Unintentional weight loss is a common problem in many U.S. nursing homes, with prevalence estimates ranging from 8% to 48% (Blaum, Fries, & Fiatarone, 1995; Centers for Medicare & Medicaid Services [CMS], n.d.; Sullivan, Johnson, Bopp, & Roberson, 2004). Weight loss is associated with adverse, costly clinical outcomes, including increases in hospitalizations, morbidity, and mortality (Abassi & Rudman, 1994; Blaum et al., 1995; Dwyer et al., 1987; Sullivan et al., 2004). A recent study involving 400 residents in 16 nursing homes compared care processes related to weight loss to the prevalence of weight loss within these homes. Results showed that homes with a higher prevalence of weight loss had a significantly larger proportion of residents with risk factors for weight loss, namely low food and fluid intake. In addition, staff in the low weight loss homes provided significantly better feeding assistance care.

ABSTRACT
The purpose of this study was to extend earlier research on the dining assistant (DA) federal regulation allowing trained non-nursing staff to provide feeding assistance care in nursing homes. Observations were conducted pre- and post-implementation, with periodic observations during implementation. To assess sustainability, data were analyzed at 12 months post-implementation. Results replicated previous findings: DAs spent more time assisting residents, and the quality of care was comparable to that of nurse aides. Results confirmed continuation of the program at 12 months post-implementation. DA programs that augment nursing home staffing levels offer a feasible way to improve feeding assistance care within the constraints of existing resources.
to a greater proportion of residents, including those most at risk for weight loss (Simmons et al., 2003).

Controlled intervention studies have demonstrated that improvements in feeding assistance care result in significant gains in food and fluid intake and body weight (e.g., Simmons et al., 2008; Simmons & Schnelle, 2004). However, these intervention studies have also shown that the amount of staff time required to provide feeding assistance that enhances residents’ oral intake and eating independence exceeds the staffing resources currently available in most nursing homes (Simmons et al., 2008; Simmons, Osterweil, & Schnelle, 2001; Simmons & Schnelle, 2004). A separate validation study in 21 nursing homes showed that total staffing level, particularly direct care (nurse aide) staffing, was a significant predictor of nursing home care quality for 13 of 16 daily care processes implemented by nurse aides, including feeding assistance (Schnelle et al., 2004).

In response to growing evidence that feeding assistance represents a critical daily care process to prevent unintentional weight loss and the lack of sufficient staff to provide this care in most U.S. nursing homes, CMS issued a federal regulation that allows nursing homes to train single-task workers or existing non-nursing staff as dining assistants (DAs) to augment direct care staff (Medicare and Medicaid Programs: Requirements for Paid Feeding Assistants in Long Term Care Facilities, 2003). Although it seems intuitive that the addition of extra staff during meal-times would improve the quality of resident care, various stakeholder groups raised concerns about the federal regulation.

INITIAL EVALUATION

The initial evaluation study (Simmons et al., 2007) was designed to gather empirical evidence in a sample of seven nursing homes in three states with active DA programs to address concerns about care quality and staffing levels in response to the federal regulation. Several key results emerged from this evaluation study. First, all individuals trained as DAs were non-nursing staff from other departments within each facility. Second, the quality of feeding assistance provided by staff trained as DAs was comparable to that provided by indigenous nurse aides according to five care processes measured by research staff observations. Third, no changes were found in existing staffing levels for nurse aides or licensed nurses following DA program implementation. Finally, the majority of staff at all levels reported positive benefits of the program for staff and residents (Simmons et al., 2007).

STUDY PURPOSE

The intent of this demonstration project was to replicate and extend the previous evaluation study through the implementation and evaluation of a new DA program in two nursing homes, each located in a separate state. One of the main outputs was the development of a reference manual that was developed for paid feeding assistants (Schnelle et al., 2008; Simmons, Osterweil, & Schnelle, 2001). In addition, the following research questions were addressed:

- Does the DA program result in improvements in feeding assistance care processes from baseline to 6 months post-implementation?
- What is the impact of the DA program according to interviews with nurse aides and DA staff?
- Is the DA program maintained at 12 months post-implementation?

