Summary Report: Putting quality food on the tray

Context

Between September 2017 and August 2020, researchers from the University of Guelph and the University of Waterloo conducted a study to examine patients’ perceptions of food served in hospitals. Led by Dr Lisa Duizer and Dr Heather Keller and funded by the Ontario Ministry of Agriculture and Rural Affairs (OMAFRA), the primary aim of this work was to raise awareness of the importance of the quality of food served within Ontario hospitals to food satisfaction and intake.

The specific objectives of this work were to:

1) Measure the patient food experience within a diverse group of hospitals and patients within Ontario using a standardized Hospital Food Experience Questionnaire (HFEQ).
2) Determine if there is an association between food intake and HFEQ score.
3) Understand site-specific factors (e.g. type of food production) that contribute to increased scores on the HFEQ and the amount of food consumed.
4) Understand barriers and challenges associated with presenting food that patients want in hospitals.
5) Identify key practices and agents that support quality food in hospitals.
6) Build on the Greenbelt Fund’s investments to further increase public sector procurement of local food.

Sixteen diverse Ontario hospitals participated in this work. Using a quota system, each aimed to complete the HFEQ on a diverse range of patients who were greater than 2 days’ post admission. In addition to completion of this questionnaire, the patient’s consumption of a single meal was assessed by visual estimation. Reasons for poor food intake were ascertained, as well as demographics and reasons for admission to hospital. Sites completed a survey describing their food production and delivery systems, including food costs and use of local and outsourced food. Finally, a focus group and/or key informant interviews were completed.

Development of the Hospital Food Experience Questionnaire (HFEQ)

Many hospitals use a standardized survey tool to measure aspects of patient satisfaction, but it only contains a single question about food that is listed as an ‘amenity’ along the
same lines of the comfort of a patient’s room (e.g. temperature). In turn, some hospital foodservice departments and companies do conduct their own in-house patient food experience questionnaires. It is unclear; however, how questions on these surveys have been developed (e.g. content validity and reliability).

On a provincial level, improvements in food quality is hampered by the use of these in-house questionnaires. A standardized questionnaire that considers key issues affecting food quality will allow for a more comprehensive understanding of factors contributing to patient satisfaction with food served in hospitals. A robust, reliable and valid questionnaire that is freely available to end-users was a primary goal of this project. The newly developed Hospital Food Experience Questionnaire (HFEQ) includes 22 questions rated using 5-point Likert scales (1 = low importance/very poor sensory rating, 5 = high importance/very good sensory rating) asking about factors patients considered important about hospital food (e.g. healthy, local, good tasting); importance of food-related traits (e.g. easy to open packages); and sensory ratings (e.g. temperature, taste) of a single meal served.

For some hospitals and/or patient groups, a 22 item questionnaire may be considered too long. Therefore, a short version (HFEQ-sv) was also developed that includes 11 of the 22 questions on the original HFEQ, based on items that were associated with the overall rating on meal quality.

Both questionnaires successfully predicted the amount of food consumed by patients demonstrating they could act as a proxy for understanding a patient’s food consumption in hospital and resulting health-related outcomes. Each questionnaire is freely accessible on the Canadian Malnutrition Taskforce website.

What Foods are Patient’s Consuming?

Just less than one-third of patients consumed 50% or less of their meal, while 42% consumed 100% of their meal. Among all patients, items that were served to at least 30% of patients and most frequently consumed (i.e. ≥75%) included: milk (67.0%), soup (66.7%), juice (64.9%), cooked vegetables (61.7%), tea/coffee (60.1%), and fruit (59.9%). For patients who experienced low overall food intake (i.e. ≤50%), beverages and soft texture items (e.g., Jell-O/pudding, soup, yogurt, cake) were better consumed. A full list of foods consumed can be found in the appendix of the thesis prepared by Vanessa Trinca.

What food and food-related traits do patients value most in hospital meals, and how do patients rate a single meal served?

Using the HFEQ, food and food-related traits most frequently rated as "very important" included food taste (73.8%), freshness (70.5%), and receiving foods that met patients’ dietary needs (69.5%). Items that were least frequently rated as "very important" included
provision of culturally traditional food (25.6%), familiar food (35.9%) and local food (36.5%). Similarly, local food provision and receiving culturally traditional foods were most frequently rated as "not important" by 11.4% and 17.0% of patients, respectively.

Patients' sensory ratings of a single meal served were not as high as the ratings for the importance of food and food-related traits. Approximately 28.9% of patients rated meal quality as "very good." Meal temperature and taste received the greatest number of "very good" ratings at 34.6% and 30.1%, respectively, while meal smell and texture were least frequently rated as "very good" (26.2% and 26.6%, respectively). Approximately 10% of patients rated sensory aspects and meal quality as "very poor" or "poor."

These results indicate that for some patients, the properties of the food eaten don't meet their expectations and from a sensory perspective, ensuring foods are optimum in taste and flavour as well as texture is important.

**What Patient and Hospital Characteristics are Associated with the Hospital Meal Experience and Food Intake?**

The project aimed to determine the best measure of meal quality when considering key patient and hospital characteristics that may influence the meal experience.

