Home-style Dining Interventions in Nursing Homes: Implications for Practice

Creating Home in the Nursing Home II Symposium

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Acknowledgements:
I would like to thank Karin Heller, graduate research assistant at Mason, for her assistance in retrieving articles and developing the literature review table for this paper.

Context for Change

In the late nineties, spurred by several Federal reports to congress about the quality of care in nursing homes (GAO, 1998, OIG, 1999a, 1999b, 1999c), hearings conducted by the US Senate Special Committee on Aging to discuss findings from these reports, and a new presidential initiative to increase oversight and accountability of providers, dehydration and malnutrition among residents gained national attention. Quality of care in nursing homes across the country was improving due new regulations and closer state scrutiny of nursing homes which became effective in 1995 [Nursing Home Reform Act (PL 100-203), Omnibus Budget Reconciliation Act of 1987 (OBRA 87)], but areas of poor care and outcomes continued. Deficits in care resulting in inadequate nutrition and dehydration were prominent among these concerns. Between 1996 and 1997 trends in hydration and nutrition complaints to ombudsmen increased; hydration complaints increased 26 percent, and complaints about weight loss due to inadequate nutrition increased 24 percent (Office of the Inspector General, 1999). In 1998, the Clinton Administration launched the Nursing Home Initiative, an initiative designed to combat these and other concerns by implementing steps designed to improve enforcement of nursing home quality standards. In response, many nursing homes began to review their dietary and dining practices to identify more effective strategies to maintain and improve residents' nutritional status. More recent efforts by the Pioneer Network and other newer models of long-term care such as the Green House® project have promoted the adoption of person-directed strategies that make the nursing home more homelike (Rahman and Schnelle, 2008) to include changes in mealtime practices to make them more homelike. While, many U.S. nursing homes have made or are making

changes in their dining practices to improve nutritional intake and satisfaction with meal times, there is much room for improvement in nursing homes across the country (Doty, Koren & Sturla, 2008; National Center for Health Statistics personal communication, 2009).

Meal Service in U.S. Nursing Homes

National Survey Data

Most of the home-style dining intervention studies are from Europe and Canada, but we are beginning to see evidence that U.S. nursing homes are adopting some of the features of home-style dining. Data from the 2004 National Nursing Home Survey indicate that 89 percent of facilities across the country still used pre-plated tray-style food delivery services (food served on trays are prepared in kitchens and delivered to residents) (Table 3); whereas, 33 percent of facilities use a buffet-style service (food served from steam table in resident dining room or on the unit) (NCHS personal communication, 2010). Approximately 40 percent of nursing homes only use a tray style service; however, 2004 NNHS data indicate that there were too few nursing homes using only buffet-style dining services to make reliable national estimates.

Results from a 2007 National Survey of Nursing Homes by the Commonwealth Fund (Doty, Koren, and Sturla, 2008) are similar. The survey, designed to assess penetration of the culture change movement at the national level and to measure the extent to which nursing homes are adopting culture change principles, found that about three of 10 nursing homes (29%) in the U.S. indicate they have implemented initiatives to make dining less institutional, such as offering restaurant, family, and buffet style services and providing more dining times. Nearly half (46%) of culture change adopters

report they have changed how meals are served. In contrast, only 22 percent of traditional homes report they are making such changes. Traditional homes are those that self-reported that they did not meet the definition of culture change or resident-centered care approach.

Data from these two national surveys indicate that many nursing homes are creating changes in the meal service to make the dining experience more resident-centered and homelike, but many nursing homes across the country still rely on traditional tray-style meal service.

This paper will describe reasons for implementing home-style dining, discuss outcomes of home-style dining interventions, describe common features of home-style dining, discuss the author's experience with a home-style dining intervention, and discuss implementation challenges and recommendations for the future dining practices in long-term care settings.

Evidence Base for Nutritional Care

During the late 1980's and early 1990's new approaches to nutritional care (Elmstahl, 1987; Kolodny & Malek, 1991; Van Ort & Phillips, 1995; Abassi & Rudman, 1994; Lange-Alberts & Shott, 1994; Van Ort & Phillips, 1995; Cassens, Johnson, & Keelan, 1996; Stiles, Boosalis & Bowen, 1996; Gants, 1997) and other nutritional resources to guide the development of new interventions were emerging in the literature. These resources included new studies documenting the prevalence, associated factors, and consequences of poor intake, weight loss, and malnutrition (Siebens, Trype, Cook, Anshen, Hanauer & Oster, 1986; Silver, Morley, Strome, Jones & Vickers, 1988;

Rudman & Feller, 1989; Morley & Kraenzle, 1994; Blaum, Fries, & Fiatarone, 1995; Cederholm, Jagren & Hellstrom, 1995; Gilmore, Robinson, Posthauer & Raymond, 1995; Keller, 1995; Kayser-Jones, 1996; Kayser-Jones, 1997; Kayser-Jones & Schell, 1997; Amelia, 1999; Pierson, 1999); valid and reliable methods for identifying risk, assessing nutritional status, and determining the effectiveness interventions prevent and treat malnutrition (Morley & Silver, 1995; Guigoz Vellas, & Garry, 1996; Vellas, Guigoz, Garry, Nourhashemi, Bennahum, Laugue, & Albarede, 1999; Thomas, Ashmen, Morley, & Evans, 2000); a recommendation by the American Dietetic Association to liberalize diets of residents in long-term care and to treat illness and diseases medically rather than through dietary restrictions (Womack & Breeding, 1998); the Nursing Home Reform Act which promoted adoption of a more homelike environment, i.e., resident-centered care, recognizing and honoring residents rights, and providing for personal choice (OBRA 87); and the culture change movement championing more humane, consumer driven models of care that promote flexibility and self-determination (Pioneer Network, 2010).