METHOD

Participants and Setting

One nursing home was recruited in each of two states, Massachusetts (MA) and Tennessee (TN), on the basis of convenience sampling and geographical location of the research teams. Facilities met the following inclusion criteria: (a) a minimum of 100 beds; (b) formal agreement by the administrator, director of nursing (DON), and staff developer to train a minimum of 6 staff to provide feeding assistance during a minimum of one meal per week; and (c) formal agreement to designate at least one supervisory-level staff member to conduct structured observations during at least one meal per week to monitor program implementation.

Resident inclusion criteria required residents to be (a) long stay, (b) capable of oral food and fluid intake, and (c) not receiving hospice care. Residents who initially met these inclusion criteria but who experienced a change in clinical status (e.g., transferred to hospice, feeding tube insertion) or who were otherwise lost from the study (e.g., death, transfer out of the facility) during the 12 months of data collection were removed from all analyses. The Institutional Review Boards at each respective institution of the research team approved the study procedures.
Dining Assistant Recruitment and Training

Training was provided by the staff developer at each site with assistance from the research team, who provided access to published training manuals (e.g., Walker & Cole, 2008). Training activities followed the federal and respective state requirements and included the viewing of the CMS-sponsored webcast, “How to Enhance the Quality of Dining Assistance in Nursing Homes” (http://www.cms.internetstreaming.com, http://www.VanderbiltCQA.org). The training curricula in both sites required 8 hours of content (e.g., hygiene, feeding assistance techniques, resident safety) followed by a written and performance-based skills assessment. On completion of training, each trained staff member was scheduled to provide feeding assistance during at least one meal per week. A designated supervisor within each site was also trained to use the mealtime observation tool (described below) to conduct at least one observation per week during the initial 6 months of program implementation. Mealtime observations were conducted during meals in which DA staff were assigned to provide feeding assistance care.

Measures

Meal Observations. Research staff conducted observations during all three meals at baseline and meals targeted for program implementation at 6 and 12 months. Observations at 12 months were conducted to determine whether the program remained in place at that time, whereas baseline and 6-month observations were conducted for statistical comparison purposes. Research staff attempted to observe eligible residents for up to six meals (twice per meal) per person at baseline. Observations at 6 and 12 months were conducted only during meals targeted for program implementation (breakfast and lunch). In addition, research staff conducted observations when DAs were scheduled to provide feeding assistance at Weeks 2, 4, 6, 8, 12, 16, and 20 post-implementation. These additional observations were conducted to capture meal observations during which DA staff were present and to monitor ongoing program implementation.

Research staff also requested that a designated supervisory staff person within each site conduct weekly observations during meals when DAs were scheduled to provide feeding assistance throughout the initial 24 weeks of implementation. The purpose of these weekly supervisory observations was to establish a routine for ongoing program monitoring to increase the likelihood of program sustainability. Only observations conducted by trained research staff were used in the data analyses.

Research staff used a standardized observation protocol, developed and validated in previous studies, to measure feeding assistance care processes and residents’ oral food and fluid intake (e.g., Schnelle et al., 2004; Simmons, Babineau, Garcia, & Schnelle, 2002). The same protocol was used in a previous evaluation study to measure the quality of assistance provided by nurse aides and staff trained as DAs (Simmons et al., 2007). Prior studies have also shown that meal observations do not result in a Hawthorne effect; that is, staff do not provide better care when they are observed (Schnelle, Ouslander, & Simmons, 2006). Inter-rater reliability between research staff observers for all data elements used to

