions about satisfaction with this strategy were unable to be drawn.

#### Conclusion

Patient-centred care involves listening to the needs and values of the patient, and it is evident that the dietitian is helping achieve this. Out of all the nutrition education strategies offered at the RCDU, participants were most satisfied with the information provided by directly speaking with the dietitian. This emphasizes the importance of regular interactions between patients and the dietitian for optimizing patient satisfaction.

#### **Relevance to Practice**

In order to provide patient-centred care for hemodialysis patients, it is important for the renal dietitian to be aware of patient perceptions to help determine effectiveness of practice. The survey developed for this study is a quick and easy tool for evaluating patient satisfaction with the nutrition education strategies offered at a community dialysis unit. Regular evaluation of the nutrition education strategies provided by the renal dietitian can be a useful resource for highlighting areas for improvement. This survey can be easily modified for use at other community dialysis units to assess the patient satisfaction with the specific nutrition education strategies offered at a particular unit.

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# Evaluation of Patient Satisfaction with Nutrition Education Strategies at the Richmond Community Dialysis Unit (RCDU)

Providence Health Care St. Paul's Hospital 1081 Burrard Street Vancouver, B.C. Canada V6Z 1Y6

Please fill in the survey and return when you are finished, by March 13<sup>th</sup>, 2016

Please do **NOT** include your name or any other personal information on the survey.

### **Instructions:**

- o Please answer the questions below as they relate to the Richmond Dialysis Unit (RCDU).
- o When you are asked to circle an answer, please only circle one number.
- o Depending on your answer, you may be asked to skip questions or skip to the next section.
- o The bold line indicates the next section.
- o When you have finished, please place your completed survey into the blank envelope provided and drop it into the labeled box located in the patient waiting area.
- You may change your mind and decide not to complete the survey at any time before you drop off the survey.
- o Thank you for participating in our research study.

# Section 1: Speaking with the dietitian about nutrition

1. How sa about nutrition	•		v often you s	peak with the di	etitian
1	2	3	4	5	
(not at all satisfied)	_	3	•	(very satisfied)	
2. How sa dietitian? (Ci	•	ou with the	information	you get from th	e
1	2	3	4	5	
(not at all satisfied)			(	very satisfied)	
		sions with th	ne dietitian k	e improved?	
(Check all tha ☐ No improve	110,	od			
☐ Talk with the					
☐ Talk with the					
☐ Meet with t			t on dialysis		
☐ Talk with the			•	par nationts)	
	ie dietitian i	n a group sei	ung (with ou	iei patients)	
□Other:					

# **Section 2: Taste Testing**

2. How satisfi (Circle	•	with how of	en you tas	te test foods?
1 (not at all	2	3	4	5 (years satisfied)
(not at all satisfied)				(very satisfied)
3. How satisfi	ed are you	with the tast	e testings?	(Circle one)
1	2	3	4	5
(not at all satisfied)				(very satisfied)
satisfied)				
4. Do you hav		_	e future re	ecipes and taste tests?
4. Do you hav (Check	e suggestio all that app	ply)	e future ro	ecipes and taste tests?
4. Do you hav (Check □ No ir	all that app	ply) as needed	e future ro	ecipes and taste tests?
4. Do you hav (Check □ No in □ More	all that approvement ethnic food evegetables	oly) as needed ds	e future ro	ecipes and taste tests?
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4. Do you hav (Check  No ir  More  More  More  More	all that approvements ethnic food vegetables fruit esoups ethnics dishes ethes	ply) as needed ds	e future ro	ecipes and taste tests?