Maintaining or improving nutritional status can be complex and challenging. Food intake is influenced by many intrinsic and extrinsic factors. Intrinsic factors include the resident's medical condition, functional status, medications and medical treatments, depression, oral status, food preferences and life-long habits. Extrinsic factors are those things that are modifiable (Abassi and Rudman, 1994) and include the mealtime environment, food quality and choices, availability of culturally appropriate food, availability and quality of mealtime feeding assistance, and meal and snack schedules.

Creating a more homelike mealtime environment and providing choice at mealtimes is consistent with the requirements of the Nursing Home Reform Act to de-

institutionalize facility practices and to provide care to help residents reach and maintain their highest practicable level of function as well as to, in fact, create a homelike. Home-style dining interventions address many of the extrinsic factors that can affect the desire to eat and the pleasure received from the mealtime experience. These interventions provide for choice and individualized care. Results from these studies on nutritional care in nursing homes provide a framework for developing and implementing dining strategies in long term care that can not only prevent dehydration and malnutrition, but also promote quality of life (Figure 1).

Improvements in the Dining Experience

Examples of positive outcomes related to changing mealtime practices began appearing in the literature as early as 1987 (Elmstahl, Blabolii, Kuller, Steen, 1987). In one study, providing a *home-like* environment, presenting food in serving dishes and allowing residents to select the type and amount of food they wanted to eat resulted in a 25 percent increase in protein and energy intake, as well as improvement in other nutritional markers. A 1994 study in a U.S. Veterans Administration facility, demonstrated that improving the dining environment, increasing menu choices and eliminating restrictive diets resulted in half of the residents (N=30) gaining 4.5 kg over an eight week intervention period (Abbassi and Rudman, 1994). Building on the work of these early studies, three other small studies, including one conducted by this author, demonstrated equivocal findings (Shatenstein and Ferland, 2000; Mathey, Vanneste, Graff, de Groot, Staveren, 2001; Remsburg, Luking, Baran, Radu, Pineda, Bennett, Tayback, 2001). Although results from all of the studies demonstrated increases in

dietary intake, weight and nutritional makers were improved in only one of these three studies.

Several more recent studies conducted in long-term care facilities outside of the U.S. offer stronger evidence and support for the effectiveness of improving the dining environment and making changes in food delivery practices on weight and nutritional outcomes (Ruigrok and Sheridan, 2006; Nijis, de Graaf, Kok, Staveren, 2006; Nijis, de Graff, Siebelink, Blauw, Vanneste, Kok, Staveren, 2006; Carrier, West and Ouellet, 2006; Desai, Winter, Young, Greenwood, 2007). Ruigrok and Sheridan (2006) demonstrated that residents participating in a *home style* dining intervention, who had previously required pureed ("minced") meals, did not require these meals during the study intervention. Nijis and colleagues (2006a, 2006b) in a comparison of a *family style* dining intervention to a *pre-plated* dining service, demonstrated differences in intake, nutritional risk (Mini nutritional Assessment scores), mid-arm circumference, quality of life (defined by measures of pain, perceived self care performance, depression or loneliness, freedom of movement, feeling at home in the institution), fine motor function (defined by measures of speed and assistance level in sitting to standing, doing or removing a sweater, walking or wheeling wheelchair for six meters, spooning apple sauce, washing their face, dialing the telephone), and weight. Among cognitively impaired residents, Carrier and colleagues (2006) found that *food tray meal* delivery systems, timing of menu selection, difficulty manipulating dishes, lids and food packages, and therapeutic diets were significantly associated with the risk of malnutrition. Finally, Desai and colleagues (2007) demonstrated that total daily and dinner meal energy intake among residents participating in a home-style dining

intervention was higher than intake in residents receiving pre-plated tray-style meals; and residents with a lower body mass index (BMI) and cognitive impairment benefitted the most from the intervention. A summary of these studies is presented in Table 1.

These studies provide evidence that home-style dining interventions that provide for resident choice and create a more pleasant dining room environment can maintain and improve nutritional outcomes and contribute to residents' quality of life. Using the Cochrane Review categories for strength of research based-evidence there is limited evidence to support that home-style dining positively affects staff views that home style dining is beneficial and is worth the effort; can maintain quality of life indicators; and increases resident satisfaction. There is moderate evidence to support home-style dining increases and maintains energy intake (macro nutrients); increases and helps to maintain weight; and does not change nutritional biomarkers.

Home-style Dining Interventions

Although the terms used in the literature to describe these dining interventions differ, the interventions demonstrate several common features, including and enhanced dining environment, a food delivery system that allowed for real time choice of food, and changes in quality of assistance provided to residents.

Terms Used to Describe Home-style Dining Interventions

Various terms are used to describe similar home-style dining interventions in the long-term care literature. These terms (identified in the text by italics) are found in Table 2.

For the purposes of this paper, interventions that provide a more homelike mealtime experience are called home-style interventions.

Common Features of Home-style Dining

Changes in the dining environment and practices are often described as more homelike and resemble the experiences residents had when they lived in their own homes. Features of home-style dining include the use of small tables that seat 4-8 residents; use of table cloths, table decorations, china and eating utensils that are not plastic or disposable; reducing background noise, cluster, and activities that distract from the dining experience (for example, turning TVs off and removing medication administration carts); and adding soothing or person appropriate background music. Dining rooms and dining activities are modified to better resemble life long mealtime and dining experiences. Residents eat in small groups and dining spaces rather than in large dining rooms where all residents eat together at the same time. Mealtimes are less focused on the task of eating, more leisurely, becoming social events, where dining activities and nutritional care for residents are no longer viewed as tasks to be completed.

Changes in food service are designed to improve the quality of the food (temperature, taste, and texture) and enable residents to make food choices at the time of the meal. Two types of food services have been studied, one that I will label *family-style*, which is providing food in serving bowls, enabling residents to serve themselves just like

they did in their own homes. The second type that I will label *buffet-style*, often described in the literature as decentralized bulk food portioning and cafeteria style, is the use of steam tables or chaffing dishes (bulk food containers that maintain proper food temperature), which are taken to the dining room where residents are served their meals. Both food service styles enable residents to make choices of the food they want to eat at the time of the meal, in other words, in real time. In addition to choice, the dining atmosphere is enhanced by the aroma of foods, which may help to stimulate appetite and increase pleasure with the mealtime experience.