### TABLE 1

<table>
<thead>
<tr>
<th>Care Process Measure</th>
<th>Scoring Eligibility</th>
<th>Scoring Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF resident eats less than 50% of meal, THEN resident should receive more than 1 minute of staff assistance.</td>
<td>Resident meals wherein resident eats less than 50%</td>
<td>Staff should recognize when residents eat less than 50% of the served meal and provide assistance.</td>
</tr>
<tr>
<td>IF resident eats less than 50% of meal, THEN resident should be offered an alternative or meal substitute.</td>
<td>Resident meals wherein resident eats less than 50%</td>
<td>Residents who eat less than 50% of the served meal should be offered an alternative to improve intake.</td>
</tr>
<tr>
<td>IF resident receives a supplement, THEN resident should receive more than 5 minutes of staff assistance.</td>
<td>Resident meals wherein resident is given a nutrition supplement</td>
<td>Staff should not provide a supplement during meals without also providing assistance with intake of the meal.</td>
</tr>
<tr>
<td>IF resident is independent, THEN resident should not receive physical assistance to eat.</td>
<td>Residents meals wherein resident eats independently</td>
<td>Staff should not provide residents capable of eating independently physical assistance to eat.</td>
</tr>
<tr>
<td>IF resident receives physical assistance to eat, THEN resident should also receive verbal cueing.</td>
<td>Resident meals wherein resident receives physical assistance to eat</td>
<td>Staff should not provide physical assistance to eat without also providing verbal cueing.</td>
</tr>
<tr>
<td>All residents should receive social stimulation during meals.</td>
<td>All resident meals</td>
<td>Staff should provide social stimulation to all residents during meals due to benefits for intake and quality of life.</td>
</tr>
</tbody>
</table>

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score six feeding assistance care process measures (CPMs) derived from the observational protocol was established in the initial evaluation study (Simmons et al., 2007). Reliability ranged from good to excellent among five observers ($r = 0.535$ to 0.985).

Each CPM is scored as a pass or fail for each resident meal observation (e.g., the same resident might receive a pass score for breakfast but a fail score for lunch) to yield an overall percentage pass rate across all observations. The scoring rules and rationale have been described in previous studies (e.g., Simmons et al., 2007) and are briefly described in Table 1.

**Staff Interviews.** Research staff conducted structured interviews (Simmons et al., 2007) with staff involved in program implementation in each site, including administrators, DONs, staff developers, nurse aides, and staff trained as DAs. Upper-level staff interviews (administrator, DON, staff developer) required approximately 30 minutes per interview, whereas interviews with nurse aides and DA staff required less than 10 minutes per interview. Research staff used a standardized script to introduce the interview and inform staff of confidentiality. Interviews were conducted in person in a private area or according to the preference of the staff member. Interviews with upper-level staff were conducted at 6 and 12 months post-implementation. Interviews with nurse aides and DA staff were conducted only at 6 months post-implementation to reduce response burden. Each staff member trained as a DA was approached for interview, and all nurse aides on the same shift and unit as the assigned DAs were approached for interview.

**Data Analyses.** Chi-square analyses were conducted to compare the proportion of pass-fail rates for each of the six CPMs between (a) scheduled meals (breakfast, lunch, and dinner) at baseline; (b) meals targeted for program implementation (breakfast and lunch) at baseline and 6 months post-implementation; and (c) nurse aides and trained DAs at all time points post-implementation up to and including the 6-month mark (Study Weeks 2, 4, 6, 8, 12, 16, and 20 and 6 months post-implementation). Nurse aides and DAs were observed during the same mealtime periods, and all meal observations were aggregated across staff for analytical comparisons (i.e., all nurse aides versus all DAs). Independent-sample $t$ tests were used to compare total assistance time (minutes and seconds) between DA and nurse aide staff, using 95% confidence intervals. Only observations conducted by research staff were used in analyses.

