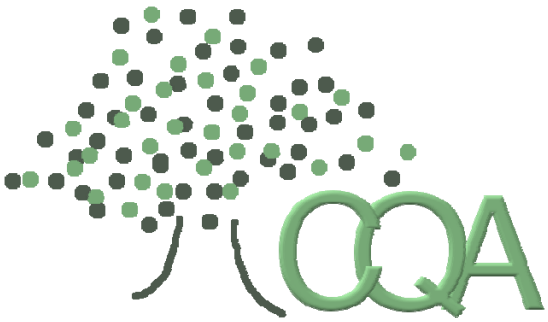

WEIGHT LOSS PREVENTION:

Training Module

Table of Contents

About This Training Module

This training module presents instructions and protocols for accomplishing each of the four steps required to implement an effective weight loss prevention program for nursing home residents.

It starts with a list of learning objectives. Following this, we briefly discuss reasons to improve nutritional care in your facility.

The next four sections describe intervention procedures for preventing weight loss among residents:

- Step 1: Assess Resident Risk for Weight Loss
- Step 2: Individualize Feeding Assistance
- Step 3: Implement New Staffing Strategies
- Step 4: Monitor Quality of Feeding Assistance

We've also included all the forms you need to implement the intervention, plus a quiz to test your new knowledge.

Elsewhere in the module – Links, FAQs, Related Studies - we provide guidance and referrals to other resources that can help you prevent weight loss among your residents.

CONTACT US

We've tried to be comprehensive, but if there is something you can't find, or if you have unanswered questions, comments, or concerns, please feel free to contact us at the Center for Quality Aging:

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Learning Objectives

At the end of this training module, you will be able to:

- Demonstrate knowledge of at least three problems common in the nursing home care setting that contribute to unintentional weight loss among residents.
- Describe and implement two methods for estimating mealtime food and fluid intake among nursing home residents.
- Assess a resident's risk for weight loss based on estimates of the individual's mealtime consumption and identify those who need further evaluation.
- Assess residents' food and fluid consumption between meals.
- Implement our prompted feeding assistance protocol at mealtimes with residents at risk of weight loss.
- Assess a resident's responsiveness to this mealtime feeding assistance protocol.
- Implement our between-meal snack protocol with residents at risk of weight loss.
- Assess a resident's responsiveness to this between-meal snack protocol.
- List at least four staffing and program management strategies that can make our mealtime and snack protocols more feasible to implement.
- Describe and implement a mealtime observational tool as a means of evaluating feeding assistance care quality for at-risk residents.

All procedures presented in this module are in accordance with the federal regulations that govern nursing home care and best practice guidelines pertaining to nutritional care in nursing homes.

Introduction

Learn how a feeding assistance intervention protocol can help nursing home staff to individualize mealtime assistance so that residents at risk for weight loss get the foods and fluids they need from a support program that is manageable for staff.

UNINTENTIONAL WEIGHT LOSS: A COMMON PROBLEM AMONG NURSING HOME RESIDENTS

For the past 10 years, Dr. Sandra F. Simmons, PhD has been devising and testing non-medical interventions to improve nutrition and prevent dehydration among nursing home residents, thereby helping to prevent unintentional weight loss among this vulnerable population. The impetus for this work derives from a substantial body of research that supports two conclusions:

1. Under-nutrition and dehydration are common problems among nursing home residents (1-5); and
2. These problems are associated with unintentional weight loss and can lead to a host of other problems for older adults including delayed wound healing and increases in the rates of hospitalizations and death (6-10).

The many causes of weight loss, under-nutrition, and dehydration in the frail elderly—depression, dementia, and reduced senses (taste, smell, hunger, thirst), to name a few—suggest many possible solutions to these problems. Recent evidence, however, suggests that the amount and quality of feeding assistance provided to residents during and/or between regularly-scheduled meals is possibly the most powerful determinant of their daily food and fluid intake (11-16). Thus, it makes sense to direct weight loss prevention efforts toward improving feeding assistance care quality.

RESEARCHERS TAKE A GOOD LOOK AT NUTRITIONAL CARE QUALITY

With this in mind we set out to first assess, and then improve, the quality of feeding assistance in nursing homes. Our approach has been somewhat unorthodox, and not only because it is based heavily on common sense. Throughout, we have employed quality control techniques that are more commonly used in factory assembly lines than in nursing homes. “Show me the food!” we demanded; the medical charts can wait.

Our researchers have spent hours in nursing home dining rooms, observing the staff, the residents, the meal tray service, and recording what’s done, what’s said, and what’s eaten. In addition to clip boards, paper and pencils, the tools of our trade include disposable or digital cameras, for shooting before and after photos of meal trays, to ensure reliable estimates of food consumption, and stopwatches, for timing every phase of the feeding assistance process, from transportation to the dining room and meal tray set-up to actual provision of feeding assistance and tray clearance. When you station yourself in the dining room, as we have, to directly observe mealtime routines, you see things that would otherwise escape notice if your only information source was resident charts.

"Nurse Aides consistently overestimate by 15% or more the amount of food and fluids consumed by residents"

Consider these findings:

- Nurse aides consistently overestimate residents' mealtime food and fluid consumption by as much as 15% to 20%, on average so many residents who are potentially at risk for weight loss, under-nutrition, and dehydration are not identified by staff when examining only a resident's "percent eaten" documented in their medical record (17-19). Other research groups have reported similar error rates in nursing home staff estimation of residents' oral intake during meals (20,21). Moreover, one of our studies showed that there was a systematic error rate in nurse aide estimation of residents' oral intake; that is, the *less* a resident ate, the more likely staff were to *over*estimate the resident's consumption (17).
- The majority of residents are at risk for under-nutrition and dehydration due to low food and fluid intake (17-19). These residents consistently eat less than 75% of their meals, one criterion used in federally mandated resident assessments, called Minimum Data Set or MDS assessments, to identify individuals potentially at risk for weight loss and under-nutrition due to low intake.
- Most facilities do not have enough direct care staff to adequately assist all residents who need assistance during mealtimes (13-15, 22); this finding is in accord with a recent report to Congress, which noted that nine out of 10 nursing homes in the United States have too few direct care staff to consistently provide daily feeding assistance care, and other daily care routines (e.g., toileting assistance, walking assistance, repositioning programs) to all residents in need (23).
- Due to understaffing, nurse aides "triage" residents at mealtimes, with the most functionally and cognitively impaired individuals, those who wouldn't eat a bite if someone didn't put it in their mouth, getting the most help (14,15,19).
- The others are physically capable of eating on their own, with little or no assistance from staff, which is, in fact, all the help they get (14,15,19).
- Of this latter group, many are at high risk for under-nutrition, dehydration, and weight loss because they do not eat enough on their own (14,15,19).
- These at-risk residents don't consume many calories between meals either, though the staff often believe they do. Staff usually are surprised by our findings based on direct observations, which show that residents consume, on average, fewer than 100 calories from additional foods and fluids (snacks) and oral liquid nutrition supplements between meals. However, also based on our own direct observations, staff do not consistently offer residents additional foods and fluids between meals nor do they provide appropriate assistance to encourage consumption—even when the resident has a physician or dietitian order to receive snacks or supplements (15,24,25).

MEALTIME INTERVENTION HELPS HALF OF AT-RISK RESIDENTS

Clearly these findings point to a serious problem with the adequacy and quality of feeding assistance in nursing homes. If you're now thinking, as we did, that the obvious solution is to assign more staff to help at mealtimes, then think again. We tried that in three nursing homes: Assigned our own highly trained staff to provide one-on-one feeding assistance over six consecutive meals to each of 74 residents who were consistently under-eating (14). Working within the context of a standardized protocol, we coaxed, cajoled, and conversed with each resident for about 40 minutes per meal, doing everything we could think of to get the person to eat more. About half did eat more, significantly more, increasing their intake by 30% on average.

The other half did not increase their consumption. For a sub-sample of these residents, we provided an additional two days of individualized feeding assistance—to no avail. Despite our best efforts, they still ate less than half of the food on their plates at meals.

BETWEEN-MEAL SNACK INTERVENTION HELPS THE OTHER HALF

Not satisfied with these results, we offered all residents who did not increase their food and fluid consumption in response to mealtime feeding assistance a tempting array of between-meal snacks three times a day (10am, 2pm, and 7pm) for two days. Again, we sat and visited with each person during the snack period, providing feeding assistance as needed. It worked, and although the residents ate and drank more at snack time, they didn't eat or drink less at mealtimes. On average, these residents consumed an additional 380 calories per day from snacks (15).

This finding suggests yet another reason why some nursing home residents do not eat or drink enough on a daily basis: They have a small appetite, which means they will eat and drink only a small amount at any one time. Thus, offering between-meal snacks three times a day doubles the number of opportunities that residents have to eat to six times per day, which leads them to increase their overall daily consumption. The results of a separate study showed that offering residents a choice among a variety of foods and fluids was more cost-effective in increasing residents' between meal caloric intake than offering residents oral liquid nutrition supplements alone – the most common nutrition intervention (26). Residents preferred alternative foods and fluids to supplements, and due to residents' preference for snacks, this approach required less staff time (26). Offering residents a choice of assorted fluids between meals also leads to increased fluid intake and a decrease in dehydration, an important outcome because residents who are not eating enough during meals generally are not drinking enough either (27).

