

Getting a Taste for Food Waste: A Mixed Methods Ethnographic Study into Hospital Food Waste before Patient Consumption Conducted at Three New Zealand Foodservice Facilities

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ABSTRACT

Foodservice organizations, particularly those in hospitals, are large producers of food waste. To date, research on waste in hospitals has focused primarily on plate waste and the affect of food waste on patient nutrition outcomes. Less focus has been placed on waste generation at the kitchen end of the hospital food system. We used a novel approach to understand reasons for hospital food waste before consumption and offer recommendations on waste minimization within foodservices. A mixed methods ethnographic research approach was adopted. Three New Zealand hospital foodservices were selected as research sites, all of which were contracted to an external foodservice provider. Data collection techniques included document analyses, observations, focus groups with kitchen staff, and one-on-one interviews with managers. Thematic analysis was conducted to generate common themes. Most food waste occurred during service and as a result of overproduction. Attitudes and habits of foodservice personnel were considered influential factors of waste generation. Implications of food waste were perceived differently by different levels of staff. Whereas managers raised discussion from a financial perspective, kitchen staff drew upon social implications. Organizational plans, controls, and use of pre-prepared ingredients assisted in waste minimization. An array of factors influenced waste generation in hospital foodservices. Exploring attitudes and practices of foodservice personnel allowed an understanding of reasons behind hospital food waste and ways in which it could be minimized. This study provides a foundation for further research on sustainable behavior within the wider foodservice sector and dietetics practice.

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WORLDWIDE, INCREASING ATTENTION IS PAID to the global issue of food waste, with growing concern around environmental, social, and economic costs.^{1,2} Although sometimes used interchangeably with the term food loss, food waste is most commonly defined as the waste generated toward the end of the food chain.³ National and/or sector waste volumes have previously been cited,^{4,5} and such figures reveal that foodservices are large generators of food waste. In hospital settings, it has been found that food contributes to up to 50% of the total waste stream^{6,7} and was the next largest component of the total combustible waste following plastics.⁸ The clinical condition of patients, environmental factors, food, and menu issues have been suggested as contributing factors to high waste rates in hospitals.^{9,10} The research focus on waste in hospitals to date has been based primarily on plate waste levels and the influence of food waste on patient nutrition outcomes.^{9,11-15} What is notably missing from the work on food waste in this setting is an understanding of waste generation at the kitchen end of the

hospital food system, with only two studies considering this.^{16,17} Dietetics practitioners and foodservice managers are often accountable for ecologically sound and viable decisions throughout the food system.¹⁸ They must, therefore, also find ways to manage the challenges of minimizing waste in the kitchen whilst achieving food safety and financial goals.^{5,19} The overall objective of our study was to gain an insight into how and why food is wasted before hospital patient consumption. Understanding this can facilitate recommendations to minimize the volume of preconsumption food waste to achieve more sustainable hospital foodservice systems.

METHODS

Recently, authors have acknowledged the need for carefully designed and conducted qualitative research in nutrition and dietetics, including foodservice settings.^{20,21} Qualitative research methodologies allow depth and breadth of understanding when exploring human behavior or other phenomena. For example, qualitative research methods have

been used to investigate compliance of behavior with identified food safety standards, hand washing behaviors, motivators and barriers to follow food safety practices, and manager and employee perceptions of food safety.²⁰ Despite this, research around food waste in foodservices remains predominantly quantitative. To gain an in-depth understanding of how and why food is wasted before patient consumption, we adopted a mixed ethnographic methodology. Although the term ethnography lacks a single standard definition, in terms of data collection it usually involves researchers participating in everyday (ie, natural) contexts for an extended period of time to watch what happens, listen to what is said, ask questions, and collect documents.²²

Study Location

Data were collected at three hospital foodservice sites in a major city in New Zealand over a 2-month period in 2012. Sites were selected because all three used a cook-fresh production system and conventional tray line service (ie, they prepared meals in the hospital kitchen that were then distributed to various parts of the hospitals), followed a similar 2-week menu cycle, and allowed access to a large group of foodservice personnel for interviews and focus group participation. During the preceding year, the average number of daily meals at each of the three hospitals was 1,752, 680, and 2,420. The lead researcher had previous foodservice experience at all sites and that enhanced the researcher's understanding of the foodservice environments.