**RESULTS**

**Participants and Setting**

Both study sites were for-profit, chain-affiliated nursing homes. Licensed nurse-to-resident ratios at baseline were comparable between the MA and TN sites, respectively for the day (1 licensed nurse to 18.50 and 17.20 residents), evening (27.75 and 24.57 residents), and night shifts (27.75 and 28.67 residents). Nurse aide-to-resident ratios were also comparable between the MA and TN sites, respectively for the day (1 nurse aide to 8.54 and 8.60 residents), evening (11.10 and 11.47 residents), and night (22.20 and 17.20 residents) shifts. The occupancy rates were 91% (MA) and 96% (TN) at baseline, and

### Table 2

<table>
<thead>
<tr>
<th>CPM</th>
<th>% Pass&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Breakfast (n = 195)</th>
<th>Lunch (n = 213)</th>
<th>Dinner (n = 160)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPM 1: Resident eats less than 50% of meal and receives more than 1 minute of assistance.</td>
<td>63 (43/68)</td>
<td>67 (62/92)</td>
<td>51 (35/69)</td>
<td></td>
</tr>
<tr>
<td>CPM 2: Resident eats less than 50% of meal and is offered an alternative or meal substitute.</td>
<td>2 (1/68)</td>
<td>8 (7/92)</td>
<td>0 (0/69)</td>
<td></td>
</tr>
<tr>
<td>CPM 3: Resident receives a supplement and more than 5 minutes of assistance.</td>
<td>49 (18/37)</td>
<td>45 (23/51)</td>
<td>26 (8/31)</td>
<td></td>
</tr>
<tr>
<td>CPM 4: Resident is independent and does not receive physical assistance to eat.</td>
<td>86 (130/152)</td>
<td>85 (150/176)</td>
<td>92 (126/137)</td>
<td></td>
</tr>
<tr>
<td>CPM 5: Resident receives physical assistance to eat and also receives verbal cueing.</td>
<td>88 (51/58)</td>
<td>100 (62/62)</td>
<td>97 (30/31)</td>
<td></td>
</tr>
<tr>
<td>CPM 6: Resident receives at least one episode of social stimulation.</td>
<td>53 (104/195)</td>
<td>45 (96/213)</td>
<td>36 (57/160)</td>
<td></td>
</tr>
</tbody>
</table>


<sup>b</sup> Numerators represent number of resident meals that received a pass score; denominators represent the total number of resident meals eligible for scoring.

<sup>***</sup> $X^2 = 11.12(1)$, $p < 0.001$ between breakfast and evening meal.
226 residents (75% of total resident population in both homes) met eligibility criteria. Fifteen DAs were recruited for training (MA = 6, TN = 9), and all trainees were non-nursing staff within the facility (housekeeping = 5, activities/recreation = 4, maintenance = 3, administration = 2, dietary = 1). Each DA was assigned to assist one to two residents during breakfast or lunch meals only, with most DA activity occurring during the lunch meal in both sites. Also, most DAs (n = 14) were assigned to weekday meals only. In one site, DAs helped during one meal per week; in the other site, they assisted during one to two meals per day.

### What is the Quality of Feeding Assistance Care Prior to DA Program Implementation?

Baseline meal observations were conducted across all three scheduled meals, regardless of resident dining location (dining room or resident rooms). Research staff completed a total of 568 resident meal observations (34% breakfast, 38% lunch, and 28% dinner) for the 226 eligible residents. Table 2 displays the pass rate percentages for each CPM by meal at baseline. Pass rate percentages were comparable between meals at baseline for all six CPMs, with the exception of CPM 6 (resident receives at least one episode of social stimulation), which had a significantly lower pass rate during the evening meal relative to breakfast (36% versus 53%, \( \chi^2 = 11.12, df = 1, p = 0.001 \)). The highest pass rates were observed across all three meals for CPMs 4 and 5, both of which are related to the provision of physical assistance to eat. Staff in both sites typically did not provide physical assistance to residents capable of eating independently (pass rate range = 85% to 92%), nor did they provide physical assistance without also providing at least one episode of verbal cueing (pass rate range = 88% to 100%). The lowest pass rates were observed across all three meals for CPMs 2 and 3. Residents were rarely offered an alternative meal, even when they ate less than half of the served meal (pass rate range = 0% to 8%), and many residents were given a supplement without receiving assistance to promote consumption of the served meal (pass rate range = 26% to 49%).

