Transformation to Room Service Food Delivery
In a Pediatric Health Care Facility

KAREN KUPERBERG, MSc, RD, Department of Nutrition and Food Services and Department of Clinical Dietetics, The Hospital for Sick Children, Toronto, ON; DIANA MAGER, PhD, RD, Department of Clinical Dietetics, The Hospital for Sick Children, Toronto, ON, and Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB; SUSAN DELLO, BSc, RD, Department of Nutrition and Food Services, The Hospital for Sick Children, Toronto, ON

Abstract
Patient food service is an important component in the nutritional management of hospitalized children. The previous meal delivery system at The Hospital for Sick Children in Toronto was a cold-plating re-thermalized system. Issues related to this model included order lead time, the reheating process, menu selection, and service style. Research into other systems led us toward room service, an innovative and flexible mode of meal delivery. Transformation to room service occurred over one year, and included implementation of a new computer system, kitchen renovation, redesign of menus, and a new meal delivery system called Meal Train, and changes to human resource allocations. Throughout the transformation, consultations were held with key stakeholders, including the children’s council, the family advisory, the nursing council, and a multidisciplinary committee involving nursing staff, dietitians, patient service aides, infection control personnel, occupational health employees, patient representatives, and food services staff. Now, Meal Train is running smoothly, and meal days and food costs have been reduced. Others considering a project like this must know their clients’ needs and be willing to think outside the box. They should familiarize themselves with current information on systems and equipment, consult with key stakeholders within their organization, and then create the system that will work for them.


INTRODUCTION
At The Hospital for Sick Children (SickKids) in Toronto, one of the values we strive to demonstrate is excellence in compassionate, family-centred care and service (I). Consequently, the Department of Nutrition and Food Services looked for a new approach in patient food delivery to address the needs of our diverse and unique population, and to focus on family-centred care. Meal delivery systems are an important component in ensuring that the nutritional management of hospitalized children is provided consistently.

Rationale for change
The previous meal delivery system was a cold-plating re-thermalization system, where menu selections were made two days in advance from a restaurant-style menu, entrees had set side dishes and substitutions were not possible.
Most food was outsourced, cold plated, and re-thermalized before delivery at set times throughout the day.

Several issues are related to this model of delivery, especially when one is catering to patients in a pediatric health care facility.

**Order lead time:** Patients ordered two days in advance, and, therefore, for the first two days of a hospital stay, patients had no choice as to the food they ate; 45% never got to pick what they ate during their stay, as it was for only up to two days (2).

Within these two days, changes often occurred in children’s appetites and medical conditions. Food choices they had previously made were no longer wanted, and often trays of food were uneaten or only partially eaten. Frequently a second tray was delivered to provide patients with a more suitable meal at a time when they were willing or able to eat.

**Reheating process:** The reheating process had limitations. Trays and dishes were extremely hot to the touch, condensation accumulated on the trays, re-thermalization of trays caused unappetizing odours, food choices were limited, and the trays looked institutional. Tray delivery carts were bulky and difficult to maneuver. Extensive reviews and modifications occurred to improve our former system. Despite these modifications, feedback from the children’s council and discussions with parents and families indicated that patients were not satisfied.

**Menu selections:** Menus are limited with a cold-plating system, as not all food items heat well or consistently. Foods such as fettuccine alfredo were burned on the bottom, stir-fries and french fries were soggy, and Caesar salad or sandwich wraps did not hold up well. Entrees were plated in advance with pre-selected sides, and thus choice was limited further.

**Service style:** Lack of flexibility in menu combinations and in order and delivery times was not conducive to meeting the special needs of hospitalized children. The patient feeding system looked and felt quite institutional. We knew we had to investigate the whole picture and create a system that provided flexibility so that children could order what they wanted and when they wanted to eat.