ADVANTAGES OF THE COMBINED WEIGHT LOSS PREVENTION INTERVENTION

When paired together, our mealtime and snack interventions combine to create a single very powerful and, equally important, *feasible* weight loss prevention intervention. This dual intervention offers several advantages:

- Nearly 90% of residents with low intake will significantly increase their food and

- fluid consumption with either the mealtime or snack intervention protocols.
- Both the mealtime and snack interventions can be implemented with groups of three (during meals) or more residents (during snacks) and still effectively prompt residents to significantly increase their intake. This group model is a more practical alternative for most nursing homes, though it requires staff to transport residents to the dining room or another common area for group delivery.
- Nursing home staff need not provide intensive feeding assistance to all residents at mealtimes. Residents who are responsive to mealtime assistance can be identified in a two-day, or six-meal, assessment trial. Staff should concentrate their efforts on helping these residents during meals; that is, residents who are not eating well on their own *and* who will eat significantly more when staff spends time providing the appropriate level and amount of assistance. Residents who are not responsive to this approach become the focus of the snack intervention.
- The snack intervention fits in well with most organized social activities programs, as part of which snacks can be efficiently provided in larger groups (four or more residents). Many residents who are responsive to snacks require only verbal encouragement and social stimulation to increase their food and fluid intake. In our experience, social activities coordinators are willing, even eager to take on the extra responsibility of a snack program because the intervention adds a new dimension to their existing social programs, one the residents seem to appreciate (after all, who doesn't enjoy snacks at a social event?). This arrangement leaves nurse aides free to attend to other duties between mealtimes. Residents not appropriate for mealtime assistance (e.g., those with a strong preference to dine in their rooms for most meals or those who refuse to alter their dining room seating arrangement to allow for group delivery) also may be good candidates for the snack intervention.
- Our nutrition software program can be used to generate summary reports for individual residents related to their appropriateness for mealtime feeding assistance or the delivery of snacks between meals. These summary reports can be filed in residents' medical records to serve as documentation that an intervention has been put in place for that resident. In addition, a module within the software can be used to project staffing needs for daily feeding assistance care delivery. This allows facilities to determine exactly how many staff must be available to provide feeding assistance during each meal or snack period. If there is not enough staff available, then decisions must be made about which residents will receive assistance (e.g., those at highest risk for weight loss) or if other staff (e.g., social activities personnel, volunteers, non-nursing staff trained as "dining assistants") could help.

NOTE: If staff does not have access to the software or simply prefers to use paper-and-pencil forms, the forms referenced in the links within this and other sections of the module can be used to document a resident's feeding assistance care needs. Each of the protocols (mealtime assistance or between-meal snack delivery) should be attempted with the resident for a two-day trial (6 meals or 6 snacks) to determine if an individual resident is appropriate. For meals, if a resident increases their average total percent eaten by 15% or more (i.e., estimated gain of 300 additional daily calories based on a 2000 calorie/day diet) in response to mealtime assistance (compare average total percent eaten during prior week or previous 2 days to average total percent eaten during the 2-day trial), then s/he should continue to receive mealtime assistance. For snacks, if a resident accepts at least 2 of 3 snack offers per day and consumes roughly 100-150 calories per snack in response to a 2-day (6 snack) trial and their meal intake remains comparable (compare average total percent eaten during meals for the prior week or previous 2 days to average total percent eaten of meals during the 2-day snack trial), then s/he should continue to be offered snacks between meals at least twice daily and preferably three times daily.

"In sum, our weight loss prevention intervention enables nursing homes to individualize care so that residents get what they need without overwhelming the staff"

In sum, our weight loss prevention intervention enables nursing homes to individualize care so that residents get what they need without overwhelming the staff. It's a practical, efficient alternative to providing sub-optimal feeding assistance to all residents, which is the usual practice in nursing homes (14, 15, 19, 22, 23).

ABOUT THIS TRAINING MODULE

In the following sections, we present instructions and protocols for accomplishing each of the four steps required to implement the weight loss prevention intervention:

1. Assess resident risk for weight loss
2. Individualize feeding assistance
3. Implement new staffing strategies
4. Monitor quality of feeding assistance

These four steps are also included in the nutrition software program, which can be used to organize and interpret all of the assessment results.

We designed the intervention and the software so that both meet federal and best practice guidelines for nutritional care in nursing homes. Throughout, we offer suggestions for tailoring the intervention to suit the needs of your residents and staff. We also point out additional uses for the information you'll be collecting in order to maximize the utility of the intervention. Finally, recognizing that most nursing homes are understaffed at mealtimes, we identify trade-offs you can choose to provide the best care possible given your facility resources. There's one caveat, however: In order to achieve results comparable to ours, you must complete all four steps; if you skip one, expect to see different, possibly less desirable outcomes.

Two pre-requisites are recommended before you start:

1) Enlist top-level support from the administrator and management staff (Director-of-Nursing, Staff Developer, Dietary Manager, Registered Dietitian) to facilitate acceptance of the new program by direct care staff; and
2) Allow extra time at the beginning to climb the learning curve and conduct new assessments for many residents; following this initial start-up period, assessments only need to be completed on residents newly admitted to the facility or residents who have experienced a change in clinical condition (e.g., readmission from a hospital stay for acute illness; resident previously responsive to mealtime assistance who begins to lose weight).

Feel free to contact us at our website:

www.vanderbiltcqa.org

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Step 1: Assess Resident Risk for Weight Loss

Choose between two options that yield reliable, accurate estimates of residents' food and fluid intake at mealtimes. Our *Mealtime Observational Protocol* helps standardize consumption calculations.

MDS REQUIRES ASSESSMENT OF FOOD AND FLUID INTAKE

The first step in implementing our weight loss prevention intervention—assessing residents' food and fluid intake—will be familiar to most nursing home staff. What's new—and yes, improved—are our methods for accomplishing this assessment.

Nursing staff may recognize this step as one requirement of a comprehensive Minimum Data Set (MDS) assessment, the federally mandated resident assessment that nursing homes must complete for every new admission and then quarterly thereafter or whenever there is a significant change in a resident's condition. To be really specific about it, our intervention's first step corresponds to MDS item K4c. This is one of eight MDS items intended to help nursing home staff identify residents potentially at risk for under-nutrition and unintentional weight loss. It reads: "Resident leaves 25% or more of food uneaten at most meals," to which the nursing home staff is expected to check "Yes" or "No."

If yes, the resident is deemed potentially at risk for under-nutrition and weight loss. The problem in usual nursing home practice is that too often the staff check "No" when they should have checked "Yes."

STAFF OFTEN OVERESTIMATE INTAKE LEVELS

Our studies show that staff members consistently over-estimate residents' food and fluid intake by an average of 15% or more on both MDS assessments and on the daily estimates they document in residents' charts (1, 2). Consequently, they do not identify as many as half of the residents potentially at risk for under-nutrition and weight loss due to low intake (1).

There are many reasons for inaccurate estimates of intake including an overworked staff at mealtimes who often have too many, competing tasks to complete (e.g., meal tray delivery, feeding assistance care, oral intake estimates) for a large number of residents, vague instructions on how to assess food and fluid intake, complicated estimation rules (e.g., main entrée counts 50% of meal and side dishes each count 25%), and the lack of adequate oversight by supervisory-level staff to periodically check nurse aides' daily intake estimates for accuracy.

TWO METHODS YIELD ACCURATE ESTIMATES

Corrective action boils down to this: You need a reliable method for estimating residents' food and fluid intake at mealtimes so that you can accurately identify residents who are at risk for weight loss and under-nutrition due to low intake. We tested two assessment methods and found that both work equally well (1). Feel free to choose either option A or option B, taking into account facility resources.

OPTION A: SUPERVISOR'S ESTIMATE INTAKE

Assign to the dining room a supervisory staff person, ideally a licensed nurse or dietitian but an exemplary nurse aide also could serve in this role, to estimate food and fluid intake based on direct observations of residents' meal trays.

This need not be a daily assessment for all residents. Rather, it can be conducted as a part of a resident's periodic MDS assessment (about 10% to 15% of residents need MDS assessments each month) or as an initial assessment for all residents to identify those at risk for under-nutrition and weight loss. Specifically, due to inaccuracies in nurse aides' documentation of residents' daily oral intake, all residents within a facility should receive an oral intake assessment by a well-trained, supervisory-level staff member to determine low intake and possible need for feeding assistance.

The supervisor should:

- Use our *Mealtime Observational Protocol* to conduct assessments.
- Estimate the total percentage eaten during meals on two days (a total of six meals) within the same week for each resident. Ideally, these six meals should be comprised of two morning (breakfast), mid-day (lunch), and evening (dinner) meals to adequately represent the residents' typical intake across all three scheduled mealtimes.

Typically, supervisors can complete oral intake assessments for 6 to 8 residents during each mealtime period, assuming that the residents targeted for assessment are eating within the same area (all in the dining room or in their rooms on the same hallway).

Advantages:

The supervisor can collect additional information that may be useful in improving feeding assistance and, thus, preventing under-nutrition and weight loss. He or she can assess how nurse aides and feeding assistants provide mealtime help and recommend changes if improvement is needed. Common problems include:

- the need for assistive devices, such as large-handled utensils and plate guards
- meal trays being cleared too soon (less than 20 minutes following delivery)
- oral liquid nutrition supplements being given during meals as a *substitute* for feeding assistance (supplement is provided when the resident eats less than half of the served meal with little to no staff attention to promote consumption of the served meal)
- televisions or radios played so loudly that they interfere with feeding assistance provision; they distract staff and prevent residents from hearing staff verbal instructions and encouragement to eat more.

The supervisor also can determine whether a resident's intake is being affected by other mealtime occurrences, such as workers eating some of the food, residents' sharing food, or family members bringing in food. Additionally, mealtime observations give licensed nurses and dietitians the opportunity to identify residents with swallowing difficulties (e.g., coughing, drooling, spitting while eating) or symptoms of depression (e.g., crying, negative self-statements, refusal of food), both of which warrant referrals for further evaluation. Finally, the presence of a licensed nurse or dietitian supervisor in the dining room can help counter criticism the facility may receive if it chooses to employ single-task feeding

assistants to help residents at mealtimes (3-5).

OPTION B: PHOTOGRAPH MEAL TRAYS

Assign a staff person to photograph the resident's tray both before and after the meal during the assessment period, then compare the photos to estimate intake levels.