Definition of Food Waste

Because the focus for this research was on investigating the latter part of the foodservice system (from procurement to service) the term *food waste* (as opposed to *food loss*) was used. This included all the kitchen waste that could be classified as either avoidable (ie, food and drink thrown out that was, at some point before disposal, edible in the vast majority of situations), or as possibly avoidable (ie, food and drink thrown out that some people eat and others do not, such as bread crusts, or that can be eaten when a food is prepared in one way but not another, such as potato skins). This definition excluded unavoidable waste arising from waste preparation in the kitchen (ie, waste that was not, and had not been, edible under normal circumstances [such as onion peels]).²³ The definition of food waste was provided to research participants, and to whom it was further emphasized that the focus was on food waste generated before the point of consumption (ie, before food carts were sent to the ward), thus excluding plate waste that returns from the ward.

Data Collection Process

Data collection involved the integration of four data collection techniques: document analyses, observations, focus group sessions, and one-on-one interviews. Ethical approval for the project was obtained by district health boards and the University of Otago's Ethics Committee. Written informed consent was obtained by all focus group participants and interviewees. The guides that were developed to structure each of the four stages of the data collection process were screened by a panel of experts (university staff) as well as reviewed by the catering company's manager and the hospital nutrition manager at each of the research sites.

Document Analyses

The first activity conducted was an analysis of existing documents. This involved exploration of existing records, including company policies and plans, production and service materials, waste records, and quality assurance tools and records. The lead researcher spent between 3 and 5 hours analyzing these documents at each site. Each session involved reading material, taking relevant notes, and, in some cases, clarifying details with the nutrition manager. A documentation analysis guide was developed from the literature to assist this process (Figure 1). This guide incorporated components of the foodservice systems model²⁴ as well as key elements of practice (images, materials, and skills).²⁵ In this case, where the practice being studied was the generation of food waste, the elements of research interest included any existing written recordings of staff images of food waste (such as staff perceptions and attitudes toward waste), food waste management materials (such as plans, policies, quality controls, and communication resources), and notes related to the related food waste management skills of staff (such as competence and procedures for forecasting and for following specified waste management procedures).

Observations

The second activity conducted was observations of food waste generation practices. This included observing events such as sandwich preparation, nutritional supplement preparation, menu processing, lunch production, lunch service, lunch post-service, dinner menu processing, dinner production, dinner service, dinner postservice, and forecasting. Breakfast meal services were not observed due to practical constraints on the researcher's time. The observations were made under natural (everyday contexts) settings and approximately 9 hours was spent at each site (9 AM to 6 PM). Recommendations for observational data collection of Singleton and colleagues²⁶ was adopted in this study. This included keeping a running description of the day's observation (eg, notes on the setting, people, individual actions, and group behaviors), recording ideas and notes for further information use (eg, spontaneous ideas related to data collection and data analysis such as potential questions for focus groups or interview), noting personal impressions and feelings experienced (eg, that may have indicated biases clouding the observations), and making methodology notes that included any ideas related to the techniques used to conduct research (eg, difficulties in collecting data and biases that might be introduced by the data collection techniques). The same guide that was designed for the document analyses was also used to guide the data collected from the observations (Figure 1). Brief conversations with foodservice personnel allowed clarification of happenings observed when necessary.

Focus Group Sessions

For the third activity we conducted one focus group session at each of the three sites. A total of 22 people participated in one of these three focus group sessions. Participants were identified as individuals with the most involvement in and relevance to food waste-related activities and included supervisors, cooks, menu processors, and kitchen assistants. The decision to exclude catering company management was

Systems component	Subsystem	Element of Practice Theory		
		Images	Materials	Skills
Inputs	Raw materials			
	Information			
	Energy			
	People			
	Facilities			
	Money			
	Time			
Operations	Functional subsystems:			
	-Procurement, receiving, and storage			
	-Preparation			
	-Production			
	-Service			
	-Cleaning and sanitation			
Controls	Plans			
	Contracts			
	Law/regulations			
Management	Functions			
	Linking processes:			
	-Communication			
	-Decision making			
Memory	Financial			
	Personnel			
	Forecasting			
Outputs	Finished goods			
	Services			
	Ideas			
	Financial accountability			
	Customer/employee satisfaction			
Feedback				
Environmental factors				

Figure 1. The researchers' guide used for the documentation analysis and observations in a study to understand reasons for hospital food waste before consumption.