Both patient age and gender were prominent predictors of the three meal quality measures where older and female patients were more likely to favourably rate overall meal quality and had higher scores on both the HFEQ and HFEQ-sv relative to younger and male counterparts.

Hospital characteristics associated with meal quality ratings varied depending on which measure was used. Those characteristics most closely associated with patient perception of meal quality included: proportion of foodservice budget spent on local food; meal preparation and foodservice delivery models; and average daily food cost per patient. Specifically, higher quality perceptions were found when average daily food cost per patient was greater than $8.00, and with foodservice models that supported hot, fresh food that is plated, with choice (e.g. room service) and/or portioning closer to the patient (e.g. bulk). Furthermore, differences in meal quality perceptions were also observed among varying hospital sizes, where medium and larger sized hospitals typically had higher HFEQ and HFEQ-sv scores than small hospitals, which may reflect certain practices occurring at larger sites that support quality meal provision.

With respect to food intake, patient perception of meal quality was an important determinant. Patients who consumed 75% or more of their meal had higher HFEQ and HFEQ- sv scores on average, suggesting a higher quality meal experience contributed to food intake. However, there were no patient or hospital characteristics associated with patient food intake when any of the three meal quality measures were considered. This suggests that meal quality is a more prominent determinant of patient food intake.
What are the Barriers and Facilitators to Quality Food Provision?

The Project Coordinator conducted interviews and focus groups with staff and volunteers involved with foodservice related processes to identify barriers and facilitators to quality food provision, and perceptions of what encompasses a high-quality meal experience. From these sessions, 5 key themes emerged:

1) Acknowledgement of organizational constraints to quality food provision (e.g. budgetary, staffing, foodservice models influencing sensory traits of meals);
2) Understanding patients’ expectations of hospital meals (e.g. what patients want and expect from hospital meals, how to define “quality”);
3) Gaining an understanding of patients’ nutritional needs (e.g. diagnoses, dietary restrictions, meeting patients’ food preferences);
4) Identifying current practices that support quality food provision and potential strategies that could support its provision;
5) Understanding the patient meal experience through different types of assessment (i.e. patient satisfaction data, waste audits and other informal methods) and timing of assessment.

What is Current Situation with Local Food in Hospitals?

Of the sixteen hospitals surveyed, purchasing patterns for local food varied. A total of five hospitals were unsure of the amount of their foodservice budget spent on local food. However, most of the hospitals that participated – a total of eleven or over two-thirds – did demonstrate an understanding of how to ask for local food and had the ability to track and report on their local food purchases. On average, these eleven sites spent 11% of the foodservice budget on local food including one hospital that spent up to 40% of their budget. Although over two-thirds of the hospitals from the study are sourcing local food, there is still a significant opportunity to increase their purchases of local food. There are lots of actions that can be taken, including:

- Establish a champion that sees local and sustainable food as a solution to making their organization better;
- Educate staff (e.g. farm tour) to build enthusiasm to promote local food;
- Establish a local food procurement policy that makes local food a priority and link it to larger organizational objectives (e.g. sustainability);
- Work with contract caterers and distributors to conduct a food audit to determine a baseline of local food purchases to set targets and measure progress;
- Build language into contracts that set minimum purchasing targets for local food and asks contractors to track and report; and
- Assess the whole menu when balancing the costs of local food, such as pair local food options that cost more with less expensive options.

Although local food was one of the items that patients least frequently rated as "very important", patients did rate taste and freshness as "very important". These food-related traits are strongly associated by consumers for reasons to purchase local food. There is
an opportunity for hospitals to better communicate the psychological benefits to patients that they are sourcing local food, such as highlighting local food options on daily or weekly menus or other visual aids, such as posters, to highlight Ontario farmers. From similar research in the healthcare sector that surveyed residents in long-term care, it was demonstrated that having local food choices on the menu did make residents feel good and helped to contribute to a positive mealtime experience to increase food intake.

For more information, including procurement tools and resources, visit the Ministry of Agriculture, Food and Rural Affair’s website.

Summary
The HFEQ is a valid and reliable tool that can be used by hospitals to identify patient priorities for hospital food and foodservice, and sensory ratings of meals. For example, patients generally rated food and food-related traits as important, such as taste and freshness, suggesting patients have high expectations for hospital meals and that a higher quality meal experience does contribute to food intake.

The project demonstrated the importance of foodservice attributes as foodservice delivery models and the proportion of the foodservice budget allocated to food were significantly associated with HFEQ scores. Foodservice models supporting hot, fresh food that is served or chosen closer to the patient demonstrated more positive ratings and mean HFEQ and HFEQ-sv scores.

Finally, the project demonstrates there continues to be a significant opportunity to increase spending on local food in hospitals and to better communicate the benefits of local food to patients.

Authorship
This document was prepared and edited by Dr Lisa Duizer, University of Guelph, Dr Heather Keller, University of Waterloo, Vanessa Trinca, University of Waterloo and Jeff O'Donnell, OMAFRA.