This need not be a daily assessment for all residents, but rather a periodic evaluation conducted as part of the larger MDS assessment for each resident (about 10% to 15% of residents need MDS assessments each month) or as an initial assessment for all residents to identify those at risk for under-nutrition and weight loss. Specifically, due to inaccuracies in nurse aides' documentation of residents' daily oral intake (1,2), all residents within a facility should receive an oral intake assessment by a supervisory-level staff to determine low intake and the possible need for feeding assistance.

The staff person should:

- Label each tray with the resident's name or other identifying information, the date, and the meal period before taking each photo.
- Take the before and after photographs during meals on two days (a total of six meals) within the same week. Ideally, these six meals should be comprised of two morning (breakfast), mid-day (lunch) and evening (dinner) meals to represent the resident's oral intake across all scheduled meals.
- Similar to direct observations during meals, one staff member can usually take before and after photos for approximately six to eight residents during any one mealtime period. If all staff work together, photos can be taken for a much larger group of residents by one staff member ("before" photos can be taken of a group of trays prior to leaving the kitchen and "after" photos can be taken as the trays are picked up at the end of the meal).
- Take each photograph from approximately the same angle and distance. We photographed meal trays at approximately a 45 degree angle from two feet away. Photographs should be taken such that the volume of foods and fluids remaining in containers on the tray are visible.
- Ensure that photos are developed or printed. Alternatively, photos taken with a digital camera can be downloaded to a computer that is available to multiple staff members, including licensed nurses and dietary personnel, for review and intake estimation.

When the photos are available for viewing, a supervisory staff person (or persons) should:

- Compare the before and after photos for each meal to estimate the resident's food and fluid intake.
- Use our *Mealtime Observational Protocol* to conduct these estimates.

Advantages:
The photography method provides a permanent record that can be rated by multiple professionals to ensure reliable estimates. It allows comparisons to be conducted in a less hurried manner and after hectic mealtimes. It also provides simultaneous, visual evidence of food volumes both before and after meals, so

"The Photography method provides a permanent record that can be rated by multiple professionals to ensure reliable estimates"

staff need not rely on their memories to estimate intake levels. Photos can also be used to inform the kitchen staff of individual resident's food and fluid preferences based on oral intake and as a training tool for nurse aides in conducting daily intake estimates.

REGARDING BOTH OPTIONS…

Can you assess residents who eat meals in their rooms using either option A or B?

Yes. The most practical way to do this is to assess at one time all residents on one hallway or in one unit who are eating in their rooms. Trays should be checked or photographed before the nurse aide enters the resident's room and again when the aide exits the room. We recommend that the staff person conducting the assessments—through either direct observations or photographs—stay in the hallway throughout the meal period. This allows the person to keep watch on all the rooms simultaneously.

A Time-Saving Tip:
This also works for both options: Concentrate first on assessing those residents who are *not* identified on MDS item K4c as having low intake levels or who consistently eat more than 75% of most meals according to nurse aide documentation in the medical chart. Percentages vary widely among nursing homes, but on average about half of all residents are identified as poor eaters on the MDS. In our experience, nursing home staff make few, if any, "false positive" assessments on this MDS item—or in the medical record. That means, if a resident is identified as under eating on the MDS or in his or her medical chart, then chances are very good that the assessment is accurate.

Double-Duty Assessments:
With either assessment option, the supervisor's estimates of food and fluid intake can be compared to estimates made by nurse aides and feeding assistants for the same residents and mealtimes to check the accuracy of these latter estimates. Any aides and assistants who consistently report inaccurate estimates can receive additional training in conducting intake calculations. If you took before and after photos of meal trays, these can be used as training tools.

GUIDELINES FOR ESTIMATING FOOD AND FLUID CONSUMPTION

To avoid errors and ensure the highest agreement between staff members, we recommend the following guidelines for calculating an estimate of total percentage consumed. Consider presenting these guidelines, during in-service trainings on feeding assistance.

- List each food and fluid item on the tray at the point of meal tray delivery and record resident consumption of each item at the point of meal tray pick-up using the bottom portion of the *Mealtime Observational Protocol.*
- Use a continuous percentage scale, from 0% to 100%, for estimation instead of percentage categories, such as 0%, 25%, 50%, 75%, 100%, which usually result in overestimates of intake.
- Each food and fluid item on the meal tray is counted equally as opposed to assigning differential values to different items (e.g., meat = 40%, salad = 20%), which results in error due to the complexity of the calculations.
- Ideally, consumption of fluids should be recorded in ounces, in addition to percent consumed, to allow for an accurate measure of hydration status. In our assessments, we did not count

optional fluids served independent of the meal tray, such as hot coffee or hot tea, in this estimate but some facilities do count these fluids and that is okay as long as all staff count the same fluids.

- Oral liquid nutrition supplements consumed *during* the meal should *not* count in the total percent consumed estimation, though the amount consumed (in ounces) of the supplement should be recorded separately to allow an estimate of total calories during meals by the licensed nurses and/or dietitian staff. Supplements are intended to be given *between* meals. However, we recognize that some residents prefer supplements as their fluid item with the served meal. Staff should ensure that appropriate meal substitutions (e.g., different entrée or sandwich choices with sides) are also offered as an alternative to the served meal.

RESIDENTS WITH LOW INTAKE NEED FURTHER EVALUATION

The purpose of estimating residents' food and fluid consumption—using either option A or B—is to identify individuals with low intake levels who, thus, may not be getting enough foods and fluids on a daily basis to meet their nutrition and hydration needs and prevent unintentional weight loss.

If a resident's average intake level for the six assessment meals is less than 75%, then that person should be further evaluated in a feeding assistance trial, as described in *Step 2*.

These at-risk residents should also be "triggered" for follow-up nutritional assessments conducted by a registered dietitian according to the MDS-Resident Assessment Protocol, or RAP. These additional assessments, including assessments of food complaints, depression, pain, and health status, are intended to guide individualized care plans and appropriate nutritional interventions. The assessments are not necessary to complete our feeding assistance intervention, but we strongly recommend them. In any case, nursing homes are required to conduct them in order to be in compliance with federal standards.

To help, we developed and tested standardized protocols for assessing *food complaints, chronic pain*, and *depression* as well as for abstracting pertinent *medical information from resident charts*. This information is helpful for creating individualized resident care plans in conjunction with the facility dietitian related to weight loss prevention.

Please note:
Our protocols require staff to interview residents in order to assess food complaints, chronic pain, and depression. Not all residents who need these assessments are capable of providing reliable, stable responses during interviews (though often, many more residents can provide meaningful responses than nursing home staff believe or expect).

Our research shows that residents who score two or more on the *MDS-derived Recall scale* are appropriate for interview about food service complaints and preferences for daily care (6,7). It should be noted, however, that many residents with a score of 1 can still provide reliable information about depression and pain.

ASSESS FOOD AND FLUID CONSUMPTION BETWEEN MEALS

Use our *Between-Meal Snack and Oral Supplement Consumption Assessment* to estimate at-risk residents' intake of additional foods and fluids, including supplements, between meals. Many administrators, nurse supervisors, and dietitians mistakenly assume that residents who eat poorly at mealtimes get the extra calories they need from between-meal snacks and oral liquid nutrition supplements. In fact, nurse aides rarely offer snacks or supplements to these residents (about once a day or less frequently) and when they do, they do not provide adequate feeding assistance or encouragement to promote consumption. The result is that residents consume, on average, less than 100 calories per day between meals. All of this is true even for high-risk residents with physician or dietitian orders to receive snacks or supplements between meals (8-10).

The raw data you collect with our *Between-Meal Snack and Oral Supplement Consumption Assessment*, which uses the same procedures as our mealtime assessment protocol, may help convince skeptical staff members that improvements are needed in the delivery of supplements, snacks, or any "hydration" program they believe exists (again, often erroneously) within the facility. Such improvements often entail:

- designating specific staff members to oversee delivery of snacks and supplements;
- monitoring by a supervisory-level staff member; and
- coordination with dietary staff to ensure that a variety of foods and fluids are available to residents between meals.

Time-Saving Tip:
Our nutrition software program can be used to organize the information that you collect related to residents' food and fluid intake during and between meals and can generate summary reports listing those residents who have low or inadequate intake.

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Step 2: Individualize Feeding Assistance

Learn how to identify the type of feeding assistance most likely to increase an individual resident's food and fluid intake. Use our *Mealtime Feeding Assistance Protocol* and our *Between Meal Snack Protocol* to guide this evaluation process.

FOR BEST RESULTS, INDIVIDUALIZE FEEDING ASSISTANCE

Findings from our most recent research suggest that it is possible to improve feeding assistance and increase food and fluid intake among residents without hiring more staff. The key to success is using existing staff more efficiently and creatively. To do that, however, nursing home staff must first determine which of two possible feeding assistance interventions works best for residents who typically under eat.

Over the years, we've worked in numerous nursing homes and not one of them, without considerable urging from us, has ever assessed nutritionally at-risk residents to determine whether in fact they would eat more if offered proper feeding assistance. Staff fore go these assessments largely because they believe they're unnecessary: There's a strong assumption bordering on faith that more and better feeding assistance will inevitably prompt poor eaters to consume more. This belief is at the heart of the Bush Administration's recent rule change allowing part-time "feeding assistants" to help residents during busy mealtimes. The idea is that more workers equals more feeding assistance, which in turn equals greater food and fluid intake among residents who would otherwise under eat.

The problem with this equation is that it doesn't add up to success for a lot of residents at risk for under-nutrition. Our studies show that not all residents respond equally well to mealtime feeding assistance; in fact, only about half of residents who typically under eat will increase their intake of food and fluids when offered high quality feeding assistance at mealtimes (1). Most "unresponsive" residents, however, will eat more when offered between-meal snacks (2).

These findings underscore the need to individualize feeding assistance in nursing homes; one size, it turns out, does not fit all. Failure to determine which intervention—mealtime or snack—works best for which resident can lead to costly staff inefficiencies and poor clinical outcomes for residents. Nurse aides waste time trying to feed residents who are unlikely to respond to their help. Meantime, these residents remain at risk for under-nutrition and weight loss because they don't get the assistance and snacks between meals that they really need.