made to ensure that that kitchen staff could talk openly and honestly about the issues. Focus group sessions were held during staff lunch breaks to minimize the affect of the research on foodservice operations. This restricted the focus group time to 30 minutes. Focus group sessions were conducted in a conversational style so the precise nature of the questions had not been predetermined. [Figure 2](#) presents the

moderator's guide used to structure the focus group sessions. The questions in this moderator's guide were designed to elicit more information about data that had already been collected in the document analyses and observation phases of the research. Discussion was guided in the following areas: general thoughts on food waste in the kitchen, challenges around food waste minimization, rules and regulations

Introduction (~2-3 min)

Hello. As part of our research, we are looking at how and why food waste is produced during the preparation, production and service of hospital meals.

Firstly I would like to thank you all for coming to this group discussion. It shouldn't take any longer than 30 minutes and at the end you will receive a \$10 supermarket voucher.

Throughout the discussion I will be asking a few questions and I would like you to just discuss the questions amongst yourselves. I would like to remind you that this discussion is confidential and nothing that you say during the course of the session will be repeated to any person outside of the group.

Are there any questions before we begin?

Ice Breaker (~1-2 min): You all know each other, but I don't know you. So could we go around and say your name and your favourite fruit.

Focus Group Questions (~4-5 min per question):

Today we will be talking about food waste which comes from the preparation, production and service of hospital meals **before the trolleys are sent to the ward**. So, this does not include the waste that returns from the ward.

1. **What do you think about the issue of food waste in the kitchen?**
(Is it important? Why/Why not?)
2. **Is it easy to cut down on food waste?**
(If so, how? If not, what are the challenges around doing so?)
3. **Are there any guidelines to cut down the amount of food waste produced? Do they work well?**
(Why/Why not?)
4. **During your training, has the topic of food waste come up?**
(If yes, what did it involve? How could it be improved?)
5. **Does forecasting affect the amount of food waste? If so, how?**
(How could the forecasting system be improved? Investigate thoughts on the idea that too much food is better than too little.)

Wrapping up: We only have a few minutes left now; is there anything else people would like to say?

Conclusion (~2-3 min):

Thanks everyone for participating in this group discussion today. If you do have anything else you wish to discuss on the topic of food waste, please let us know as we will be running short individual interviews. Otherwise, here is the email address to contact us on if anything else comes up that you would like to share.

(Hand out vouchers.)

Figure 2. The moderator's guide used for the focus group session in a study to understand reasons for hospital food waste before consumption.

around food waste management and prevention, and experience and training in food waste. All participants were assured that their responses would remain confidential and that they would have no influence on their work evaluations. Focus groups were convened, audiotaped, and transcribed by the researcher with individual names and hospital sites coded for confidentiality.

Semistructured Interviews

The fourth and final activity was conducting semistructured interviews. A total of seven interviews were conducted with members of management, with two or three people chosen as representatives from each site who manage various groups of foodservice personnel. [Figure 3](#) presents the guide used for the one-on-one interviews. Again, the questions in this guide were developed to incorporate and expand on information about data that had already been collected in the document analyses, observation, and focus group phases of the research. Five key discussion areas guided the direction of the interviews: thoughts on food waste; waste management

strategies, including challenges and opportunities; decision-making processes around waste management; staff training for waste management; and recent changes made to waste management procedures. Interviews were audiotaped and transcribed with individuals' names and hospital sites coded for anonymity.

Data Analysis

Using Braun and Clark's²⁷ guidelines, thematic analysis was manually conducted using Excel and Word 2007 (2007, Microsoft Corp). Thematic analysis is a method for identifying, analyzing and reporting patterns or themes within data.²⁷ The lead researcher became familiar with data from document analyses, observations, focus groups, and interviews by transcribing verbal data, reading, re-reading, consulting the literature, and noting initial ideas and discussing these with the rest of the research team. The process of creating themes was theory and data driven. In practice this meant that the researchers looked for both specific data on predetermined themes (components of the foodservice