### Is the Amount and Quality of Care Provided by DAs Comparable to that Provided by Nurse Aides?

Of the 15 DAs who completed training, 10 remained active in the program at 6 months post-implementation. Reasons for program dropout for the remaining 5 trained DAs included: language barriers that precluded the provision of verbal cueing and social interaction (n = 2), interference with regular job duties (n = 2), and job resignation (n = 1). Research staff conducted observations of DA staff during a total of 87 meals and nurse aide staff during 357 meals of program implementation.

Table 3 presents the results of the CPM comparisons between DA and nurse aide staff. DA staff spent significantly more time providing feeding assistance (mean = 18.97 minutes, \( SD = 13.83 \) minutes...
per resident meal) for their assigned residents compared with nurse aide staff (mean = 6.60 minutes, SD = 9.13 minutes per resident meal; t = –7.92, df = 104.96, p = 0.000). Residents assigned to DA staff consumed less than half of the served meal during 20.7% (18 of 87) of observations, whereas residents assigned to nurse aide staff consumed less than half of the served meal during 46.8% (167 of 357) of observations (χ² = 19.59, df = 1, p < 0.000). Otherwise, pass rates for CPMs 1 and 2 were comparable between DA and nurse aide staff, with both types of staff typically providing more than 1 minute of assistance for residents with low oral intake (72% and 80% pass rates, respectively) but rarely offering alternatives to the served meal (11% and 5% pass rates, respectively).

Supplements were given to residents during meals for a comparable proportion of residents assisted by DA and nurse aide staff (14.9% versus 22.7%, respectively). However, DA staff provided more than 5 minutes of assistance during a significantly greater proportion of these meals relative to nurse aide staff (100% versus 46%, respectively, χ² = 13.28, df = 1, p < 0.001). Typically, DA staff were assigned to provide mealtime assistance to residents who required physical assistance to eat, as evidenced by a significantly smaller proportion of residents assigned to DA staff exhibiting independent eating behaviors (50.6% versus 72.3%; χ² = 15.13, df = 1, p < 0.000). For residents capable of eating independently, DA and nurse aide staff had comparable pass rates for not providing unnecessary physical assistance (64% versus 74%, respectively). DA and nurse aide staff also had comparable pass rates for the provision of verbal cueing when providing physical assistance (88% versus 83%, respectively). However, DAs provided at least one episode of social stimulation during a significantly greater proportion of meals compared with nurse aides (69% versus 56%, χ² = 5.24, df = 1, p < 0.05).

Does the DA Program Result in Improvements in Feeding Assistance Care Processes from Baseline to 6 Months Post-Implementation During Targeted Meals?

Meal observations were conducted at baseline and 6 months post-implementation with all eligible residents, regardless of who assisted the resident during the meal (nurse aide, DA, or no assistance provided) or dining location (dining room or resident’s room). Of the total number of meal observations at baseline (breakfast and lunch, N = 408), nurse aides provided assistance during 83% (n = 340), and residents did not receive any assistance during the remaining 17% (n = 68). Of the meals during which no assistance was provided, residents’ meal consumption was less than half during 34% (23 of 68) of the meals. During the 6-month observations (N = 539 total meal observations), nurse aides provided assistance during 76% (n = 410), DAs provided assistance during 2% (n = 10), and no assistance was provided during the remaining 22% (n = 119).