# **Section 3: Nutrition Posters**

Iow satisfi Circle one)	•	with the nut	rition poste	ers?
1 at all sfied)	2	3	4	5 (very satisfied)
	e suggestion fic food or o		topics? (C	heck all that apply
example	·			
———— □ Holid	lay foods			
☐ Potas	•			
☐ Phos				
☐ Fluid				
	reading			
☐ Cond	•			
☐ Heart	health			
□Other:				
o you hav	e suggestio	ns to improv	e the poste	rs?
(Check al	l that apply	7)		
	iggestions			
☐ Chan	ge the locati	ion		
	-	s more often		
☐ Rotat	e the poster	s less often		
□Other:	•			

# **Section 4: Coffee Cart Service**

1. Have you one)	participate □ Yes □ No		rt service at RCDU? (Cluestion 3 of this section.	heck
2. How satisfied)	2	with the coffee c	cart service? (Please circ 4 5 (very satisfied)	:le)
( <b>Please chec</b> ☐ No ☐ Dif ☐ Dif ☐ Mo ☐ Mo	ave any suggest all that appropriate and that appropriate and that appropriate and the suggestions of the suggestions of the suggestion and the suggestion are are and the suggestion are are all the suggestion are are all the suggestion are are are all the suggestion are are all the suggestion are are all the suggestions ar	oply)	oving the coffee cart ser	vice?

## **Section 5: General**

1.	How old are you? (Please check one)  ☐ Less than 65 years ☐ 65 years and over
2.	How long have you been on hemodialysis? (Please check one)  ☐ Less than 1 year ☐ 1 to 5 years ☐ More than 5 years
3.	Is there anything else that you would like the dietitian to do or provide at RCDU, to help you with nutrition and your diet?

Thank you very much for your time!

#### **Appendix B**

# Letter of Introduction Evaluation of Patient Satisfaction with Nutrition Education Strategies at the Richmond Community Dialysis Unit (RCDU)

#### Who is conducting the study?

Principal Investigator:

Jiak Chin Koh, Providence Health Care, Clinical Nutrition, (604) 682-2344 ext. 62515

Co-investigators:

Frances Johnson, Providence Health Care, Clinical Nutrition, (604) 682-2344 ext. 68598

Tamar Kafka, UBC, Land and Food Systems, (604) 827-5762 Minja Milic, Dietetic Intern, BSc Dietetics, UBC, Land and Food Systems, Roberta Wozniak, Dietetic Intern, BSc Dietetics, UBC, Land and Food Systems

#### Why are we conducting this study?

You are being invited to take part in this research study because you are receiving hemodialysis treatment at the RCDU. We want to learn more about how to help people who are receiving hemodialysis. This study will help us learn more about what patients think of the nutrition education strategies at the RCDU.

#### How is the study done?

If you agree to participate, here is how we will do the study:

- You will find the survey attached to this letter, as well as a blank envelope
- You may complete the survey at any time until March 13<sup>th</sup>, 2016
- Once you are finished with the survey, please place the survey in the blank envelope that was provided to you
- You will place your survey in the labeled box in the patient waiting area
- Completed surveys must be placed in the labeled box by March 13<sup>th</sup>, 2016
- Please do **not** include any identifiable information (your name, address, telephone number, email address) on the survey. They surveys are anonymous, which means we will not know which survey belongs to whom, or who completed a survey.

#### What will we do with the study results?

The results of this study will be described in a report, presented at research symposiums, and may also be published in journal articles.

#### Is there any way being in this study could be bad for you?

We do not think there is anything in this study that could harm you or be bad for you. You do not have to answer any question if you do not want to. Please let one of the study staff know if you have any concerns.

#### What are the benefits of participating?

You will not directly benefit from participating in this study. You may be helped in this study by providing feedback to the dietitian on the nutrition education strategies at the RCDU. This feedback may be used to expand or improve the nutrition education strategies offered at the RCDU.

#### How will your identity be protected?

Subjects will not be identified by name in any reports of the completed study. The data will be anonymous, which means that it will not be possible to determine who completed the survey. No identifiable information will be collected, so nobody will be able to identify you based on the survey. All documents will be kept in a locked filing cabinet in a secure office at St. Paul's Hospital. Any electronic data will be stored in the Providence Health Care Clinical Nutrition Departmental Secure Network. After five years data files will be deleted and any hard copy data will be shredded after.

#### Who can you contact if you have questions about the study?

If you have any questions or concerns about what we are asking of you, please contact the study leader or one of the study staff. The names and telephone numbers are listed at the top of the first page of this form.