Changes in mealtime assistance is the another common feature of home-style dining interventions. The importance of adequate and appropriate assistance cannot be understated and is the subject of one of the papers being presented in this symposium (Simmons and Bertrand, 2010). However, Desai and colleagues (2007), who controlled for the impact of complete assistance with eating by excluding these residents from their dining intervention study. These researchers demonstrated that seniors with low BMIs, who did not need eating assistance, increased their total daily and dinner time energy intake. Although these results support the positive effects of changing the dining environment and food service delivery method, studies of cognitively and physically impaired residents who need eating assistance provide strong evidence that home-style dining interventions, in the absence of proper eating assistance, are unlikely to produce desired nutritional outcomes. To address the need for assistance, some of the home-style dining interventions changed unit routines to free up nursing staff to participate in mealtime activities, some used “paid dining assistants,” and some maintained current staffing patterns. All interventions included staff training to improve the quality of

mealtime assistance provided. The focus of training is to ensure that staff members provide more effective and dignified assistance. Staff are encouraged to sit with residents, sometimes to dine with residents, to provide the appropriate level of assistance (for example, assisting with set up, cutting food, cuing residents to eat, providing assistive devices, and giving eating assistance to residents when appropriate), and to socialize with residents while providing assistance.

Buffet Dining: A Pilot Study

To address the many issues that affect food intake, we assembled a multi-disciplinary team comprised of nurses, physicians, registered dietitians, therapists, and researchers to design a comprehensive buffet-style dining meal service to address the modifiable factors identified in the literature that affect food intake (Remsburg, et al, 2001)(Figure 1). We used the following evidence-based strategies to achieve the desired outcomes for home-style dining described above include:

1. **Supervision (S)** by registered nurse (RN) staff;
2. **Assistance (A)** by specially trained certified nursing assistants;
3. **Food (F)** served on a buffet-style steam table that enable resident choice and second helpings; and an
4. **Enhanced dining room atmosphere (E)** (Remsburg, et al, 2001).

To implement the supervision, assistance, food service, and enhanced dining room atmosphere (SAFE) approach, we employed several registered nurses to train and supervise the certified nursing assistants (CNAs) who were hired to delivery the dining intervention. An RN was present during each meal to facilitate the delivery of the

intervention and to assist the CNAs. The CNAs, who worked at the facility where the intervention was conducted, were hired on their off shifts to provide mealtime assistance during evening meals. The CNAs received training on how to achieve the following features of the dining intervention, described by the acronym SHAPES:

1. **S** election & Choice;
2. **H** ome-like dining room;
3. **A** ssistive devices;
4. **P** ersonalized assistance;
5. **E** nhancement of food flavor & taste; and
6. **S** econd helpings.

To enhance the dining room atmosphere, we created a home-style dining room in the adult day care unit (a separately operated unit for non-resident seniors in the community). Three small dining tables were covered with seasonal table cloths and set with china, salt and pepper, and table decorations such as flowers; adaptive utensils and plates were used with some residents. Residents were positioned optimally for eating and socializing, and resident preferred music was played on the stereo. The home-style food service we used included serving food on a steam table in the dining room. Residents had at least two choices for all hot and cold food items (e.g., chicken and lasagna, fruit and gelatin salad). Many residents were able to view the steam table and make food selections. CNAs assisted in dining room set up and take down, helped residents in making food selections, served food and beverages, and provided eating assistance to residents who needed it. A registered nurse supervised and assisted with mealtime activities and provided guidance in using the features of the intervention. Post dining

conferences were conducted to review resident preferences, successful strategies for assisting residents, and to identify strategies to assist residents who did not consume at least 50 percent of their meals.

We used a crossover design, randomizing 20 residents to participate in the buffet dining intervention and 20 residents to continue unit-based tray-style meals for three months (intervention/control group comparison). At the completion of the first phase of the study, residents in the control group participated in three months of the buffet dining intervention (a pre-intervention/post-intervention comparison). Forty residents were enrolled with 39 completing phase I. Seventeen residents completed phase II. Both phases I and II yielded similar outcomes. After three months, we found no significant differences between the intervention and control groups in weight, hemoglobin, hematocrit, total cholesterol, prealbumin, and total lymphocyte count.

We also measured food satisfaction and depression. Although food satisfaction scores for phase I (satisfaction with taste, temperature, variety, and timing of meal) increased three points for the intervention group (assessed by four 3-point Likert-type items) and one point for the control group, the difference was not statistically significant ($p=0.06$). Results for phase II had similar results (unpublished data). While our observations of the participants, and numerous anecdotal reports from non-research staff members caring for our participants suggested that participation in the intervention improved residents' affect, our data did not result in changes in depression scores (assessed with Cornell Depression Scale).

Our major finding, which was important at the time and one of the major reasons we conducted the study, was **that ad lib eating i.e., selection of food by residents and**

caregivers resulted in improved resident satisfaction and did not result in any adverse outcomes. This was a major concern of facility administration given federal and state mandates to ensure nursing home residents were provided meals that met the recommended daily requirements (RDR) outlined by the Food and Nutrition Board of the National Research Council of the National Academy of Sciences. The overwhelming acceptance of the dining program by residents, family, and staff was the impetus for the facility to redesign dining services throughout the entire facility. These changes in dining services resulted in increases in resident satisfaction with food and dining services. Satisfaction increases ranged from 25 percent in the long-term care units to 52 percent in the rehabilitation unit. These ratings were the highest achieved since the facility began measuring satisfaction with food and dining services.