Table 4

<table>
<thead>
<tr>
<th>CPM</th>
<th>Baseline (n = 408)</th>
<th>6-Month Follow Up (n = 539)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPM 1: Resident eats less than 50% of meal and receives more than 1 minute of assistance.</td>
<td>66 (105/160)</td>
<td>69 (157/229)</td>
</tr>
<tr>
<td>CPM 2: Resident eats less than 50% of meal and is offered an alternative or meal substitute.</td>
<td>5 (8/160)</td>
<td>4 (8/229)</td>
</tr>
<tr>
<td>CPM 3: Resident receives a supplement and more than 5 minutes of assistance.</td>
<td>47 (41/88)</td>
<td>50 (60/120)</td>
</tr>
<tr>
<td>CPM 4: Resident is independent and does not receive physical assistance to eat.</td>
<td>85 (280/328)</td>
<td>80 (331/414)</td>
</tr>
<tr>
<td>CPM 5: Resident receives physical assistance to eat and also receives verbal cueing.**</td>
<td>94 (113/120)</td>
<td>82 (168/205)</td>
</tr>
<tr>
<td>CPM 6: Resident receives at least one episode of social stimulation.*</td>
<td>49 (200/408)</td>
<td>56 (301/539)</td>
</tr>
</tbody>
</table>


**Numerators represent number of resident meals that received a pass score; denominators represent the total number of resident meals eligible for scoring.

*χ² = 4.34(1), p < 0.05; **χ² = 9.65(1), p < 0.01.
meals during which no assistance was provided, residents’ meal consumption was less than half during 41% (49 of 119) of the meals.

Table 4 shows the pass rate percentages for each CPM at baseline and 6 months post-implementation for only the morning and afternoon meals targeted for program implementation. The intent of CPM comparisons between baseline and 6 months was to determine whether the DA program had an impact on the quality of feeding assistance for all residents during targeted mealtime periods, with the rationale being that the presence of DA staff during meals might allow nurse aide staff more time to provide better feeding assistance to their assigned residents. Because only 10 DA staff remained active in the program after 6 months (representing only 2% of the meal observations during which assistance was provided), fewer significant differences were noted in the CPMs from baseline to 6 months post-implementation on the basis of facility-wide observations during the breakfast and lunch meals (Table 4).

The pass rate percentages for all CPMs remained comparable between baseline and at 6 months, with the exception of CPM 5, which showed a significant decline (94% versus 82%, $\chi^2 = 9.65$, $df = 1$, $p < 0.01$), and CPM 6, which showed a significant increase (49% versus 56%, $\chi^2 = 4.34$, $df = 1$, $p < 0.05$). Weekly observations conducted by the designated supervisory staff person within each site showed that the programs remained active during the initial 6 months, with comparable adherence rates between the two sites for conducting weekly supervisor observations (MA = 20 of 24 weeks, 83%; TN = 21 of 24 weeks, 88%).

What is the Impact of the DA Program According to Nurse Aide and DA Staff Interviews?

Nurse aide staff on the day shift were interviewed by research staff using a standardized protocol, described above. Seventeen nurse aides completed an interview across the two sites, with no nurse aide overtly refusing the interview in either site. Most ($n = 16, 94\%$) of the nurse aides who completed an interview had worked as a nurse aide in the nursing home setting for at least 1 year at the time of the interview, and 77% ($n = 13$) reported that their resident assignment changed daily or weekly. Twenty-nine percent ($n = 5$) reported having received specialized training on feeding assistance beyond their nurse aide certification training. All of the nurse aides reported that, in addition to feeding assistance, they were responsible for the following tasks during mealtime: transporting residents to/from the dining room; meal tray delivery, set-up, and removal; oral intake documentation; and retrieval of alternatives to the served meal. In addition, all interviewed nurse aides reported being responsible for between-meal nutritional care (i.e., offering residents additional fluids, supplements, and snacks).

Most (94%) of the nurse aides who completed an interview responded yes to the question, “Do you think it is helpful to have DA staff present during meals?” Nurse aides specifically identified improvements in the timeliness of tray delivery (e.g., residents not having to wait as long for tray delivery, food being served at a more appropriate temperature), more time and better quality feeding assistance care, and other aspects of care quality (e.g., allowing nurse aides more time for other care tasks, such as answering call lights and providing incontinence care during mealtime). Most nurse aides (94%) responded no to the question, “Do you have any concerns about the use of trained DA staff for feeding assistance care delivery?”

