

Understanding the Need for Tools and Resources to Manage Enteral Nutrition Intolerance: An On-Line Survey

Supplementary Materials

Methodology: including survey design, consent, deployment and strategies to increase response rate

A 16-question online survey was developed for RDs engaged in EN management. A combination of nominal, ordinal, rating and ranking scale questions were constructed to understand RD experience with EN/ENI, interest in tools and resources to manage ENI, the types of resources valued, basic demographic information and primary patient case mix. The survey instrument was developed by the co-investigators and validated using both face validity and pilot testing on a sub-set of the target population (n=10). In an effort to increase response rate, elements of the modified Dillman approach as outlined by Thorpe and colleagues (20) were employed, including: personalized email recruitment messages; repeated contact through an email alert and two email reminders; and the option to enter an incentive draw for 1/5 gift cards (\$50.00 value; redirected to a separate link to maintain survey anonymity). All recruitment materials, consent and questionnaire were available in both French and English. The study received ethics review by Western Institutional Review Board, Puyallup, WA, USA.

Participants were recruited via convenience sample using the list of consenting attendees at a national webinar on ENI held in October 2016 (sponsored by Nestlé Health Science Canada). To be included, participants must be a Canadian RD involved in the clinical management of tube fed patients or residents. Consent was confirmed by agreement to participate in this 10-15-minute, voluntary survey. The survey was conducted through Canadian Viewpoint Inc., a data

Understanding the Need for Tools and Resources to Manage Enteral Nutrition Intolerance: An On-Line Survey

collection company, and remained open for four weeks during October 2017. Only completed surveys with 80% or more of the eligible questions answered were included in the data analysis. Data was exported to a Microsoft Excel file for import into SPSS v 21 (Armonk, NY). Descriptive statistical analyses were conducted to describe the responses in each category using frequency and percent. Cross-tabulations were performed for key pairs of questions of interest. Chi-squared tests were conducted for six questions to determine if differences in responses were statistically significant ($P < 0.05$).

Understanding the Need for Tools and Resources to Manage Enteral Nutrition Intolerance: An On-Line Survey

Survey Questions

1. Are you currently practicing as a Dietitian managing tube fed patients or residents?
 - Yes
 - No [If answer is No, survey is terminated]

2. In which setting do you currently practice as a Dietitian managing tube fed patients/residents most often?
 - Acute Care Hospital - In-Patient ICU
 - Acute Care Hospital – In-Patient non ICU
 - Acute Care Hospital - Ambulatory Care
 - Long Term Care/Nursing Home
 - Rehabilitation/Complex Continuing Care
 - Community/Home Care/Primary Care
 - Other – please indicate _____

3. How many years have you been practicing as a Dietitian?
 - Less than 5
 - 5-10
 - 11-15
 - 16-20
 - More than 20

4. How many tube fed patients/residents do you typically manage each month?
 - a. Less than 5
 - b. 5-10
 - c. 11-20
 - d. More than 20

5. Which age group describes the majority of your tube fed patients/residents?
 - a. Adults over 18 years
 - b. Pediatrics ages 1 -18 years
 - c. An even mix of pediatrics and adults

6. Which of the following tube feeding intolerance symptoms do your patients/residents experience? (select all that apply):
 - Nausea
 - Vomiting
 - Reflux
 - Bloating/Abdominal Distention
 - Feeling of fullness
 - Diarrhea
 - Constipation
 - Other (please specify)

Understanding the Need for Tools and Resources to Manage Enteral Nutrition Intolerance: An On-Line Survey

7. Tube feeding intolerance can interfere with the delivery of adequate nutrition or hydration to your patients/residents because of either reductions in feeding rates and/or feedings being turned off for periods of time during the day/night. How much of an issue, if at all, do you feel this is with your tube fed patients/residents?
 - A big issue/concern
 - Somewhat of an issue/concern
 - Not an issue/concern

8. How interested, if at all, are you in having tools and resources to assist in the management of tube feeding intolerance?
 - Very interested
 - Somewhat interested
 - Not too interested
 - Not at all interested

[If respondents answer “not too” or “not at all”, ask them why and move to question 15]

[If respondents answer “very” or “somewhat” interested, continue to question 9]

This next section of the survey will gather information for us to better understand your specific needs for tools and resources designed to manage tube feeding intolerance.