The major limitation to our study was that we were only able to implement the dining intervention for the supper meal. Food and dining improvements implemented during only one of three meals per day may not provide a strong enough dose of the intervention to increase intake or prevent decreases in intake. Residents may eat less at other meals and eat more at the supper meal resulting in no net gain in consumption. Nijis et al (2006b) demonstrated improvements in residents' nutritional outcomes in a home-style dining intervention that included all three meals, compared to residents who continued to receive a tray-style meal service.

In light of our findings regarding satisfaction and depression, we believe that other aspects of quality of life, i.e., perception of level of control, perception of self-care abilities, social support, and mood might be influenced by the buffet-style and other home-style dining interventions; therefore, future studies should include measures to

assess the impact on these aspects of quality of life. Nijis et al (2006a) demonstrated improvements in residents' overall quality of life such as pain, perceived performance on self care, depression and loneliness, freedom of movement, and feeling at home in the institution. Although improvements in nutritional status may be a desirous outcome, perceptions of quality of life may be equally as important, if not more important to residents and families.

Implementing Change

Home-style dining can eliminate many of the factors that have been identified, which adversely influence food intake and nutritional outcomes. Our experience and outcomes reported in the literature indicate that home-style dining, if implemented well, can provide choice and facilitate individualized care. However, addressing residents' nutritional needs through a home-style dining approach is complex. All disciplines and facility departments will need to be involved to successfully implement changes in dining practices and the mealtime environment. Sustaining a successful nutritional program also requires a commitment to conducting baseline and periodic assessment to determine risk, identify changes in nutritional status, address all of the potential factors that affect intake and nutrient absorption, and determine effectiveness of interventions (Thomas, et al., 2000; Crogan & Alvine, 2006). Other papers, including those presented during this symposium provide examples of the myriad of factors that need to be addressed, including mealtime assistance (Simmons, Keeler, Zhuo, Hickey, Sata, & Schnelle, 2008; Bertrand & Simmons, 2010), medications affecting appetite and absorption, drug/food

interactions (Hyde & Ogden, 2010), and diet orders and the use of restrictive and modified diets (Wayne & Leible, 2010).

Although, adopting home-style dining can facilitate a facility's ability to effectively address many of these factors, making the change can present major challenges. Facilities will face a multitude of challenges in implementing home-style dining.

Facility Challenges in Implementing Family-style Dining

Establishing a team, including members from all disciplines, and residents and families, who can provide valuable insights into food preferences and life-long dining experiences, to develop a plan that includes quality of life related to resident's nutritional goals, outcomes and preferences. The team needs to be willing to make changes in diet orders (liberalize orders) and give control to the residents and mealtime assisters to select food types and amounts.

Facilities will need to find ways to manage the costs of creating more home-style meal services. This can be done to a large part through reallocation of resources. For example, we re-educated and trained food service personnel who worked in the kitchen for new roles and responsibilities in serving food from the steam tables that were relocated in the unit dining rooms. Facilities need to think creatively as they work to establish new meal services that are more homelike.

Education and training for nursing staff to adopt a home-style philosophy are needed to ensure that everyone agrees that mealtimes are social events and can affect how residents feel about their home, their caregivers, and themselves. Dining room ambiance

and food service can enhance the quality of the mealtime experience; assistance can be provided in ways that protect and enhance resident dignity; **and quality of life may be equal or even more important than nutritional outcomes**. All staff involved in dining services needs to know and understand the food pyramid and basic principles of nutrition; strategies to improve nutrient and energy consumption such as increasing calorie and protein value of food by adding butter, gravy, and cream; how to enhance food taste by using seasonings; how to adjust serving portions so as not to overwhelm residents and how to offer second helpings; that it is acceptable for residents to sample of all available food and beverages; eating dessert first is a resident's prerogative; and above all the resident needs' have to well known in order to provide effective individualized care. Monitoring nutritional needs and intake is an important role for the RN staff and the facility dietitian. Finally, facility use of oral liquid supplements needs to be re-examined. The effectiveness of supplements is dependent on how they are administered. Supplements can suppress appetite and may be used instead as a time saving strategy in lieu of taking the time needed to assist residents to eat (Kayser-Jones, 1997; Remsburg, Sobel, Cohen, Koch & Radu, 2001; Simmons & Patel, 2006). Systematic review of supplement use and effectiveness is needed to ensure that supplements are effective in improving nutritional status, i.e., restoring weight loss.

Food service involves safe food preparation and handling (for example, hygiene and maintaining food temperatures). Food service staff and mealtime assisters need education and training in safe food preparation and handling. Home-style dining includes providing appropriate assistance, use of assistive devices and ensuring residents are properly positioned for dining and socialization. Small dining groups, consistent and

appropriate assistance, socialization, and getting to know residents' preferences enables caregivers to provide individualized care and detect subtle changes in food intake that may indicate changes in medical conditions or health or lead to weight loss. Because nutritional needs are dynamic, periodic and ongoing review of residents' responses and nutritional outcomes are needed. Enjoyment of the mealtime and socialization are as important as food intake. Education, training, monitoring, and positive reinforcement of staff assistive behaviors are need to ensure staff are providing optimal assistance. Staff needs "be in the moment;" it is not about the task of "feeding a resident," it is about the residents' dining experience, individuals who are enjoying the food and being in the company of people who care. Staff should sit and when possible eat with residents. Achieving these strategies at mealtimes will require re-education of CNAs, residents and families.

Facilities implementing home-style dining meal service need to establish and use a reliable system to monitor and evaluate outcomes. Residents should be screened at admission and periodically for nutritional risk. Obtaining accurate resident weights is essential. Staff needs to be trained and monitored to ensure procedures for obtaining accurate weights are observed (Simmons, Peterson &You, 2009). Residents who are at risk for malnutrition need to be monitored more closely. Without training and practice, CNAs are not good at estimating food consumption; the use of technology, such as digital photography can help (Pokrywka, Koffler, Remsburg, Bennett, Roth, Tayback, & Wright, 1997; Simmons, & Reuben, 2000). Digital photography can enable the facility dietitian to review CNA food consumption estimations for accuracy and can use inaccurate estimations to educate CNAs. Consumption records need to be reviewed regularly; and

outcomes related to the use of supplements need to be assessed periodically. Three day calorie counts by registered dietitians or trained staff can provide valuable information on nutrient intake and provide insight into ways to enhance taste, nutrient content, and provide residents with food they like and will eat. Nutritional markers such as pre-albumin, total cholesterol, total lymphocytes can provide information on risk and outcomes of interventions. Quality of life outcomes need to be included; measures of residents' perceptions of level of control, self-care abilities, social support, and mood; family and resident satisfaction with mealtime experience and food should be periodically assessed as well.