TWO-PART INTERVENTION MAKES THE MOST OF STAFF

On the flip side, these findings point to new, more efficient and creative ways to deploy staff for maximum benefit. We discuss staffing options in more detail in *Step 3*. Here it's worth noting that our dual-component intervention frees nurse aides from having to provide intensive feeding assistance to all at-risk residents at

mealtimes. It also opens the door to appointing other staff members, most notably social activities personnel, to deliver snacks to at-risk residents between meals.

Before reassigning staff, however, you must assess residents' responsiveness to the mealtime intervention and, if necessary, the snack intervention. Only then are certain staffing structures ethically and clinically justifiable.

SIMPLE STRATEGY IDENTIFIES RESPONSIVE RESIDENTS

Is there, in fact, a reliable method for accurately identifying which residents will eat more if offered adequate help at mealtimes? Yes. It's an assessment method that we've used successfully in other care areas and one we found works equally well with feeding assistance. It's a simple method based on common sense: Offer at-risk residents ample feeding assistance for a few days and monitor their food and fluid intake. Those who eat more as a result of the intervention are "responsive" to it; those who don't are "unresponsive." In other words, the intervention either works, or it doesn't, and there's no reason to expect its effect to alter unless there is a significant, unrelated change—for better or worse—in the resident's condition. This same strategy also works to identify residents who respond well to the snack intervention.

A word of warning: Don't, as so many nursing home staff do, use a resident's cognitive status to assess responsiveness to this or most other daily care interventions (e.g., scheduled toileting assistance). Time and again, we have found that residents with severe cognitive impairment are nevertheless responsive to these behavioral interventions (1, 3, 4).

MEALTIME INTEVENTION PROTOCOL

A mealtime feeding assistance trial can be accomplished in two days (six meals), and any resident who eats less than 75% of most meals (see *Step 1: Resident Assessment*) should undergo this further assessment.

As a practical matter, the two-day feeding assistance trial should be conducted with groups of three residents. Our research shows that most residents who increase their intake in response to one-on-one feeding assistance maintain that increase when the help is provided in small groups of three (1). All residents should be medically stable at the time of assessment.

A nurse or nurse aide should provide continuous feeding assistance to the group for a total of six meals, preferably breakfast, lunch, and dinner, on two days within the same week. Be forewarned: This critical assessment step requires considerable staff time to complete. Plan on spending about 45 minutes per meal to assess a group of three residents and another 10-12 minutes per resident if a snack-intervention assessment is required. But take heart: These are one-time assessments for most residents. Finish them and your staff can move on.

Staff should follow procedures in our *Mealtime Feeding Assistance Protocol* to conduct the two-day trial. Briefly, the intervention protocol calls for the following:

- The staff person should casually converse or otherwise socially interact

"As a practical matter, the two-day feeding assistance trial should be conducted with groups of three residents"

with the residents throughout the meal.

- Residents should be properly positioned to eat – sitting upright.
- Residents should have their dentures, glasses, and hearing aides, if needed.
- Resident requests for substitute food and fluid items should be honored (and substitutes should be offered by staff if a resident doesn't seem to like the served meal). If a resident entirely consumes a particular food or beverage, offer a second helping, even if the food is a dessert. Most experts agree that the primary goal here is to increase caloric intake for residents at risk of weight loss. It is helpful to coordinate the availability of substitutions and second helpings with the kitchen staff such that these items (e.g., sandwiches, fruit plates, desserts) are available on the unit and do not require the staff member providing feeding assistance to leave the residents they are helping and make a trip to the kitchen.
- Residents should have access to their trays for up to 1 hour per meal (the average is about 45 minutes and the minimum is 30 minutes). Feeding assistance ends when the resident has refused all food and fluid items on his or her tray multiple times.
- An oral liquid nutrition supplement should be offered to residents at the *end* of the meal and *only* if they have refused all other food and fluid items on their tray as well as offers of substitutions, have consumed less than 75% of their meal, or have verbally requested a supplement.
- The nurse or nurse aide should follow our graduated prompting protocol to encourage residents to feed themselves. This standardized procedure instructs staff members to try simply tray set-up and verbal prompts to encourage residents to eat before offering physical guidance or assistance. This protocol also allows staff to determine each resident's true feeding assistance care needs and can be used as a standardized way to complete the MDS eating dependency item (Section G. Physical Functioning. Item 1h). The levels of assistance are as follows:

Graduated - Prompted Protocol: Levels of Assistance

1. social stimulation and encouragement
2. tray set-up (e.g., rearrangement of items on tray for easy accessibility; opening containers; offering to put sugar in tea, butter on bread, salt and pepper on foods, cutting up meat)
3. verbal cueing (e.g., "Why don't you try some of your soup?")
4. physical guidance (e.g., assist resident in holding cup or utensils, placing bite of food on fork for resident to then pick up and feed self and guiding resident's hand to the utensil to initiate self-feeding)
5. full physical assistance (staff member physically feeds resident)

NOTE: Each level of assistance is embedded within successive levels such that level 5 includes all previous levels. For example, staff should continue to provide social stimulation; orient the resident to the meal, food, and fluid items being served; and provide physical guidance, if at all possible, in the context of full physical assistance. In addition, some residents require full physical assistance for food items but remain capable of holding their own cup, with physical guidance.

Taken together, these intervention components enhance independence, support individual preferences, and characterize optimal feeding assistance quality, according to multiple experts (5-9).

Our *Mealtime Feeding Assistance Protocol* also instructs staff members to record the following:

- How much each resident ate during the meal (total percentage consumed)
- How long staff spent providing assistance during the meal
- The type of assistance the resident needed to encourage intake and enhance independence in eating

This information is used to determine the intervention's effectiveness and later, to organize staff efficiently (see *Step 3*).

DETERMINE RESIDENT RESPONSIVENESS TO THE MEALTIME INTERVENTION

To determine a resident's responsive to the mealtime intervention, simply compare the resident's average intake during the two-day trial to his or her average intake during the *Step 1 assessment*.

Residents are considered responsive if they show at least a 15% gain in average total consumption (1, 2).

If the resident's intake information under the two conditions (Step 1 assessment and the two-day trial of assistance) is entered into our nutrition software program, a report can be generated that summarizes the resident's responsiveness status. This report can be used as medical record documentation of a feeding assistance trial, which is consistent with federal care practice guidelines for nutrition.

All responsive residents should continue to receive the feeding assistance intervention at all mealtimes daily in small groups of three.

All others—an estimated 50% of residents with low intake—should be assessed for responsiveness to the snack intervention, presented below. At the staff's discretion, the mealtime feeding assistance intervention can be discontinued for these "non-responsive" residents.

REGARDING THE MEALTIME INTERVENTION….

Double-Duty Assessment:
Our mealtime intervention protocol can be used as an educational tool during in-service training sessions to teach nurse aides and other workers, such as supplementary "feeding assistants", how to provide high-quality feeding assistance.

Time-Saving Tips:

- Group together residents with similar assistance needs during meals in order to facilitate efficient delivery of feeding assistance and allocation of staff based on residents' needs (e.g., full physical assistance versus social stimulation and verbal cueing alone). Alternatively, you may want to include a combination of 1-2 residents who require full physical assistance to eat with 1-2 residents who require only social stimulation and verbal cueing. This way, the staff member can cue one resident while physically helping another.
- Residents who are bed-bound or who refuse to come to the dining room for meals (to allow group feeding assistance to occur) may be assessed for responsiveness to the snack intervention.
- If the facility houses a large proportion of residents who eat less than 75% of most meals, mealtime feeding assistance trials can be targeted toward residents at

particularly high risk for weight loss based on other criteria, such as: eats less than 50% of most meals, history of or recent weight loss episode, or Body Mass Index below 21. The MDS criterion "leaves 25% or more of food uneaten" will capture some residents who do not, in fact, need intervention especially if a facility serves a lot more than 2000 calories/day during regularly-scheduled meals.

SNACK INTERVENTION PROTOCOL

All residents who are not responsive to the mealtime intervention should receive a two-day trial of a between-meal snack intervention. Staff should follow procedures in our *Between Meal Snack Protocol* to conduct this assessment trial. This protocol is similar to that used for mealtime feeding assistance:

- Staff should offer snack foods and fluids to groups of four residents three times per day between meals (typically at 10am, 2pm and 7pm) for about 15-20 minutes per snack period, per group of residents.
- Staff should offer a variety of foods and fluids that the residents can choose from during each snack period. If possible, present snacks on a moveable, attractive cart so that residents can see their choices. Much like the dessert cart at a restaurant, the visual stimulation may stir the appetite. Recommended snacks include assorted juices (apple, cran-apple, cran-grape), yogurts (whole milk yogurts are more calorie-dense, creamier and tastier to the residents), ice cream, fresh fruit (bananas, apple slices), puddings, applesauce, soft cookies, pastries (mini muffins), cheese/peanut butter, and crackers. Oral supplements as well as snacks appropriate for diabetics and others on special diets should be provided as needed.
- Staff should follow our *graduated prompting* to encourage residents to feed themselves.
- The staff person should casually converse or otherwise socially interact with the resident throughout the snack period.
- Residents should be properly positioned to eat.

Throughout this two-day trial, staff must monitor participating residents' food and fluid intake at each meal (breakfast, lunch, and dinner) in order to determine if the calories gained from snacks result in lower intake of meals. Use our *Mealtime Observational Protocol* to conduct these assessments.