Research staff also interviewed each DA who remained active in the program at the 6-month mark ($n = 10$). The majority (90%) had worked in the nursing home setting for at least 1 year at the time of the interview. Unlike nurse aides, the majority of DAs (90%) indicated that they usually helped the same resident(s) eat each day. Eighty percent of the DAs replied yes to the question, “Do you feel comfortable with your resident assignment?”, and 90% replied yes to the question, “Are you able to get help from licensed staff when you need it?”

DAs also reported that they assisted in other meal-related tasks, typically responsibilities held by nurse aides, including transporting residents to/from the dining room (40%); meal tray delivery, set-up, and removal (60%); oral intake documentation (40%); and retrieval of alternatives to the served meal (80%). In addition, 50% of DA staff reported they were responsible for offering residents additional foods and fluids between meals.

Is the DA Program Maintained at 12 Months Post-Implementation?

Research staff conducted facility-wide meal observations again at 12 months post-implementation, as well as structured interviews with upper-level staff (administrator, DON, staff developer) to determine whether the DA program remained active at each site. Both data sources confirmed the continuation of the DA program during only the breakfast and lunch meals at the 12-month follow up. By 12 months, 9 DA staff remained active across the two sites, according to meal observations and staff developer interviews. The administrator and staff developer at both sites reported they intended to recruit additional staff for DA training and extend the program to other meals (evening meal), between meals (hydration and/or snack program), and/or weekends. Both sites were considering strategies to recruit additional non-nursing staff from other departments within the facility (i.e., modifying shifts and hours to allow DA staff to be present during the evening meal) as well as potential community (volunteer) recruitment efforts.

DISCUSSION

The intent of this demonstration project was to extend a previous eval-
The quality of feeding assistance care provided by trained DAs was comparable to or better than the care provided by nurse aides.

The DA program was maintained at 12-month follow up, and upper-level staff at both sites reported they intended to recruit additional staff for DA training and extend the program to other meals, between meals, and/or weekends.

Findings regarding key facilitators and potential barriers to successful DA program implementation and sustainability were incorporated into a program implementation reference manual.

Dining assistant (DA) programs that augment nursing home staffing levels offer a promising approach to improve feeding assistance and nutritional care within the constraints of the existing staffing resources.

KEYPOINTS


1. Dining assistant (DA) programs that augment nursing home staffing levels offer a promising approach to improve feeding assistance and nutritional care within the constraints of the existing staffing resources.

2. The quality of feeding assistance care provided by trained DAs was comparable to or better than the care provided by nurse aides.

3. The DA program was maintained at 12-month follow up, and upper-level staff at both sites reported they intended to recruit additional staff for DA training and extend the program to other meals, between meals, and/or weekends.

4. Findings regarding key facilitators and potential barriers to successful DA program implementation and sustainability were incorporated into a program implementation reference manual.

The results of this study replicated previous findings that (a) staff trained as DAs spend more time assisting residents during meals, and (b) the quality of feeding assistance care provided by these trained non-nursing staff is comparable to, or better than, that provided by their nurse aide counterparts (Simmons et al., 2007). It is notable that both types of staff (DAs and nurse aides) rarely offered residents alternatives to the served meal, even when the residents’ oral intake was low. This is somewhat surprising because the majority of both groups of staff who completed an interview reported that they were responsible for the retrieval of alternatives if the resident did not like the served meal. Observations of the mealtime routine, however, suggest that this particular care process occurred infrequently because the kitchen was located some distance away from where residents dined, and staff did not take the extra time required to retrieve alternatives unless the resident explicitly requested something else. One potential solution to this problem is to have extra trays delivered to the floor or unit with available alternatives for easy access by staff. New interpretive guidelines issued by CMS regarding nutritional care include an explicit statement that nutritionally at-risk residents should be offered a choice among foods and fluids that are “palatable, attractive, [and] nutritious” both during and between meals (CMS, 2009, p. 57).