Finally, facilities should consider adoption or extension of person-directed care beyond the dining interventions described in this paper. Although home-style dining interventions described in this paper are recommended, newer models of person-directed care include creating unit-based kitchens, where residents and staff can participate in menu selection and food preparation. Strategies that allow for more choice and control are likely to improve satisfaction and nutritional outcomes. However, it is important to note that at some point in the health/illness trajectory, active nutritional care, i.e., implementing strategies to prevent weigh loss or promote weight gain, may not be appropriate. It is important for residents and families to be encouraged and assisted in developing advance directives that not only address CPR, hospitalization and comfort measures, but also address nutrition and hydration interventions. At some point palliative nutrition may be appropriate.

Future Considerations for Improving the Dining Experience

To facilitate the adoption of dining interventions and practices that will improve the mealtime experience for residents in U.S. nursing homes, recommendations for nursing education, regulations, and research are described below.

Education

Nurses and health care professionals need basic education in care of older adults, applied nutrition, application of professional responsibilities to prevent unsafe, illegal, and unethical practices, and advance care planning.

1. Health care professionals need basic education in core knowledge and practical experiences with older adults to be able to accommodate the health care needs of the aging population (IOM, 2008). Over the past 10 years the American Association of Colleges of Nursing, the John A. Hartford Foundation, the Atlantic Philanthropies, the National Gerontological Association and others have supported efforts by schools of nursing, medicine, and social work to incorporate care of older adults into basic curricula (http://www.aacn.nche.edu/Education/Hartford/index.htm; http://atlanticphilanthropies.org/ageing; http://www.jhartfound.org/; http://hartfordign.org/; https://www.ngna.org/). The 2008 IOM report, *Retooling for an Aging American: Building the Health Care Workforce*, clearly articulates the need for more health care providers to be trained in the basics of geriatric care and better skilled in caring for older adults. While much has been accomplished, these efforts need to continue so that all health care providers have basic competencies in care of older adults. One way to ensure this occurs is to include geriatric content on licensure and specialty certification examinations. If the National Council Licensure

Examination for Registered Nurses (NCLEX-RN), the national RN licensure exam included content on older adults, all nursing schools would be compelled to include content and clinical experiences with older adults. Although many nurses go onto develop expertise in various specialty areas, such as cardiology, neurology, or orthopedics, content on older adults on these specialty examinations for certification would also help to ensure that all nurses who care for older adults have basic competencies. Unfortunately, we are experiencing a national shortage in nursing faculty, as well as having too few faculty with expertise or certification in gerontology (Berman, Mezey, Kobayashi, Fulmer, Stanley, Thornlow & Rosenfeld, 2005; Latimer and Thornlow, 2006). Continued and increased funding for current programs that support faculty development in care of older adults such as the Health Resources and Services Administration's (HRSA) Comprehensive Geriatric Education Program and Geriatric Education Centers (GECs) are essential if we are going to have enough nursing faculty trained and certified in gerontology for the future.

2. Although most health care professionals receive education in nutrition, most nutrition courses are far removed from practical application. Moreover, nutrition is viewed as a component of health rather than a component of quality of life for older adults. It can be a formidable challenge to maintain a balance among all of the bio, psycho, and social aspects of nutrition to achieve the health benefits. For older adults, we may make decisions regarding nutrition that are motivated more by quality of life rather than improving health status. This negotiated risk approach strives to balance nutritional needs and quality of life outcomes. Health care professionals, especially

nurses need a course or coursework in clinical or applied nutrition. They need experience in determining nutritional risk, conducting comprehensive nutritional assessments, developing and executing nutritional interventions, and evaluating nutritional outcomes.

3. Nurses and health care professionals need opportunities to develop professionalism and professional values. Essential VIII: Professionalism and Professional Values from the *Essentials of Baccalaureate Education for Professional Nursing Practice* articulates the importance of the caring, professional nurse (AACN, 2008). Nurses, guided by the values of altruism, autonomy, human dignity, and social justice demonstrate ethical behavior in patient care. Essential VIII, Standard 12: *Act to prevent unsafe, illegal, and unethical practices*, means that we prepare nurses to act on evidence that patients are at risk. We teach nursing students to look for errors in medication and treatment orders or to look for adverse outcomes related to medication and treatments, but somehow this standard does not always translate into other aspects of care, such as acting on evidence that diet and nutrition care are inadequate or are not achieving desired outcomes. When we observe residents refusing their food or consuming minimal amounts of food, why are we not moved to action? When residents refuse medications or treatments more than a time or two, a call to the physician is a likely response. When the call to the physician is made regarding nutrition it is often after the resident demonstrates weight loss, which only compounds the nutritional problem. What we need is a proactive long-term care staff that detects alterations in intake early, determines intrinsic and extrinsic factors associated with intake, consults with the facility's registered dietitian (RD), consults

the resident and family and then calls the physician with recommendations for appropriate interventions to manage the nutritional status of the resident. This standard of care to *act to prevent unsafe, illegal, and unethical practices* needs to be translated to all aspects of practice including nutritional care.