Similar to the mealtime protocol, the snack protocol instructs staff members to record the following:

- How much of each item the resident ate or drank during the snack period
- How long staff spent providing assistance during the snack period
- The type of assistance the resident needed to encourage intake and enhance independence in eating

DETERMINE RESIDENT RESPONSIVENESS TO THE SNACK INTERVENTION

Follow these procedures to determine a resident's responsiveness to the snack intervention:

- Calculate the resident's average daily total calories consumed during the two-day trial (count all meals plus snacks).
- Compare this total to the resident's average daily intake as determined in the *Step 1 assessment*.
- Residents are considered responsive if they show at least a 15% gain in average daily calories or an increase of 300 or more calories a day (2).

Another easy way to calculate responsiveness without a lot of math is as follows:

- Compare the resident's average total percent eaten during meals when snacks are being given to their average total percent eaten during meals as determined in the Step 1 assessment. If these two average values are comparable (less than 15% difference), then meal intake is essentially unchanged by snack delivery.
- The resident should accept at least 2 of the 3 daily snack offers. If their refusal rate is higher than once/day for snacks, they are likely not a good candidate for snacks (OR, the staff is not doing a good job of offering them choices during the evaluation).
- The resident should consume approximately 100 to 150 calories per snack offer (e.g., 4-6 oz of juice and 1 serving of yogurt). If the resident is accepted at least one fluid and one food item per snack offer, s/he is likely a good candidate for snacks.

Our nutrition software program can determine residents' responsiveness to the snack intervention if you enter each resident's food and fluid intake estimates for each condition: the Step 1 assessment and the two-day trial of snacks.

Responsive residents should continue to receive the snack intervention daily – ideally, three times per day but a minimum of twice per day. It is possible to examine which times of day residents within the facility seem most responsive to snack delivery. In our previous work, the morning and afternoon snacks resulted in higher caloric intake relative to the evening snack period.

Our research indicates that about 80% of the residents who receive the snack intervention will prove responsive to it (2). Moreover, our research also has shown that offering residents a choice of snack foods and fluids at least twice daily is a more cost-effective intervention than the use of oral liquid nutrition supplements in that snacks result in higher gains in caloric intake, lower refusal rates, and less staff time to promote consumption. In short, most residents prefer snacks to supplements (10). Finally, we also have demonstrated that the provision of optimal mealtime feeding assistance or snack delivery at least twice daily, five days per week (using the assessment protocols we describe in this module) results in significant improvements in residents' daily food and fluid intake and body weight status over time (11). In short, these interventions really do work to improve nutrition and hydration status and prevent unintentional weight loss among at-risk residents.

Once you have determined who is responsive to either the mealtime

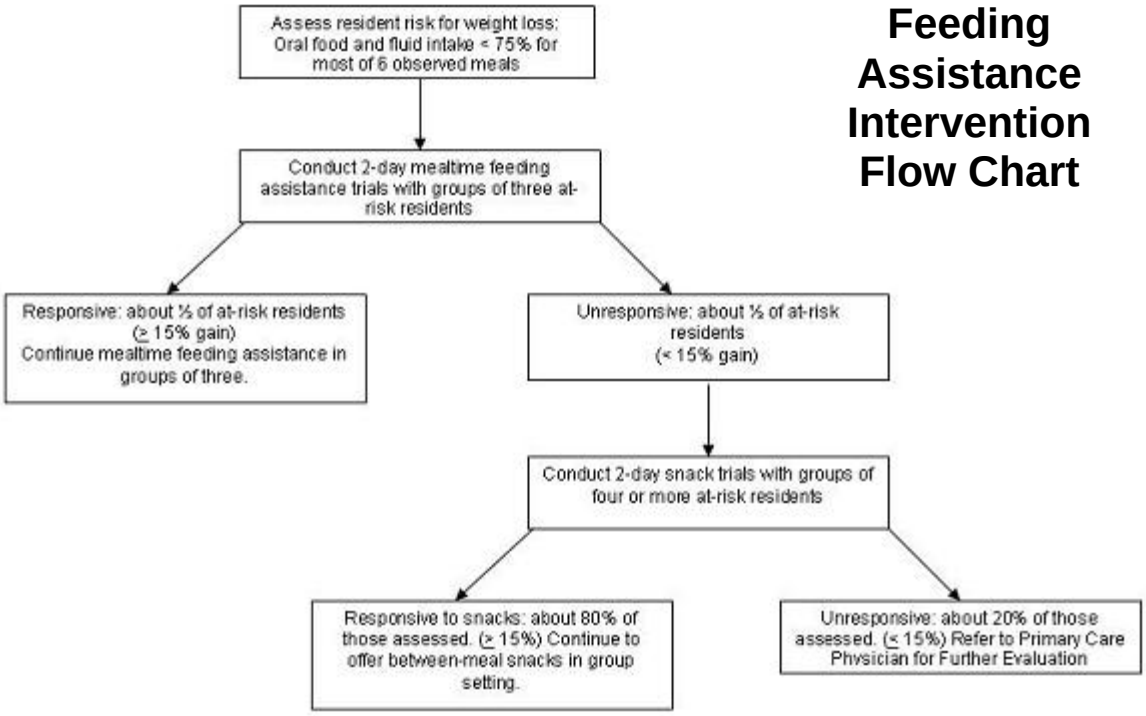
intervention or the snack intervention you can re-deploy staff to achieve the maximum benefit for residents in the most time-efficient manner *(move on to Step 3* or use our nutrition software to project staffing needs).

Residents who prove to be unresponsive to both interventions (anticipated 10% or so of those who meet the MDS criterion for "low intake") should receive a follow-up evaluation from their primary care physician and consultation with respective family members, if appropriate. For these residents, a two-day trial of mealtime feeding assistance and between-meal snacks provide the nursing home staff with important medical record documentation consistent with federal care practice guidelines related to nutrition that these interventions were attempted in an effort to prevent unintentional weight loss.

Double-Duty Assessments:
The two days of assessment for the mealtime and snack interventions are an opportune time to collect, with almost no extra effort, additional information required on the MDS and critical to improving nutritional care. For each resident assessed, consider recording this information:

- Symptoms of mood disturbance (e.g., repetitive health complaints, negative self-statements, crying or tearfulness)
- Behavioral problems that interfere with eating or the provision of feeding assistance (e.g., agitation, resident refusal of food or staff assistance)
- Need for assistive devices during meals (large-handled utensils, plate guards)
- Evidence of swallowing or chewing difficulties, including problems with dentures
- Food preferences and complaints

Use the information you collect to further individualize feeding assistance for at-risk residents.



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Step 3: Implement New Staffing Strategies

Analyze your options for reorganizing staff to efficiently deliver feeding assistance both during and between meals and maximize benefits for residents.

STAFFING CHALLENGES AWAIT NURSING HOMES AT MEALTIMES

Having assessed residents' risk for weight loss (*Step 1*) and determined who among the at-risk residents is best served by which intervention (mealtime or snack—*Step 2*), you are now in a position to make informed decisions about how to efficiently use what may be your facility's most valuable resource: staff time.

The staffing challenges facing nursing homes at mealtimes are daunting. Consider, for example, that experts recommend a ratio of five residents to one nurse aide during mealtimes to ensure proper feeding assistance, but the ratio in most nursing homes is 8 to 10 residents to one nurse aide during the morning (breakfast) and mid-day (lunch) meal periods and 12 to 15 residents per aide during evening meal (dinner) (1). A recent report to Congress noted that 9 out of 10 nursing homes did not have sufficient staff to adequately care for residents (2).

With such severely restricted staff resources, nursing homes must work smarter in order to wring the most out of what they have. The information you gathered in the *Step 1* and *2 assessments* empowers you to do that. In this next step, you translate the knowledge gained from the resident assessments into a staffing scheme that is as effective as it is cost-efficient.

START WITH WHAT YOU KNOW, THEN CONSIDER YOUR OPTIONS

Start with a recap of what you know at this point:

- the number of nutritionally at-risk residents (those who eat less than 75% of most meals, about 50% to 80% of all residents)
- The percentage of at-risk residents responsive to the mealtime intervention (about 50%)
- The percentage of at-risk residents responsive to the snack intervention (about 40% of those unresponsive to mealtime assistance)
- the amount of time it takes to provide feeding assistance during meals and snack periods

Our research shows that the amount of time needed to provide each intervention exceeds the usual amount of time nurse aides spend on providing feeding assistance (though the interventions result in significantly higher intake levels):
Our research also shows that it takes 1-10 minutes, or an average of 2.5 minutes per resident, to transport a resident to/from the dining room or other common area for meals or snacks, not counting the time needed to

	Usual Mealtime Care	Mealtime Intervention	Snack Intervention*
Time providing Assistance (in mins)	9/resident	42/group of 3 OR 14/resident	15-20/group of 4 residents
Mealtime Intake: Total % (food and fluid)	47%	60-70%	Remains comparable 300-400 calorie gain from snacks
*Usual snack-time care is negligible in most nursing homes. (Simmons, & Schnelle, 2003; Simmons, Osterweil & Schnelle, 2001)			

get the resident out of bed, dressed, and groomed, if necessary, prior to transport. Taking all this information into account leads us to the following recommendations for staffing. Keep in mind that not every recommendation will work well in every facility. You should decide which to implement based on your residents' needs and your facility's staff resources. Please note: We've started our list with the least restrictive recommendations. You should consider implementing these first.

USE OUR NUTRITION SOFTWARE PROGRAM

Our nutrition software program automates many of the tasks associated with our weight loss prevention intervention, thereby saving your staff time. It can be used to organize assessment information, generate summary reports of residents with low intake levels, calculate resident responsiveness to our mealtime and snack interventions, and project staffing needs for providing daily feeding assistance. It also allows staffing needs to be determined based on individual tasks (e.g., transport of residents to and from the dining room, tray delivery and pick up), which informs decisions about which types of staff—nurse aides vs. feeding assistants or volunteers—might help with each task. And oh, yes, did we mention that it's free?