#### Who can you contact if you have complaints or concerns about the study?

If you have any concerns about your rights as a research subject and/or your experiences while participating in this study, you may contact the Research Subject Information Line in the UBC Office of Research Services at 604-822-8598 or if long distance e-mail <a href="RSIL@ors.ubc.ca">RSIL@ors.ubc.ca</a> or call toll free 1-877-822-8598. Note that by filling out the attached survey you are providing consent to participate in this study.

#### **Appendix C**



UBC-Providence Health Care Research Institute Office of Research Services 10th Floor Hornby Site - SPH c/o 1081 Burrard St. Vancouver, BC V6Z 1Y6 Tel: (604) 806-8567 Fax: (604) 806-8568

ETHICS CERTIFICATE OF EXPEDITED APPROVAL: AMENDMENT

PRINCIPAL INVESTIGATOR:	DEPARTMENT:		UBC-PHC REB NUMBER:	
Jiak Chin Koh	UBC/Land and F		H15-03017	
<b>INSTITUTION(S) WHERE RES</b>	EARCH WILL BE	CARRIED OL	JT:	
Institution			Site	
Providence Health Care St. Paul's Hospital				
Other locations where the res	earch will be co	nducted:		
Richmond Community Dialysis Unithe North Shore Community Dialys Chow, Operations Leader, Renal P forwarded via email to Julie Hadde	is Unit (Providence rogram, Providence	Health Care). Ap Health Care. Co	oproval has been granted from Cecilia onfirmation of approval has been	
CO-INVESTIGATOR(S):				
Kara E. Vogt				
Jennifer N Hrushkin				
Roberta Wozniak				
Tamar Kafka				
Frances Johnson				
SPONSORING AGENCIES:				
N/A				
PROJECT TITLE:				
	n with Nutrition E	ducation Strate	egies at the Richmond Community	
Dialvsis Unit				

REMINDER: The current UBC-PHC REB approval for this study expires: January 22, 2017

AMENDMENT(S):	AMENDMENT APPROVAL DATE: February 19, 2016			
Document Name		Version	Date	
Questionnaire, Questionnaire Cover Letter, Tests: Survey		3	February 17, 2016	
CERTIFICATION:  1. The membership of the UBC-PHC REB complies or research ethics boards defined in Part C Division for the UBC-PHC REB complies or research ethics boards defined in Part C Division for the UBC-PHC REB complies or research ethics boards defined in Part C Division for the UBC-PHC REB complies or research ethics boards defined in Part C Division for the UBC-PHC REB complies or research ethics boards defined in Part C Division for the UBC-PHC REB complies or research ethics boards defined in Part C Division for the UBC-PHC REB complies or research ethics boards defined in Part C Division for the UBC-PHC REB complies or research ethics boards defined in Part C Division for the UBC-PHC REB complies or research ethics boards defined in Part C Division for the UBC-PHC REB complies or research ethics boards defined in Part C Division for the UBC-PHC REB complies or research ethics boards defined in Part C Division for the UBC-PHC REB complies or research ethics boards defined in Part C Division for the UBC-PHC REB complies or research ethics boards defined in Part C Division for the UBC-PHC REB complies or research ethics because the UBC-PHC REB complies or research ethics are research end of the UBC-PHC REB complies or research ethics are research end or research ethics.				

- Canada.
- 2. The UBC-PHC REB carries out its functions in a manner fully consistent with Good Clinical Practices.
- 3. The UBC-PHC REB has reviewed and approved the research project named on this Certificate of Approval including any associated consent form and taken the action noted above. This research project is to be conducted by the principal investigator named above at the specified research site(s). This review of the UBC-PHC REB have been documented in writing.

The amendment(s) for the above-named project has been reviewed by the **UBC-PHC Research Ethics Board Chair or Associate Chair**, as presented in the documentation and the accompanying documentation was found to be acceptable on ethical grounds for research involving human subjects.

Approval of the UBC-Providence Health Care Research Ethics Board by one of the following:

Dr. Kuo-Hsing Kuo, Chair

Dr. J. Kernahan, Associate Chair

Dr. I. Fedoroff, Associate Chair