4. Nurses and all health care professionals need education in advance care planning. Ten years ago the American Association of Colleges of Nursing and the City of Hope National Medical Center through a national education initiative, entitled the, "End of Life Nursing Education Consortium" (ELNEC) funded by the Robert Wood Johnson Foundation began as a consortium of many organizations to improve the quality of care provided by nurses at the end-of-life. This initiative has successfully trained many undergraduate and graduate nursing faculty in teaching end of life and palliative care to nursing students. Continued efforts are needed to ensure that all nurses are adequately prepared to care for the dying. Nursing homes need to implement standard policies and procedures to provide support to professionals, residents and families in planning for their health/illness trajectory. Nurses and the health care team needs to recognize when the goal of nutritional care is no longer one of prevention or restoration, but rather one of comfort and palliation. Professionals need to recognize when to begin and know how to actively provide palliative nutrition in order to provide quality care at the end of life. Continuing to provide active restorative nutritional care when it is clear that it will have limited if any effect on the well-being of the resident can create great distress for the resident, family and caregivers.

Regulations

Regulations that support home-style dining, incentivize the achievement of quality of life outcomes as well as nutritional outcomes in nursing homes, and support palliative and end of life nutritional care are needed.

1. Regulations upholding standards of food preparation, handling and storage are needed to protect residents' safety, but also must allow and encourage facilities to implement home-style dining. Regulations for food preparation, including the use of stoves, dishwashers and refrigerators should allow facilities to adopt these dining practices without incurring major expenses or additional reporting requirements. A large facility that wants to implement home-style dining should be able to create small dining rooms and unit/neighborhood/household-based kitchens that enable residents to participate in menu selection and food preparation. A recommendation that came out of the first National Symposium on Creating Home in the Nursing Home in 2008 was to allow innovation to the household kitchen fire hood requirements that prohibit facilities from creating unit-based kitchens. Regulations should protect residents from environmental safety issues and threats such as food borne illness, but also allow the benefits of person-directed and staff-assisted home-style dining interventions that promote individualized care.
2. We should implement policies and regulations that incentivize individualized approaches to dining and reward positive outcomes, both for nutritional and quality of life improvements. New pay for performance strategies could include resident quality of life outcomes that not only reward facilities for preventing adverse outcomes such as nosocomial infections, falls with injuries, or avoidable weight loss, but also reward

facilities for other equally important outcomes such as resident's satisfaction and autonomy during meals in addition to maintaining adequate intake and weight. Public reporting of quality indicators could include these measures and CMS could publish lists of top performing facilities. Facilities striving to achieve culture change and resident-directed dining could visit and learn from these high performing facilities.

3. When identified as an appropriate resident care goal, policies and regulations should support palliative nutrition. At some point in the care trajectory, improving and maintaining weight are no longer appropriate care goals. Residents should be offered and receive favorite foods designed to ameliorate dry mouth and provide comfort. CMS should establish quality indicators that reflect best practices in end of life care that include providing palliative nutrition. The establishment and updating of advance directives should be considered a quality indicator.

Research

Recent research supports home-style dining as a key strategy in improving nutritional care and individualized care in nursing homes, but there are still many unanswered questions about the impact of these dining strategies on nutritional status and other important resident outcomes.

1. Most of the research on home-style dining has been completed in nursing homes outside of the U.S.. Research on home-style dining interventions needs to be conducted in U.S. long-term care facilities to confirm intake, weight, and quality of life outcomes. We need more information on how the various components of home-

style dining interventions and newer dining strategies affect intake and outcomes, specifically among various subgroups such as residents who are experiencing different stages of dementia. Carrier and colleagues (2006) demonstrated that the timing of menu selection affected nutritional risk in residents with cognitive impairment. Selection of the menus closer to the meal resulted in increased risk of malnutrition. Investigators hypothesized that caregivers may not have known the residents well and may not have selected foods that cognitively impaired residents liked or enjoyed. In the study, point of service dining was associated with better nutritional outcomes; however, there were also nursing homes that used traditional menus selection which occurred less than 6 days and more than 6 days before the meal. One would hypothesize that the menu choice closer to the meal would result in better nutrition outcomes. In this study, for cognitively impaired residents, menu selection, by someone—perhaps the caregiving staff closer to the meal, was not associated with better nutritional outcomes. The researchers hypothesized, that for cognitively impaired residents, the timing of choice may not be as important as knowing the resident's preferences, i.e, what foods they always liked and enjoyed. This is what is often achieved with consistent assignment. On the other hand, our experience with buffet dining and the cognitively impaired demonstrates that point of service or home style dining facilitates substitutions. If a resident is served green beans and chicken, and they do not eat it or refuse it, the caregiving staff has the option of offering mashed potatoes and Salsbury steak. As dementia and cognitive impairment progresses food intake will vary and require new strategies to maintain adequate nutritional status.

2. Nursing homes need to use new and emerging technologies to support nutritional care. Electronic medical records and information management software and hardware are needed to provide clinical decision making support to nursing staff and nursing assistants, to provide access to the most up to date and accurate information about residents' preferences, lifelong patterns, medical conditions, and other relevant conditions, to assist staff in identifying real time risk for dehydration and malnutrition, and to provide support for monitoring interventions and outcomes. New hand held and voice activated devices will be valuable tools to help manage resident nutrition care.
3. We need to develop clinical algorithms and decision making tools to assist health professionals identify when prevention and restoration efforts are no longer appropriate. We need to assess the impact of palliative nutrition on residents and families perceptions of quality of life at the end of life. Understanding how facilities use advance directives and whether these documents are useful in helping residents and families experience high quality end of life care.

Conclusions

Evidence supporting the effectiveness of home-style dining interventions in long-term care is growing. The major components of these dining interventions include using food delivery systems and practices that allow for resident choice, creating a pleasant and leisurely dining atmosphere that promotes socialization, providing appropriate eating assistance, and professional oversight of mealtime activities to ensure fidelity to the

home-style dining approach. Home-style dining is consistent with the tenets of culture change and person-directed care and can enhance resident choice and autonomy.