ENCOURAGE ALL RESIDENTS TO EAT IN THE DINING ROOM

All residents should be encouraged to eat most, if not all, of their meals in the dining room for several reasons. First, most residents say they prefer to eat their meals in the dining room. The fact that many remain in their rooms for the morning and evening meals may reflect the routine established by the staff more so than the residents' preferences (3). Second, presence in the dining room allows the staff to provide time-efficient feeding assistance to small groups of residents, rather than one-on-one assistance, which is the only option if residents eat in their rooms. In fact, it has been shown that residents who eat their meals in the dining room receive more assistance from staff compared to those who eat in their rooms and these residents also have more accurate documentation of their percent eaten during meals (4). Finally, dining in a common room promotes social interaction among residents and staff, which in turn stimulates food and fluid intake, according to several studies (1, 5-9).

Recent research shows that facilities with a policy that all residents should eat all meals in the dining room have a lower prevalence of weight loss and significantly better performance on multiple measures of nutritional care quality, including the provision of feeding assistance. In these facilities, nurse aides on the 11pm to 7am shift typically begin helping residents out of bed and providing morning care in preparation for the breakfast meal.

Facilities with limited space in dining areas can schedule multiple servings per meal. Minimally, all residents who require mealtime feeding assistance should be taken to the dining room, or other common location, for meals.

USE OTHER STAFF MEMBERS AND VOLUNTEERS TO HELP AT MEAL- AND SNACK-TIMES

If your facility is short-staffed at mealtimes, consider using non-nursing staff for some tasks. Volunteers, social activities, dietary personnel, licensed nurses, even administrative personnel can help with a variety of time-consuming tasks, all of them

typically the responsibility of the nurse aide such as: transport of residents to/from the dining room, meal tray delivery and set-up, retrieval of substitutions from the kitchen of the resident does not like the served meal, provision of social stimulation and encouragement to residents, provision of between meal snacks to residents. The performance of these tasks by staff other than nurse aides greatly increases the time nurse aides have available to provide quality feeding assistance to residents in need.

Federal regulations now allow nursing homes to hire single task workers or cross-train, existing non-nursing staff as "feeding assistants" so that additional staff is available to help during busy mealtime periods. States do vary in whether or not facilities within each state are allowed to use these types of workers. If allowed within the state, our research shows that staff trained as "feeding assistants" provide equally, if not better, feeding assistance care to residents as indigenous nurse aides within the same facilities (10). Thus, training non-nursing staff from other departments or volunteers to help during meals offers a promising way to augment your existing staffing resources for feeding assistance care provision. We have developed an implementation manual that you can use if you are interested in training other types of staff to provide feeding assistance care within your facility.

Our research shows that residents who are responsive to our *mealtime intervention* are more likely to need physical assistance to eat and to have difficulty with chewing and swallowing (5). Consequently, certified nurse aides or non-nursing staff formally trained as "feeding assistants", with supervision by licensed nurses, should be assigned to provide mealtime feeding assistances to these residents.

By contrast, residents responsive to our *snack intervention* were more capable of eating on their own (5). Given this, the delivery of snacks between meals might be a more suitable assignment for social activities personnel or volunteers, provided they are informed of residents' diet orders. Again, staff trained as "feeding assistants" also could provide snacks between meals. Otherwise, the snack intervention fits in well with most morning and afternoon social activities programs. Moreover, in our experience, social activities coordinators are willing to take on the extra responsibility because the intervention adds a new, pleasurable dimension to their programs.

TARGET FIRST THOSE RESIDENTS RESPONSIVE TO THE MEALTIME INTERVENTION

As noted earlier, most nursing homes do not have enough workers to provide adequate feeding assistance to all residents at risk of under-nutrition. The usual result is that all residents receive sub-standard care, so no one gets what they really need. If a facility is short-staffed, wouldn't it be ethically and clinically preferable to concentrate first on providing proper feeding assistance to those residents most likely to increase their food and fluid consumption as a result? Our *Step 2 trial of mealtime feeding assistance* enables nursing homes to accurately and reliably identify these "responsive" residents. Residents who do not eat more even when offered extra help during mealtime, need not receive such intensive feeding assistance during mealtimes. They should, however, be offered social stimulation and alternatives to the served meal in addition to our between-meal *snack intervention*

BEEF-UP YOUR BETWEEN-MEAL SNACK PROGRAM FIRST

With this approach, staff would focus first on identifying nutritionally at-risk residents who are responsive to the *snack intervention*, and then evaluate the *mealtime intervention*. This contrasts with our prior studies, where we concentrated first on targeting the mealtime intervention. However, we noticed that most of the 50% of at-risk residents who proved responsive to the mealtime intervention also responded to the snack intervention, increasing their daily intake level by 15% or more without any additional mealtime assistance. We also noticed that some residents were at such high risk for weight loss that they needed both interventions (mealtime assistance and between meal snacks).

The advantage of increasing intake levels through a snack program is that this intervention requires less staff time to implement per resident (about 20 minutes per group of 4) than a mealtime intervention (about 45 minutes per group of 3). Additionally, this between-meal intervention helps distribute feeding assistance throughout the day, so more workers, including the social activities staff, can help out. Residents who increase their daily food and fluid intake to adequate levels with the snack intervention may not need extra, more costly feeding assistance at mealtimes.

Time-Saving Tip:
If you cannot provide residents with three snacks daily, focus on providing snacks in the morning and afternoon time periods in conjunction with social activities. Our research shows that most residents eat significantly more during morning and afternoon snack periods than evening periods.

USE MORE RESTRICTIVE CRITERIA TO TARGET RESIDENTS FOR FEEDING ASSISTANCE

As a last resort, if your facility is severely under-staffed, you can use more restrictive criteria to target the mealtime or snack interventions to only those residents at highest risk for weight loss. Such residents either eat less than 50% of most meals or have a history of weight loss or both. Check results from the *Step 1 assessment* to identify residents with intake levels under 50% and then check medical records to see which residents show a history of weight loss. Our research and that of other investigators suggests that residents with low intake levels (i.e., who eat less than 75% of most meals) but who have a healthy Body Mass Index value (>21) and no recent weight loss may not, in fact, need intervention. These findings, however, are preliminary, and this targeting approach, unfortunately, means that some residents will likely receive sub-optimal feeding assistance. Many of them, however, may at least maintain their weight, even if they don't gain pounds. Despite its serious drawbacks, this targeting approach is preferable, ethically and clinically, to providing sub-optimal assistance to all residents.

Cost-Saving Tip:
Because nursing homes offer few additional foods and fluids between meals, including nutrition supplements (5,6,11) it may cost facilities more to buy these items for the snack intervention. Our recent work shows, however, that the cost of the snack intervention might be off-set by offering snacks instead of supplements (12). Both residents and family members seem to prefer having a choice of snack foods and fluids instead of supplements (12,13). Moreover, residents consumed more calories from between-meal snacks than

from supplements and have a lower refusal rate of snacks (5,12). These findings suggest that snacks are more palatable to residents.

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Step 4: Monitor Quality of Feeding Assistance

Use our *Quality Improvement Observation forms* to periodically monitor feeding assistance during meals and snack-times to ensure provision of quality care.

MONITOR QUALITY TO PROTECT INVESTMENT IN NEW INTERVENTIONS

If your staff has accomplished Steps 1, 2, and 3, then your facility has made a significant investment in improving the quality of feeding assistance for residents. All that time will go to waste, however, unless you conduct regular checks to make sure staff continue to provide quality care. Most nursing homes skip this step only to pay a price for their negligence: studies show that in the absence of quality control assessment, nurse aides do not consistently provide or accurately document the delivery of feeding assistance either during or between meals.

Evidently, old habits are hard to break and new ones are hard to maintain if you don't get timely feedback about how you're doing, including reinforcement for doing things right and recommendations for improvement if you're having trouble. While frequent quality monitoring is absolutely essential at the start of a new program, the good news is that most facilities can get by with less in just a few weeks, once new care patterns are established.

MEALTIME QUALITY CONTROL MONITORING: PURPOSE AND PROCEDURES

The purpose of mealtime quality control monitoring is two-fold:

- To determine whether staff are providing *consistent* feeding assistance; that is, on all days of the week, for all meals; and
- To assess the quality of feeding assistance for targeted residents

The most reliable way to monitor nursing home care—feeding assistance as well as all other types of care—is to directly observe how the care is provided in daily care practice. This method contrasts with the usual assessment method of using data from medical records (e.g., nurse aide flow sheets) and the Minimum Data Set (MDS) to evaluate care. A common problem with both medical record and MDS documentation is that the information is often tainted with inaccuracies (1-2, 4-5); in other words, you can't trust it. Moreover, it is almost always in the direction of over-estimating care quality; that is, medical record and MDS documentation both tend to reflect better care practices and better resident outcomes than the reality based on other information sources, such as observation, independent assessments, and resident interview (1-2, 4-5). Thus, it is imperative to assess feeding assistance care quality based on an information source other than the medical record and the best source is direct observation of care delivery. Specifically, a supervisory-level staff person should be assigned to conduct quality control observations during mealtimes. Before you balk at this seemingly expensive requirement, read on:

- Supervisors need focus their attention only on the estimated 50% of residents with low food and fluid intake who also were "responsive" to the mealtime intervention; that is, they increased their oral intake by 15% or more when provided with optimal feeding assistance (see *Step 2*); these are the residents who should continue to receive feeding assistance during meals.
- One supervisor can reliably observe feeding assistance for five to ten residents at a time, provided all the residents are in the dining room or in their rooms but within the same hallway.
- To start, each resident who needs feeding assistance should be observed during at least three meals per week, alternating days of the week and meals; if nurse aides provide proper feeding assistance consistently for four weeks across all scheduled mealtime periods, quality control assessments can be reduced to as few as only one meal per week but continue to alternate days of the week and meal periods from week to week.