Interview Questions

- What are your thoughts on food waste in the hospital kitchens during the preparation, production, and service of hospital meals?
 - When and how does food waste occur during these processes?
 - What role do you play in the prevention and/or management of food waste?
 - Are environmental considerations taken into account when choosing suppliers?
- What strategies are in place to reduce the amount of waste produced during the preparation, production, and service of hospital meals?
 - Can you tell me about your company's waste measurement procedure policy/daily wastage records? (How effective are these? How is the data used? How are results communicated to staff? Is food waste ever expressed in a monetary value?)
 - Do you experience challenges around minimizing the amount of food waste?
 - Clarify the policy around reusing leftovers.
 - Do you see any opportunities for further minimizing the amount of food waste produced during the preparation, production, and service of hospital meals? (eg, composting, redistributing production leftovers, and previous experience in managing/dealing with food waste)
- How are decisions around food waste made?
 - Who is responsible for making waste-related decisions? (To what extent are foodservice personnel, for example cooks, allowed to make decisions around food waste such as reusing leftover food in other recipes?)
 - To what extent are decisions around food waste influenced by international trends in foodservice sustainability?
- What training is provided for foodservice personnel in regard to the issue of food waste? (Do you think it is effective? Are there any challenges around this?)
- I have noted that there have been recent changes made in regard to managing and dealing with food waste:
 - What changes have been made?
 - What were the driving factors behind these changes?
 - Have you noticed any results yet?

Figure 3. The semistructured interview guide used for the one-on-one interviews in a study to understand reasons for hospital food waste before consumption.

systems model²⁴ and key elements of food waste practices²⁵) as well as allowed new themes to emerge from the data. Once the overarching themes had been determined, data within these themes were then summarized and integrated with extracts, quotes, and photographs.

RESULTS AND DISCUSSION

The following section summarizes results obtained from the document analysis (D), observations (O), focus groups with kitchen staff (F), and interviews with managers (I). The results are organized into six major categories (food waste generation, reasons for food waste, attitudes and perceptions of foodservice personnel on food waste, food waste prevention, implications of food waste, and food waste management). Under each of these headings, the related themes (such as poor quality control and inadequate training) are presented and then discussed in relation to existing literature.

Food Waste Generation

A 2-week snapshot of the waste records at each site was taken (D). These records revealed that over the 2-week period, the hospital that served 1,752 meals per day generated a total of 350 L food waste and the hospital that served 2,420 meals per day produced 200 L. Waste quantities from

the third hospital, which served 680 meals per day, were not able to be estimated because of the hospital's incomplete record keeping (D, O). Two managers agreed that there will always be some form of waste because the company must ensure there is adequate food available at all times for all patients (I). Paralleling the findings of previous research,²⁸ food waste occurred throughout all stages of the foodservice system but most was identified during service and as a result of overproduction (F, I). Lack of portion control has also been determined as a contributor to plate waste^{9,15,29} and was a much discussed topic in this study (F, I). A total of eight focus group participants believed that more training in portioning would be helpful to minimize the amount produced (F). All six managers believed food waste was related to inconsistent portioning at service by kitchen staff and emphasized the importance of staff training to reinforce portion control (I). Dissimilar perceptions of portion control between managers and kitchen staff appeared to be due to the differing levels of importance placed on compliance or individual opinions on the practicality of portion sizes.¹⁵ Discussion around portion control was interesting, given the quality controls of standardized recipes, contractual portion standards, and portioning tools in place. For example, portion size guidelines were on display at all sites indicating the weight of each menu item and serving utensil required. Photos for portion control were also displayed at two of the

sites (D, O). The researcher actually observed a relatively small amount of food waste generated due to inaccurate portioning of food by kitchen staff during service at all three of the research sites (O).

In contrast to a previous report,²⁸ minimal food waste was observed during storage, preparation and production, with only small amounts of fresh produce waste during sandwich and salad preparation (O, F, I). This was unsurprising because of the use of pre-prepared ingredients and high compliance with stock rotation. Managers acknowledged that the use of pre-prepared ingredients shifts responsibility of food waste generation further up the food chain (I). This observation supports a recommendation of establishing a shared vision for sustainable development throughout interlinking stages of the food chain.¹⁵