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Table 1: Outcomes of Home-style Dining Interventions

Authors (year)	Design	Setting	Sample Size	Intervention	Measures	Outcomes
Shatenstein, B. & Ferland, G. (2000)	10 week pilot study with a pre-post design	Canadian nursing home	22 (70% cognitively impaired)	1. Decentralized bulk food portioning	1. Energy intakes (kcal) 2. Anthropometric indicators (weight, mid-arm circumference, triceps skinfold thickness, mid-upper arm muscle circumference) 3. Biochemical indicators (albumin, lymphocytes, sodium, potassium, transferring, vitamin B-12, folate, hemoglobin)	1. Significant increases in average daily energy intake, macronutritients (protein, carbohydrates, & fat) and vitamin A compared to the pre-introduction of centralized food service system. 2. All anthropometric indicators were stable during the 10 week period. 3. No changes in biochemical indicators except a decrease in albumin levels and increase in sodium, deemed clinically insignificant.
Mathey, M.A., Vincent, G.G., Vanneste, M.D., deGraff, C., deGroot, L. & van Staveren, W.A. (2001)	One year parallel group intervention study; four 15-bed units randomly assigned to the intervention (2 units) or control group (2 units) If you are comfortable, understand this old word was used in the study but very old, your call, thx	Dutch nursing home	22	1. Changes to the physical environment and atmosphere of the dining room 2. Food service 3. Organization of the nursing staff assistance 4. Program monitoring every trimester by nursing staff	1. Dietary intake (kJ, kcal; macro and micronutrients) 2. Biochemical indicators of nutritional and health status (RBC, MCV, MCH, MCHC, leukocyte, thrombocyte, hematocrit, hemoglobin) 3. Quality of life (Sickness Impact Profile—SIP and Dutch Philadelphia Geriatric Center Moral Scale—PGCMS) 4. Body weight	1. Dietary intake was insufficient at baseline for both intervention and control groups. 2. Mean daily energy intake increased in intervention group, but not in control group. 3. Health status biochemical indicators were stable in the experimental group; they decreased in the control group. 4. SIP scores remained stable in the experimental group (self-perceived autonomy); they declined significantly in the control group; PGCMS remained stable for both intervention and control groups. 5. Mean body weight significantly increased in the intervention group and remained stable in the control group
Remsburg, R.E., Luking, A., Baran, P., Radu, C., Pineda, D.,	Randomized intervention/control group comparison for	U.S. academic nursing home	20	1. Buffet-style food service (steam table with a variety of food selections)	1. Weight 2. Biochemical markers (hemoglobin, hematocrit, total	1. Group differences in weight and biochemical markers were not significant; no adverse outcomes occurred from implementing a new dining intervention.

Authors (year)	Design	Setting	Sample Size	Intervention	Measures	Outcomes
Bennett, R.G., Tayback, M. (2001)	three months			2. Enhanced dining room (table cloths, china, decorations, background music) 3. Mealtime assistance by trained staff 4. Supervision by licensed nurse	cholesterol, prealbumin, total lymphocyte counts) 3. Depression (Cornell Scale for Depression—CSD)	2. No changes in depression occurred in either the intervention or control group (unpublished data). 3. Resident satisfaction ratings after the dining intervention was rolled out to all long-term care units in the facility increased to highest levels since the facility began tracking ratings (unpublished data).
Carrier, N. West, G.E. & Ouellet, D. (2006)	Family and resident survey and medical chart review	38 nursing homes in Canada	263	None – study to determine which food service characteristics were related to a risk of malnutrition (food delivery system—tray or bulk-style, food preferences, meal cycle, menu, menu selection, therapeutic diets, difficulty with dishes, lids, and packages)	1. Risk of malnutrition (Laport, Villalon and Payette nutritional screening tool)	Food and menu characteristics significantly related to risk of malnutrition included: 1. Menus selected closer to mealtimes (< 6 days prior) 2. Texture-modified diets 3. Difficulty with dishes, lids and food packages 4. On a regular diet compared to a therapeutic diet 5. Use of tray delivery system Therapeutic diets had a negative effect on the probability of being at risk of malnutrition.
Nijs, K., De Graaf, C., Kok, F.J. & Van Staveren, Nijis, K.A.N.D., de Graff, C., Siebelink, E., Blauw, Y.H., Vanneste, V., Kok, F.J., van Staveren, W.A. (2006b). W.A. (2006a);	6 month randomized cluster trial	Five Dutch nursing homes	178	1. Family style dining (food served in dishes on the table, choice, vs. usual individual pre-plated service). 2. Enhance dining room ambiance (table cloth, china, utensils, table decorations, eliminate distractions) 3. Assistance (one assistant per table; assistant sits down and chats with residents)	1. Quality of life (Dutch Quality of Life Somatic Nursing Home Residents Questionnaire) measuring sensory function, e.g., pain; physical function, e.g., perceived performance of self-care; perceived safety, e.g., depression or loneliness; perceived autonomy, e.g., perceived freedom of movement, feeling at home in the institution 2. Physical performance (fine and gross motor) performance	1. Changes in quality of life between the groups were significant. The intervention group remained stable; the control group declined. 2. For physical functioning, the intervention group remained stable; the control group declined significantly. 3. Changes in weight between the groups were significant. For the intervention group, weight remained relatively stable; in the control group, it declined significantly. 4. Changes in energy intake between the groups were significant; in the intervention group, energy intake increased significantly; in the control group, it decreased significantly. 5. Mean MNA score increased significantly in the intervention group and decreased significantly in the control group. 6. Fat free mass, fat, mid-arm circumference, and calf circumference were not significantly different among the groups.