Related to between-meal nutritional care delivery, 50% of the DA staff reported they were also responsible for offering residents additional foods and fluids between meals, and interviews with upper-level staff at the end of the study revealed there were plans to further expand the DA program to between-meal time periods as well as the evening meal. The extension of the DA program to between-meal periods (through a snack or hydration program) will likely allow the program to have a larger impact on the nutritional status and quality of life of residents. Moreover, it offers additional opportunities throughout the day in which DA staff may assist residents, which also might allow more non-nursing staff from other departments to become involved in the program.

Studies have shown that most residents with poor oral intake during meals will increase their total daily caloric intake significantly if offered a variety of foods and fluids (i.e., snack options) between meals two to three times per day, and between-meal snack delivery also requires significantly less staff time than mealtime feeding assistance (Simmons et al., 2008; Simmons & Schnelle, 2004). Moreover, a recent study also showed that offering residents a variety of snack items between meals was a more cost-effective nutrition intervention than supplements alone due to the cost of snacks versus supplements, staff time for delivery, and resident acceptance as defined by both caloric intake and refusal rates (Simmons, Zhuo, & Keebler, 2010). Staff interview responses also replicated the results of the previous evaluation study (Simmons et al., 2007), in that the majority of indigenous staff at all levels reported positive benefits of the DA program for both staff and residents.
RECOMMENDATIONS AND PRACTICE IMPLICATIONS

The results of both the previous evaluation study (Simmons et al., 2007) and the current study reveal a number of ways in which DA programs could be expanded to allow broader program impact and benefit to more residents. Following are some suggested recommendations based on our research findings:

- Although they are outside the direct view of a licensed nurse, residents who dine in their rooms should not be excluded from the DA program; the regulation requires that a licensed nurse be accessible to trained staff during care provision, not physically present for oversight.
- Likewise, residents who require full physical assistance to eat also should not be excluded from DA programs unless these residents have otherwise complicated feeding care needs (e.g., high risk for choking, aspiration). Many of these residents eat slowly and thus require at least 20 to 30 minutes of assistance to eat.
- Residents who eat independently should not be excluded from the DA program. Many residents who eat independently still eat poorly and will consume significantly more with simple verbal cueing, social stimulation, and offers of alternatives to the served meal.
- Trained DAs should not be limited to helping only one or two residents during a meal. To extend the benefits of the program, they can simultaneously assist at least 3 to 4 residents who are seated together, or in close proximity, and require different levels of assistance (e.g., verbal cueing and encouragement, social interaction, offers of alternatives, physical help).
- The DA program should be extended to include the delivery of between-meal foods and fluids to residents who eat poorly during meals to increase their total daily caloric intake.

These and other recommendations for successful DA programs are more thoroughly discussed in a recent report based on a CMS-sponsored Pioneer Network symposium (Simmons & Bertrand, 2010).

LIMITATIONS

There are several limitations of this small demonstration project, one of which is that it was conducted in only two facilities through convenience sampling, and thus the findings may not be generalizable. However, the findings were consistent with a previous evaluation study that included a larger, nationwide sample of facilities with active DA programs (Simmons et al., 2007). A second limitation is that the number of DAs who participated in the program was small in both sites, which may partially explain why the program impact was limited to just those residents assigned to DA staff during targeted meals. Finally, due to the small sample, the study design did not include a randomized controlled comparison of nursing homes with and without DA programs, nor did the study include resident-specific measures or the long-term effects of improved nutritional care practices, such as the prevalence of unintentional weight loss.

CONCLUSION

Due to growing evidence that most U.S. nursing homes lack sufficient staff to provide many aspects of daily care, including feeding assistance, to all residents in need (Schnelle, Cretin, Saliba, & Simmons, 2000), the new federal regulation that allows DA programs to augment staffing levels offers a feasible and thus promising way to improve nutritional care within the constraints of existing staffing resources. The implementation manual that resulted from this demonstration project should assist gerontological nurses, staff developers, and other nursing home care providers to initiate and sustain an effective DA program (Abt Associates Inc., 2009).

REFERENCES


Services and The Pioneer Network’s Creating Home in the Nursing Home II Symposium, Baltimore.


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