Reasons for Food Waste

Although none of the three sites currently used electronic forecasting (O, F, I), at all sites managers were in the process of developing a new forecasting model that will eventually replace manual counting (I). Manual counting was performed by menu processors to predict the following day's meal numbers. Overproduction was a main cause for food waste at all sites (O, F, I) and, on some occasions, one or two full food carts were observed being sent directly to the garbage disposal (O). At all sites this overproduction resulted from inaccurate forecasting (O, F, I). This is a similar finding to previous hospital-based research.^{15,29} Challenges of the forecasting system included manual counting within time constraints, forecasting for wards that do not order from menus, and rounding forecasted numbers up or down (F). Manual forecasting systems are subject to errors and often require significant time and energy. Many health care facilities use computerized menus and forecasting systems.^{30,31} Views of foodservice personnel parallel the reported benefits of such computerized systems: increased efficiency, accuracy, and patient interaction (F).³⁰⁻³² The unpredictable nature of the hospital environment, such as high turnover of patients and seasonal variability, was discussed as a reason for food waste (F, I). Fluctuation in production demand due to changes in hospital bed capacity and patient diet codes helps explain why higher levels of food waste have been reported in this foodservice sector.¹⁰ Regulations around food safety and quality control limit the redistribution of any plate waste to composting or animal feed programs (F, I). Given that kitchen and plate waste were combined at all sites, redistribution was also not an option for the kitchen waste. This study illustrated how waste-related practices are integrated and influenced by multiple people within a hospital organization. It also stressed the importance of effective communication among personnel involved in forecasting and production.

Attitudes and Perceptions of Foodservice Personnel on Food Waste

Multiple differences in perceptions and behaviors of foodservice personnel highlighted a challenge in achieving organizational sustainability. Although some participants expressed concern over the volume of food waste, others considered the amount to be minimal given the large catering numbers (F, I). Attitudes and habits of foodservice personnel

were raised as factors that influence waste generation (I). Managers believed that whereas some foodservice personnel are proactive around the issue of food waste, others are comfortably set in their routines, particularly those who have been working in their roles for many years. Staff who are more actively involved in the generation and management of waste, such as supervisors and cooks, were seen and reported to be more conscious of waste (O, I). Previous work experience of kitchen staff and managers was often related to thoughts and practices around food waste (F, I). Experiences were discussed both within the company (eg, familiarity with recipes and production numbers) and external to the company (eg, comparing waste levels and initiatives with previous foodservice settings).

Food Waste Prevention

Throughout the foodservice system, many plans, policies, and quality controls were identified that assist in food waste prevention (D). Examples include stock monitoring and rotation policies, meal auditing, food safety plans, and regulations, as well as portioning tools and guidelines. The use of pre-prepared ingredients and standardized recipes reduced the amount of food waste during preparation and production (O, F, I).

Consistent with past research, we identified external influences on waste-related behaviors, including government, technological, and economic factors (F, I).^{17,33} Most significantly, it drew attention to balancing waste-related practices with food safety risk (O, F, I). For example, the hospitals' food safety plans did not allow re-use of bulk food left over at the tray line. This was regarded by several focus group members as unnecessary waste. Stern and colleagues³⁴ commented that social structure acts by providing opportunities and constraints that shape behaviors and the perceived response of behaviors. The perceptions of foodservice personnel were often constrained or overruled by food safety legislation.

Implications of Food Waste

Food waste has different meanings for different levels of foodservice personnel (F, I). Although kitchen staff focused on both social and financial implications of food waste, managers were more concerned with the financial. This emphasis reflected the managers' greater responsibility for financial resources. The financial benefit of waste reduction was discussed in relation to stock monitoring and control, the use of pre-prepared ingredients, and the importance of accurate forecasting. Recently, systems have been implemented to calculate the monetary values of waste and improve forecasting accuracy (D, I). However, feeding this information back to staff was identified as an area for improvement (I).

Environmental implications of food waste were discussed by three managers, although as one of the managers stated, "currently the environment is still a little 'e'" (I). Although a move toward increasing discourse about environmental sustainability within the organization was apparent (paralleling the so-called greening trend of the wider foodservice sector^{19,35}), it really was only an emerging concept. Therefore, the lesser focus by the managers on the environmental implications of food waste, compared with the financial implications, was unsurprising. Environmental initiatives need to be carefully balanced with food safety risk, particularly in a

hospital setting because patients may be immune-compromised. At the time of the study, the training on waste was from the perspectives of food safety and quality control rather than the environment (F, I). One manager questioned whether it mattered how training was targeted, as long as the end result of waste reduction was achieved (I). Focus group and interview participants believed that more specific training in food waste could help raise awareness of the issue. Two focus group participants drew on the social implications of food waste by relating it to hunger and malnutrition both in New Zealand and in developing countries.