We estimate that in a typical 100-bed nursing home, one supervisor will initially spend 5 hours per week conducting mealtime quality control observations for the estimated 25 residents with low intake who are responsive to the mealtime intervention. Once the feeding assistance protocol takes hold, the supervisor's assessment time should drop to about 2.5 hours per week or less. It is easy to see why it would be beneficial to train more than one supervisor to conduct mealtime observations. Several supervisors could share the responsibility of conducting observations to alleviate the burden on any one individual and compensate for an individual's occasional absence due to illness or vacation. You may want to consider including supervisory-level staff from other departments who have their own unique investment in the quality of the mealtime process (e.g., dietary, registered dietitian, assistant to the Director-of-Nursing, speech therapists, Administrator).

Double-Duty Assessments:
Mealtime monitoring not only ensures quality feeding assistance for targeted residents, but the presence of supervisory-level staff in the dining room during meals also communicates to those supervised that feeding assistance is an important care routine that is valued by management. Quality control observations should support and reinforce educational in-service training sessions related to nutritional care and weight loss prevention (3).

FOR BEST RESULTS, USE OUR OBSERVATION PROTOCOL

The supervisor should conduct periodic checks during both week and weekend days, if possible, and across all mealtimes—breakfast, lunch, and dinner. If this is not feasible due to work hours and schedule of the designated supervisor(s), focus on the days and meals that it is possible to do (typically week days, breakfast and/or lunch meals) and consider identifying another supervisory-level person to be responsible for other days/meals. Ideally, the supervisor should observe the entire meal, from tray delivery to tray pick-up, and use our *Quality Improvement Observation Form: Meals* to record pertinent information. Briefly, the observational form prompts supervisors to collect the following information:

- Total number of residents eating in the dining room
- Names of the residents targeted for observation
- Type of feeding assistance provided to each observed resident (as a practical

matter, supervisors can record this information only for residents who eat in the dining room, not for those who eat in their rooms)
- The total percentage eaten by each resident as estimated by the supervisor and then as estimated by the nurse aide in the medical record for the same resident-meal
- The amount of time the nurse aide spent providing assistance to each resident
- Whether a resident consumed an oral liquid nutrition supplement during the meal

Time-Saving Tip:
If a staff member is unable to observe the entire mealtime period (from start to finish), observations may be strategically conducted at key time points (e.g., beginning, middle, and end) during the meal to capture the same information. An alternative strategy is to observe during only the first half-hour of the meal as this is the time period during which most feeding assistance care is provided, if any is provided at all.

The information generated by this observational protocol can be summarized as feeding assistance care quality indicator (QI) scores. The advantage of using QI scores is that they highlight clinically significant quality-of-care problems in need of improvement. Additionally, they can be scored as either "passing" or "failing," for an individual resident and mealtime period which is useful for making comparisons within a facility over time and identifying specific aspects of care that may require more staff education and training. You can use the scores, for example, to compare the quality of feeding assistance over different meal periods or across different staff shifts. These mealtime QI scores can be calculated by hand following the directions at the bottom of the *form*. Alternatively, QI information can be entered into the nutrition software and reports can be generated that summarize the QI scores by date, day of the week, meal period, even staff member.

EVALUATE MEALTIME CARE WITH THESE SIX QUALITY INDICATORS

We present below the rules and rationale that guide the scoring of six QIs related to feeding assistance, all of them based on our previous work (4-6). The scoring rule for each QI reflects a liberal approach that maximizes the opportunity for staff to "pass."

Proportion of residents eating in the dining room

Score: No rule for this one; however...

Rationale: *All* residents should be encouraged to eat *all*, or at least most, of their meals in the dining room for several reasons. First, most residents report a preference to eat their meals in the dining room, if given a choice. Second, presence in the dining room allows the staff to provide time-efficient feeding assistance to small groups of residents. Third, dining in a common area promotes social interaction among residents and staff, which in turn stimulates food and fluid intake. Finally, residents who eat in the dining room also receive more attention from staff, better feeding assistance care and more accurate documentation of their oral intake during meals. (See Step 3: Implementing Staffing Strategies for more information about the importance of dining location).

Service/Training Goal: Ideally, all residents, excluding those who are bed-bound, tube-fed, or on hospice or palliative care, should eat all of their meals in the dining room. This includes breakfast and dinner, which are often served in residents' rooms.

Supervisors should work with staff to identify ways to increase the number of residents who eat in the dining room, including using non-traditional staff to help transport residents and offering two seatings per meal period, if dining space is limited.

Staff ability to provide assistance to at-risk residents

Scoring Rule: Score as "fail" residents who eat less than 50% of their food *and* receive less then five minutes of staff assistance during the meal.

Rationale: All residents with low intake who are responsive to the mealtime intervention should receive feeding assistance for 30 to 45 minutes in small groups of three from one staff member. Thus, if *any* observed resident receives less than five minutes of assistance, feeding assistance is not being provided according to the protocol. Inadequate feeding assistance is particularly detrimental to residents who consistently eat less than 50% of each meal and thus are at especially high risk for weight loss and under-nutrition.

Service/Training Goal: All nurse aides should provide adequate feeding assistance to all nutritionally at-risk residents (see *Step 2*).

Staff ability to accurately document clinically significant low food and fluid intake among residents

Scoring Rule: Score as "fail" residents who eat less than 50% of their meal based on the supervisor's observations, but who are reported by nurse aides to have consumed more than 60%.

Rationale: While residents who consistently eat less than 75% of most meals meet the MDS criterion for low intake, recent evidence suggests that those who consistently eat less than 50% are at a significantly higher risk for weight loss. Thus, if staff document that a resident consumed more than 60% of a meal when, in fact, the resident ate less than 50%, they are likely failing to identify a clinically significant intake problem for that resident.

Service/Training Goal: All nurse aides should be trained to use the same guidelines to calculate residents' food and fluid intake (see *Step 1*). Note: before and after photographs of residents' meal trays serve as a helpful training tool for teaching staff how to conduct intake estimates.

Staff ability to provide verbal instruction to residents who receive physical assistance at mealtimes

Scoring Rule: Score as "fail" any resident who receives physical assistance from staff during the meal without also receiving at least one verbal prompt directed toward eating (e.g., "Why don't you try your soup?"). As a practical matter, this QI can be scored only for residents who eat meals in the dining room due to the difficulty in observing directly multiple nurse aide-resident interactions when the resident is eating in their room.

Rationale: Studies show that verbal prompting encourages residents to eat independently and to eat more. There is growing consensus that verbal prompting alone or, if physical assistance is needed, verbal prompting that precedes and is coupled with physical assistance defines optimal feeding assistance. Moreover, recent research indicates that nursing home staff often provides excessive physical assistance to residents who could otherwise eat independently with just verbal prompting

or encouragement. Even if a resident requires full physical assistance to eat, staff should minimally provide verbal notification ("let's try a bite of soup next, okay?"; "I'm going to give you a bite of soup next.").

Service/Training Goal: Ideally, all residents who receive physical assistance should also receive verbal instruction or notification from staff. Failure to provide verbal instruction or notification may reflect a language barrier or a need for staff education. Nurse aides, for example, may inappropriately assume that it is a waste of time to provide verbal instruction to residents with cognitive impairment or residents who are unable to verbally communicate.

Staff ability to provide social stimulation to all residents during meals.

Score: Score as "fail" any resident who does not receive at least one episode of social stimulation from staff during the meal.

Rationale: Studies show that social stimulation improves food and fluid intake; thus, staff should socially interact with all residents throughout the meal. Social interaction differs from verbal instruction in that it consists of simple statements that are *not* specifically directed toward eating, for example, greeting a resident by name: "Hello, Mrs. Smith, it's good to see you today." As a practical matter, this QI can be scored only for residents who eat meals in the dining room.

Service/Training Goal: Ideally, all residents should receive at least one episode of social stimulation from staff during meals. Social interaction not only enhances residents' oral food and fluid intake, but it also enhances their quality of life.

Staff ability to accurately document feeding assistance.

Score: Compare how nurse aides describe the provision of feeding assistance in residents' charts with the supervisor's recorded observations.

Rationale: This QI enables supervisors to evaluate the accuracy of medical record documentation of feeding assistance and identify strategies to prevent documentation errors.

Service/Training Goal: A discrepancy between how nurse aides and supervisors document both the type and duration of feeding assistance may point to the need for a standardized form for charting care delivery that is more specific than a simple checklist or documentation that feeding assistance was provided "as needed," neither of which are informative from a quality improvement perspective. Staff may also want to document reasons for *not* providing assistance (e.g., resident refused the meal or assistance).

MONITOR FEEDING ASSISTANCE DURING SNACK TIMES

It is just as important for supervisors to monitor the quality of feeding assistance during snack periods as it is during mealtimes, especially when you consider that an estimated half of nutritionally at-risk residents need between-meal snacks to increase their daily caloric intake. Unfortunately, in many nursing homes, staff do not consistently provide snacks and beverages to residents between meals (7), and documentation of residents' food and fluid intake between meals is typically absent or inaccurate. Quality control monitoring can identify such problems and point the way to feasible solutions.

Here are tips for conducting snack-time quality control observations:

- Focus your observations first on residents with low intake who showed a significant gain in daily calories in response to our snack intervention (see *Step 2*). Staff should offer these residents snacks and beverages between meals at least twice a day (morning and afternoon) and, preferably, three times a day (morning, afternoon, and evening).
- To start, monitor each resident during two or more snack periods per week, being sure to vary the days of the week and the snack period (i.e., morning, afternoon, and evening). Reduce your observations to every other week or one snack period per week once proper care routines are firmly established.
- Use our *Quality Improvement Observation Form: Between Meal Snacks* to record important information about snack-time feeding assistance. Like the mealtime observation protocol, this protocol generates information that can be summarized as quality indicators (QIs), which in turn can be used to target improvement efforts. This information also can be entered into our *nutrition software program* to generate summary QI scores for snack delivery by date or snack period.
- Arrange for snacks to be delivered to residents during organized, social group activities so that you can conduct quality control observations in a time-efficient manner during scheduled time periods. Note: This approach will require some organization with the dietary staff to ensure that snack items are delivered to the floor at the scheduled times.
- If you can, check to make sure that *all* residents are offered fluids between meals. Studies show that the majority of nursing home residents are at high risk for dehydration and the overwhelming majority of residents will increase their fluid intake if prompted to drink fluids multiple times per day between meals (8).
- Be sure that a variety of food and fluid items are offered during each snack period. The availability of choices has been shown to be a particularly important component of the intervention for residents with less cognitive impairment (7, 9).
- Also if possible, monitor consumption of oral liquid nutrition supplements among *all* residents at snack time. Most residents have physician orders for supplements, but staff tend to offer these only during meals and often as a substitute for the served meal and quality assistance (7,9,10). If taken between meals, supplements not only increase calorie intake, but also act as an appetite stimulant so residents eat more during meals.
- Consider increasing the frequency of observations for any resident who starts to lose weight so that you can quickly correct the problem.