9. Thinking about the various tube feeding intolerance symptoms your patients/residents may experience, how **interested** are you in having tools and resources to manage...? (select one for each symptom)

	Very interested	Somewhat interested	Not too interested	Not at all interested
Nausea				
Vomiting				
Reflux				
Bloating / Abdominal Distention				
Feeling of fullness				
Diarrhea				
Constipation				
Other (please specify)				

10. Of the tube feeding intolerance symptoms listed below, which are you most interested in having tools and resources to help manage? (you can select up to three symptoms)
 - a. Nausea
 - b. Vomiting
 - c. Reflux
 - d. Bloating/Abdominal Distention

Understanding the Need for Tools and Resources to Manage Enteral Nutrition Intolerance: An On-Line Survey

- e. Feeling of fullness
 - f. Diarrhea
 - g. Constipation
 - h. Other (please specify)
11. Would tools and resources to help create awareness of tube feeding intolerance identification and management among nursing and other allied health care team members be of value to you?
- a. Yes
 - b. No
 - c. I do not know
12. What format of tools and resources would be most helpful for you in practice? (select all that apply)
- a. Web-based or electronic tools
 - b. Application for use on mobile devices
 - c. Hard copy/printed tools
 - d. Pocket cards/guides to carry
 - e. Posters to create awareness/education
 - f. PowerPoint presentation to create awareness/education
 - g. Management algorithms
 - h. A manual – available as a printed resource
 - i. A manual – available electronically
 - j. Other (please specify)
13. Of the tools and resource formats listed below, which would be most helpful to you in practice? (you can select up to three tools and resources)
- a. Web-based or electronic tools
 - b. Application for use on mobile devices
 - c. Hard copy/printed tools
 - d. Pocket cards/guides to carry
 - e. Posters to create awareness/education
 - f. PowerPoint presentation to create awareness/education
 - g. Management algorithms
 - h. A manual – available as a printed resource
 - i. A manual – available electronically
 - j. Other (please specify)
14. Do you have any additional suggestions for relevant tools and resources related to the management of tube feeding intolerance?
- a. Yes (please specify)
 - b. No

We appreciate your participation. This is the final section of the survey containing two demographic questions.

Understanding the Need for Tools and Resources to Manage Enteral Nutrition Intolerance: An On-Line Survey

15. Which category below includes your age?

- Younger than 30 years
- 30-39
- 40-49
- 50-59
- 60 years or older

16. Please indicate the province where you practice:

- BC
- AB
- SK
- MB
- ON
- QC
- NB
- PE
- NS
- NL
- Territories

Understanding the Need for Tools and Resources to Manage Enteral Nutrition Intolerance: An On-Line Survey

Supplementary Table: Interest and Preference for Tools and Resources to Manage ENI (n=219)

Variable	No. [%]
Interest in Tools and Resources to Manage ENI	
Very interested	163 [74]
Somewhat interested	50 [23]
Not too interested	6 [3]
Not at all interested	0
Top 3 ENI Symptoms Most Interested in Having Resources to Help Manage^a	
Diarrhea	159 [73]
Bloating/Abdominal Distention	91 [42]
Nausea	70 [32]
Top 3 Preferred Formats for Tools and Resources in Practice^a	
Hard copy/ printed tools	153 [70]
Management Algorithms	146 [67]
Web based or electronic	136 [62]

ENI, enteral nutrition intolerance

^a Sum greater than 219 and percentages add up to > 100 as more than one response could be chosen

Understanding the Need for Tools and Resources to Manage Enteral Nutrition Intolerance: An On-Line Survey

Additional Background Information

Prevalence and Management of Enteral Nutrition Intolerance in the Non-ICU Setting in Canada

Bethany Hopkins¹, Mary Donnelly-Vanderloo^{2,3}, B. Davis², Janet Madill^{2*}

¹Nestlé Health Science Canada, ²Food and Nutritional Sciences, ³London Health Sciences Centre, Brescia University College, London, Ontario

ABSTRACT

Background: Enteral nutrition intolerance (ENI) is described as one or more gastrointestinal (GI) symptoms that may interfere with delivery of enteral nutrition (EN). ENI is reported to affect patient quality of life (QOL) and reduce EN volume delivered, which may result in nutrition deficits, dehydration and malnutrition. Literature exists regarding ENI in the critical care setting, however, little is known about ENI outside the ICU. **Objective:** To investigate the prevalence and management of ENI in non-ICU settings in Canada. **Subjects and Methods:** An on-line survey was administered to registered dietitians (RDs) working in acute care (AC) long-term care (LTC), and home care (HC) settings across Canada. Respondents were recruited via convenience sample. Descriptive analysis were used to compute frequencies; one way ANOVA with Tukey's for continuous variables, using SPSS v 21, significance denoted as $P < 0.05$. **Results:** 240 RDs completed the survey (100 AC; 80 LTC; 60 HC), recalling information on 5611 EN patients managed in the preceding three months. Between 35% - 66% of patients had \geq one GI symptom, with diarrhea the most prevalent reported across care settings (AC 27%; HC 20%; LTC 15%) $P=0.001$. Symptoms of reflux, fullness, nausea and bloating were more prevalent in HC patients, $P < 0.05$. Across all symptoms and care settings, reducing EN volume was a common management approach (28-57%). **Conclusion:** ENI is common among tube fed patients in AC, LTC and HC settings. Based on these findings, there may be negative implications for nutrition delivery, malnutrition risk, and patient QOL.

<http://globalscienceheritage.org/downloads/prevalence-and-management-of-enteral-nutrition-intolerance-in-the-non-icu-setting-in-canada/>