This study supported the need to move beyond economic success to incorporate social and ecological values as measures of sustainability.^{2,36} It highlighted the importance of communication between all levels of foodservice staff about the values and drivers of sustainable practices. In line with findings by Whitehair and colleagues,³⁷ the study revealed that understanding images that are important to staff (such as social implications of food waste) may help managers find effective ways to structure and deliver resources and initiatives (eg, visual resources and training sessions).

Food Waste Management

Two waste management systems were in place, one a company-wide policy, and the other site specific (D, O, I). These involved measuring and recording food waste using a plastic bin, or, visually estimating quantity and providing reason for leftover food. Compliance to these systems varied between meal service and sites (O). Foodservice personnel raised uncertainties around what should be included in this measurement process; therefore, not all food is accounted for as part of these waste management systems (O). During observations, for example, a kitchen staff member stated: "Sometimes it does [food waste gets weighed], but tonight it is not." This may have reflected a training gap among kitchen staff, affecting their attitudes and skills around the handling of waste. This finding is consistent with Sonnino and McWilliam,¹⁵ who found waste measurement systems in three Welsh hospitals to be unclear and food waste to be under-recorded by ward staff. Two managers believed there is a need to inform staff on the concept and purpose behind the waste management system to help increase interest and awareness (I).

A gap was identified in the company-wide system in that information was being provided for paperwork purposes and no feedback on performance was provided (I). Our study underlined the need for standardized and consistent waste measuring policies, procedures, and feedback mechanisms, as well as staff training, to ensure sustainable waste management practices. It highlighted an opportunity to benchmark with effective waste management practitioners and to apply best-practice improvement.

CONCLUSIONS

Opportunities to minimize food waste before patient consumption include increased training around the economic, social, and environmental implications of food waste, and development of standardized waste management. Of particular relevance in a hospital setting, we stressed the importance of an accurate and reliable forecasting system and

enhanced communication between everyone involved in decisions around food quantities required. Because increased responsibility in food waste was found to positively influence waste-related behaviors, an environmental champion program (as outlined by Hargreaves³⁸) may encourage involvement in sustainable development at all levels of an organization. Increasing the use of visual materials, such as food waste monitoring charts, could help overcome language barriers with staff and provide continuous feedback on food waste volumes. More explicit training programs focused specifically on waste reduction would be beneficial. The results of our study highlight that although management may be primarily concerned about the economic costs of waste, this is not always the case for the kitchen staff, who also voiced concerns about the social implications. Getting buy-in from kitchen staff on food waste issues will require that managers explain the reasons for the company's food waste reduction efforts in an appropriate way. Consistent with previous research,¹⁵ our study highlights the importance of collaborating with foodservice staff to develop innovative solutions to reducing food waste. A planning workshop, designed to bring management and kitchen staff together to brainstorm ideas for short- and long-term food waste reduction initiatives, is an obvious place to start.

Our study's mixed method ethnographic approach provides in-depth analysis into the attitudes and practices of foodservice personnel in regard to food waste. Although three hospital sites used a central contract food operation was advantageous in that it allowed for a number of useful comparisons between the sites (eg, the researchers were able to investigate similarities and dissimilarities on how central company policies were practically implemented at the different locations), it does mean that the results of this study are case-dependent and should be understood within this context. Caution should be taken in attempting to generalize these findings to different types of hospitals or to foodservice settings such as schools.

Although these results are derived from a single case study, it has generated recommendations to extend or pursue further research. First, application of a mixed-methods ethnographic research design to diverse foodservice settings is desirable; for example, in facilities with different production and service styles. Second, extension of this research by placing more emphasis on food waste during procurement may help establish a shared vision for sustainable development throughout the food chain. Third, it may be argued that this study's in-depth analysis of a single environmental issue overlooks the connections and conflicts between multiple behaviors that contribute to sustainability. Therefore, it provides a basis to thoroughly investigate other categories of sustainability. For example, although the use of pre-prepared ingredients reduced food waste, it contributed to increased levels of packaging waste.

An array of factors contributed to food waste generation in these hospital foodservice organizations. Most notably, our study highlights that the attitude of foodservice personnel influences waste-related practice. Ultimately, as food and nutrition experts, dietetics practitioners direct policy, education, and changes in practice. Generating sustainable behavior in all areas of dietetics will contribute to the sustainability of the global food system both now and in the future.

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STATEMENT OF POTENTIAL CONFLICT OF INTEREST

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