**TRANSFORMATION TO ROOM SERVICE**

A survey of food delivery systems led us to decide that more innovative and flexible meal delivery was required. Room service has been a growing trend within hospitals in the United States; it brings the customer service element back to patient feeding. Recently room service has been implemented in a number of facilities across Canada, and more facilities are investigating or planning to implement such a system (3,4). In an evaluation of room service trends in health care facilities, Don Miller & Associates found that room service is “the most radical trend and change in hospital food service we’ve seen in 38 years” (5). The 2004 National Society for Healthcare Foodservice Management (NSF) room service study showed that 26% of NSF operators in Canada (13% of respondents) and the United States currently offer room service in their facilities, and 42% have plans to implement room service in the future (6).

Our transformation to a room service model of delivery occurred over one year (2005 to 2006). This included the implementation of a new computer system, kitchen renovation, redesign of our menu and meal delivery system, and changes to human resource allocations. The computer system, components of meal delivery, and the redesigned menu were tested in a pilot study that targeted three in-patient units (7,8). We collaborated with several stakeholders within SickKids, including the children’s council, the family advisory, and the nursing council, and established a multidisciplinary room service committee with other health care professionals, including nursing staff, clinical dieticians, the patient services assistant group, infection control personnel, occupational health employees, patient representatives, and our own staff (Figure 1).
Stakeholders’ input was used to develop our unique room service system. A detailed analysis of the five components (meal delivery system, menu redesign, kitchen renovation, computer system implementation, and staffing changes) was conducted before implementation.

**Meal delivery system**

We ran a naming contest for the meal delivery system and chose “Meal Train,” as this theme could be incorporated into our menus, trays, and carts. Our goal was to make mealtime fun for patients, as well as something they could look forward to and have some control over. We use colourful graphic “Meal Train” trays in pink, orange, green, and red. These are transported to patient wards in customized carts designed to look like the caboose of a train. The bright, colourful look is far from the institutional look of our former system. Time from placing food orders to delivery is 45 minutes or less.

**Menu redesign**

The menu redesign was focused on creating a flexible, fun, and kid-friendly menu that would allow children to mix and match food items. Patients can “create their own” sandwiches, pizzas, or pastas. Breakfast is available all day, and includes homemade pancakes and waffles and made-to-order omelettes. New to the menu are beef, tofu, or chicken stir-fries and chicken Caesar salad. During menu review, products were reassessed to identify foods that could span many dietary restrictions, including allergies. An example is our low-sodium, fully cooked grilled chicken breast that is used in chicken burgers, chicken stir-fries, chicken Caesar wraps, and chicken pastas.

Toronto is a multicultural city, and our patient profile reflects this. With our former system, using predominantly outsourced, fully prepared meals and conduction re-thermalization, not all food could be presented well on the trays. We also did not have the labour required to prepare ethnic foods in-house. Since Meal Train implementation, we have had the flexibility to offer special menu items such as chow mein, pad Thai, Greek kebabs, falafels, and butter chicken. Our goal is to incorporate a weekly chef special to continue to add variety and the unexpected.

We have a regular menu shelf that can accommodate most food allergies and diet restrictions, with the exception of kosher, gluten-free, fluid (clear and full), and texture-modified diets, which have their own menus.

**Kitchen renovation**

Kitchen construction occurred over three months, during which we continued to operate with our cold-plating system. The kitchen was designed to mimic a restaurant or hotel-style à la carte food preparation model. The newly designed L-shape kitchen includes a three-deck pizza oven, grill, cooktop, fryer, and steamer, as well as a bank of regular and convection microwaves. These are used for on-demand reheating of foods such as vegetables, pureéd and minced items, lasagna, vegetarian _daal_, and grilled chicken breast. Popular items such as chicken noodle soup, macaroni and cheese, and meat sauce are held on our new steam table.

We freshly prepare items including sir-fries, grilled cheese sandwiches, waffles, omelettes, pizza, and subs.