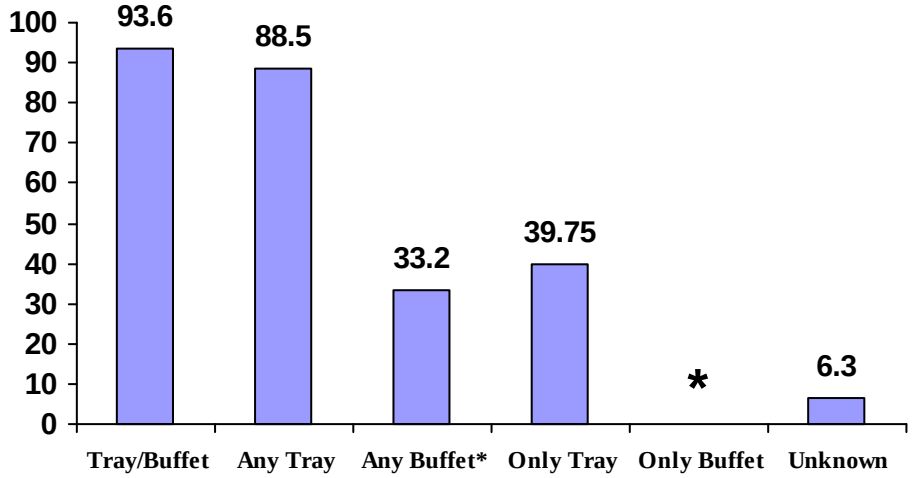
Authors (year)	Design	Setting	Sample Size	Intervention	Measures	Outcomes
					test) 3. Weight 4. Energy intake (kJ, kcal) 5. Macronutrients (protein, carbohydrates, fats) 6. Anthropometrics (mini nutritional assessment—MNA, mid-arm circumference, calf circumference, fat-free mass, fat mass)	
Ruigrok, J. & Sheridan, L. (2006)	Pilot program with 8 dining sessions with 2-4 residents (average 3 residents per meal) over a 3 month period	Irish nursing home	23	1. Created a home style dining room (table cloths, flowers, tableware, background music, and menus) 2. Pace was leisurely 3. Personal choice and independence in eating were supported 4. Schedule of dining activities was delivered	1. Number of residents needing pureed (minced) meals 2. Facility resident (before program) and staff surveys (after program) 3. Anecdotal observation of intake for residents "at risk"	1. Residents served minced meals before interventions did not need them during the home style meal. 2. "Attention" and social inclusion were especially valued by the residents 3. Staff gained a greater awareness of an individual's potential for independent dining. 4. "Sense of occasion" and variation from usual routine was a particular joy for residents. 5. About 80% of staff rated the intervention beneficial to residents and 94% that the effort was worth the commitment involved.
Wright, L., Hackson, M., & Frost, G. (2006)	6-week quasi-experimental study comparing intervention and control groups	United Kingdom (London)—patients on an acute medicine ward for the elderly	48	Lunchtime eating (mean = 4 times over 6 weeks) in a dining room (as compared to bedside dining of the control group)	1. Energy (kcal) intake 2. Weight	1. Dining group had significantly higher intakes of energy than the control group (36% higher). No difference in protein intake was found. 2. No significant difference in weight was found.
Desai, J., Winter, A., Young, K.W.H. & Greenwood, C.E. (2007)	21 day comparison of residents in two facilities, one older more institutional dining (4 dining	Two Canadian nursing homes *(All subjects had cognitive impairment)*	49 (all residents were able to eat independ-ently or required	1. Food service bulk/retherm/ waitress dining (individual responsible for serving food to residents and	1. Energy (kcal) intakes 2. Macronutrient intakes (protein, carbohydrates, fat) 3. Behavioral Function (London Psychogeriatric	1. Bulk delivery group had higher 24-hour and dinner energy intake compared to tray delivery group (due to higher carbohydrate intake). 2. Higher energy, carbohydrate and protein, but not fat intakes with bulk delivery occurred in individuals with lower Body Mass Indexes BMI) (significant interaction between food delivery and

Authors (year)	Design	Setting	Sample Size	Intervention	Measures	Outcomes
	rooms) and newer homelike appearance for dining (5 dining rooms)		only minimal assistance	improved plate presentation, temperature, choice, portion size adaptability) vs. tray delivery 2. Physical environment (institutional vs. homelike)	Rating Scale measures mental disorientation, physical disability, socially irritating behavior, disengagement)	BMI). 3. Higher disability in behavioral function was associated with lower dinner energy intake and also associated with lower BMIs.

Table 2: Terms Used to Describe Home-style Dining Interventions

Multi-disciplinary nutritional support team: improving the dining environment, increasing menu choices and eliminating restrictive diets	Abbassi and Rudman, 1994
Bulk food portioning: a decentralized food service system in which meal portioning occurs on resident's floors	Shatenstein and Ferland, 2000
Improved meal ambiance: trays and covers removed from tables, carriers out of sight; food served on dinner plate per course per table	Mathey, Vanneste, Graff, de Groot, and Staveren, 2001
Supervised dining room: trained nursing assistant supervised the dining room and offered encouragement and support to patients as required	Wright, Hickson & Frost
Buffet dining: food served from a steam table in the dining room by certified nursing assistants and an enhanced dining room environment	Remsburg, Luking, Baran, Radu, Pineda, Bennett & Tayback, 2001
Bulk portioning system: a decentralized food service system in which meal portioning occurs on resident's floors	Carrier, West & Ouellet, 2006
Family-style mealtimes: cooked meal served in dishes on table; optimizing ambiance	Nijis, de Graaf, kok, Staveren, 2006; Nijis, de Graff, Siebelink, Blauw, Vanneste, Kok, and Staveren, 2006
Home-style dining:: food served from a tabletop food warmer with clear glass lids placed on a conventional dining room sideboard and clearly visible to the residents in a dining room with more traditional ambiance and decoration	Ruigrok & Sheridan, 2006
Meals by bulk: cafeteria style with waitress service	Desai, Winter, Young, and Greenwood, 2007

Table 3: **2004 National Nursing Home Survey: Percentage of Facilities Using Tray and Buffet Style Meal Service**



***** The number of facilities reporting only buffet style meal service was too few to make a reliable national estimate.

Figure 1. Framework for Buffet-style Dining Intervention