**Computer system implementation**

Part of this transformation included the selection of, training for, and implementation of a new computer system to manage room service. Several computer systems were evaluated. The one selected had the ability to handle rapid data entry at meal times, to provide flexible meal ordering (meals can be ordered from outside the hospital, and ordering ahead of time is possible), and to manage multiple allergy and food restrictions. This system allows patients or their caregivers to order food that accommodates diet restrictions and allergies. Alternatives to restricted foods are offered at the time of ordering.

**Staffing changes**

We added an additional 4.1 full-time equivalents (FTEs), in part-time employees, to run room service (9). With our former cold-plating system, dinner trays were completed by 2:00 p.m. and the majority of staff members went home at that time. With room service, a full complement of staff is maintained until after the dinner period (Figure 2) (9). This transition has brought the entire food service team, including diet technicians, dietary aides, and administrative dietitians, closer to patient care. We now

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**Figure 2**

Average daily head-count plotting of food service staff for meal preparation and delivery, used for full-time equivalents calculation for room service implementation

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Notes:
The average daily head count is based on weekly staffing schedules. The head count excludes diet technician and supervisor positions, as they would not be affected by the proposed change.

Full-time equivalents (FTEs) calculation: (total daily hours x 1.1 area under the curve): Room service (98) x Current system (76) = 22. Note that the actual area under the curve was adjusted to account for the paid lunch hours of fulltime FTEs in both systems (9); total FTEs = 4.1. This means the Department of Nutrition and Food Services needed to increase its staffing level by 4.1 FTEs to implement the room service system.
communicate directly with patients and their families, and we are able to respond immediately to their requests and needs. Within the first year after the implementation of Meal Train, we had reduced staffing by 0.3 FTEs, which brought staffing to 3.8 FTEs above our former cold-plating system.

The final transition
At 7:30 a.m. on July 25, 2005, we opened our phone lines to patients throughout the hospital. Now patients call the Meal Train number to order; the lines are open for two-hour periods at breakfast, lunch, and dinner. This model is similar to the one tested in the pilot study (7). Parents can also order their child’s meal from home or their office.

One year later, Meal Train was running smoothly with minimal changes. Meal days had been reduced by 24%, as had overall food costs (Figure 3). Assessment with the Picker Scale (10), a tool the hospital often uses to measure patient satisfaction, showed a 21% increase in satisfaction. In the 2007 Canadian Council on Health Services Association report, Meal Train was identified as one of the leading practices at SickKids because it is a creative and innovative system worthy of recognition (11).

The implementation of and transition to Meal Train ran smoothly; however, challenges were encountered. Language barriers continue to be an issue; in addition to menu translation into Chinese, we are looking at translation into other languages. To help prevent family members from ordering food for themselves, the volume of food patients order has to be monitored and limited constantly. Transmitting physician dict-order changes results in delays in patient ordering, as food orders cannot be processed without physician confirmation.

RELEVANCE TO PRACTICE
The planning and implementation of a project of this nature is an administrative dietitian’s dream. As an administrative dietitian in charge of a project of this magnitude, your roles include, among others, chef, designer, graphic artist, contractor, menu planner, and computer programmer. The administrative dietitian must be creative in menu development and conceptual design concepts, and have the ability to see each phase of implementation through to completion.

The first step was assessing satisfaction with the meal delivery system and food. This feedback provided us with opportunities to improve the menu and process for meal selection and delivery. Your menu is your starting point, from which all other decisions are made. What types of food and equipment are required? Will staffing levels need to be changed to accommodate the new menu and service? What will the design of the kitchen look like? What is the overall budget for equipment and renovation? If such a system is implemented, what benefits will be achieved in terms of patient nutrition and satisfaction, as well as financially?

Conducting a pilot test of room service helped us answer some of these questions (10); consultation with other hospitals running room service gave us insight and benchmark data on which to base our own system. Once key concepts and budget dollars were finalized, and executive support and approval received, the focus moved to our patients and their families—the key stakeholders and participants in the project. Their opinions, in conjunction with those from other health care professionals involved in pediatric feeding, were used throughout the design and implementation process. The success of our implementation is directly related to the involvement of and the buy-in from these important stakeholders.

References