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Frequently Asked Questions

Is the Minimum Data Set quality indicator pertaining to prevalence of weight loss accurate and does it reflect differences in quality of feeding assistance between nursing homes?

Facility-generated MDS data is used to determine the prevalence of weight loss among residents within a facility. There are two underlying assumptions for this MDS-derived measure of nutritional care quality. First, unintentional weight loss represents a poor clinical outcome. Second, staff may not be providing quality nutritional care if there is a high prevalence of weight loss among residents. Research shows that the MDS data related to the prevalence of weight loss within a facility (as defined by a loss of 5% or more of a resident's body weight in the last 30 days or 10% or more in the last 180 days) is accurate (1). Specifically, facilities with a higher prevalence of weight loss among their resident population did, in fact, have a greater proportion of residents at high risk for weight loss. Moreover, low oral food and fluid intake was one of the primary risk factors for weight loss.

We know from other studies (2,3) that providing quality feeding assistance during meals and/or offering snacks to residents between meals results in a significant increase in food and fluid intake. Furthermore, the consistent, daily implementation of these efficacious feeding assistance interventions prevents unintentional weight loss among at risk residents (4).

The results of our study that evaluated the MDS weight loss quality indicator showed that all 16 participating facilities needed to improve the adequacy and quality of the feeding assistance they provided during meals (1). (Our *training module on weight loss prevention* can help facilities improve feeding assistance.) The one consistent difference in care quality was that staff in low-weight loss prevalence homes were more likely to interact socially and verbally prompt residents to eat than staff in high-weight loss prevalence homes, though the provision of verbal prompts and social stimulation was infrequent across all homes. Other studies have shown that verbal encouragement to eat and social interaction at mealtimes leads to increased food consumption among the elderly (5-8). Our Quality Improvement Observation protocols can help you monitor the quality of feeding assistance in your facility (see *Step 4*).

When assessing resident risk for under-nutrition, can we use a measure other than "leaves 25% or more of food uneaten"?

Yes. Many residents can "leave 25% or more of food uneaten at most meals" and still maintain their weight due to a large amount of food served by the facility and low physical activity and resting energy expenditure levels among typical long-term-care residents. Thus, it is reasonable to use other criteria to target residents for feeding assistance interventions.

Recent evidence suggests that nursing home residents who eat less than 50% of most meals are at particularly high risk for weight loss. Additional or alternative criteria that might be considered include a resident's Body Mass Index (BMI < 21 is indicative of under-nutrition) and/or the resident's history of weight loss – that is, has the resident experienced a recent weight loss episode?

A recent weight loss episode may be defined according to MDS criteria (loss of 5% or more in the last 30 days or 10% or more in the last 180 days); or, we recommend defining a recent weight loss episode at a lower criteria (i.e., more than three pounds in the last month) to prevent additional loss. Accurate weight measurements of residents that are collected twice monthly may serve as more informative than daily estimates of residents' food and fluid consumption as long as standardized weighing procedures are used to ensure accuracy (see *Clinical Guideline for Weighing Procedures* to ensure accuracy of weight measurements). A recent study of ours showed that monthly weight values recorded in residents' medical records by NH staff were consistently higher than values recorded by research staff using a standardized weighing procedure, which resulted in a higher prevalence of weight loss and earlier identification of weight loss according to research staff weight values (9). In addition, we recommend the 50% oral intake criterion because low oral intake will likely precede a weight loss episode; and, it is better to intervene prior to the weight loss occurrence.

Clinical Guideline for Weighing Procedures in Nursing Homes

A standardized weighing protocol should be used to assess residents' body weight monthly. The key component of a standardized weighing protocol is consistency for the following elements: *Type of Scale*: residents should be routinely weighed on the same type of scale (e.g., chair versus bed) and staff should ensure the scale is calibrated to zero prior to each weighing episode. If the scale cannot be manually calibrated to zero, a small hand-held weight (5 lb or 10 lb) can be stored near the scale to check accuracy. *Time of Day*: residents should be routinely weighed at the same time of day (e.g., before or after breakfast) each month. *Clothing*: residents should be routinely weighed in their bed clothes for the most accurate body weight to avoid weighing errors due to additional items (e.g., shoes, hat, sweater, lap blanket). If a resident has incontinence, staff should provide incontinence care prior to weighing. *Staff member*: staff responsible for weighing residents should be trained in the operation of the facility scale(s) and the importance of using a standardized procedure to ensure accurate weight values. For auditing purposes, a supervisory-level person should observe the staff while s/he is conducting residents' weights (e.g., approximately 5 residents per month) to ensure that standardized procedures are being followed consistently and weight values are being recorded accurately. An observation tool for auditing purposes is available (*upon request from the first author*). In addition, monthly changes in residents' body weights, ideally, should be calculated via computer to avoid mathematical errors.

We also strongly recommend using a standardized tool to monitor body weight assessment procedures. This tool can be used by supervisory-level staff to observe a sample of 5 residents each month during weight assessments to identify potential problems or inconsistencies in the weighing procedures.

Our residents are very sedentary. Do they really need all the calories we set before them each day?

The amount of calories each resident needs depends largely on total lean body mass. Sedentary older adults tend to have a relatively small amount of lean body mass and, thus, have relatively low caloric needs

compared to younger, healthy adults. Although the caloric needs of older adults may be lower due to a small amount of lean body mass and low physical activity levels, their nutrient requirements (e.g., protein, vitamins, minerals) are usually not lower, and in some cases, may actually be higher than that of younger, healthy adults. Specifically, caloric needs increase with an infection or other type of illness, which is common among nursing home residents.

Nursing homes are required to serve each resident three substantial meals per day that average a total of 2000 served calories, though some facilities serve more. These federal regulations ensure that the nutrient requirements of all residents are met through the facility meal service even though there are caloric need differences between individual residents. In fact, the total amount of calories served over the three meals within a typical facility is more than what is needed for many individual residents. However, residents vary in which meals they prefer, so a substantial amount of calories must be provided at every meal. Recent studies have suggested that a good indicator of whether residents are likely to be getting enough calories (although we don't know about specific nutrients) is if they are eating *at least* 50% of most meals (22-24). With this in mind, if a nursing home is unable to provide quality feeding assistance to all residents who need it, we recommend targeting first those who eat less than 50% of most meals and thus are at highest risk for weight loss and under-nutrition (see *Step 3)*.

How effective are oral liquid nutrition supplements in increasing residents' caloric intake?

The majority of long term care residents have physician or dietitian orders to receive oral liquid nutrition supplements, yet findings from recent studies raise questions about the efficacy of these expensive products in preventing unintentional weight loss among residents. The results of several studies have shown that supplements are not given to residents consistently or in a manner that facilitates adequate consumption (10,11). Although the data are limited, studies suggest that residents who consistently consume adequate amounts of supplements do benefit. However, at least 35% to 40% of residents do not consume enough of supplements to benefit from the concentrated nutritional content (10-12). Our own observations suggest that staff often misuse supplements in daily nursing home care practice. Specifically, supplements are often offered during meals as a *substitute* for other foods and fluids and more time-intensive feeding assistance care provision.

For supplements to be most effective in increasing overall nutrient intake, they should be offered *between* meals instead of with the meal for two reasons:

- Research shows that when supplements are consumed *with* meals, residents tend to *eat less* of the meal. Alternatively, when supplements are provided between meals, residents tend not to lose their appetite for meals, resulting in a greater combined intake of nutrients (meals + supplements); and

- Offering supplements between meals 2-3 times per day increases the number of opportunities residents have to consume calories and nutrients. Some residents consume only small amounts of calories during any single eating occasion. These residents benefit from having access to food multiple (5 to 6) times per day to meet their nutritional needs.

Our research suggests that offering between-meal snacks (see *Part 2)* may be a more effective strategy for increasing residents' daily food and fluid intake than offering oral liquid nutrition supplements. In a study that evaluated our weight loss prevention intervention, participating residents consumed, on average, an extra 380 calories per day in between-meal snacks and assorted beverages, compared to 94 calories per day from supplements (2). A separate study showed that offering residents snacks between meals resulted in higher caloric intake, lower refusal rates and required less staff time compared to supplements. Moreover, supplements were more expensive than snack foods and fluids. In short, most residents seem to prefer a choice among a variety of foods and fluids between meals, as opposed to supplements alone (13).

What nutritional interventions do family members prefer for residents?

In a recent study (14), we surveyed resident representatives, mostly family members, to identify their preferences for nutritional interventions for their relative, given low oral intake and weight loss risk. The 105 respondents rated six possible interventions in order of preference from most to least desirable, as follows:

1. Improve quality of food
2. Improve quality of feeding assistance
3. Provide multiple small meals and snacks throughout the day
4. Place resident in preferred dining location
5. Provide oral liquid nutrition supplements
6. Provide an appetite stimulant medication

These findings indicate a clear preference among residents' significant others for behavioral and environmental approaches over the use of supplements or pharmacological approaches to improve food and fluid intake. Our *training module on weight loss prevention* presents two effective behavioral interventions (related to choices 2 and 3 listed above) for increasing food and fluid intake among most at-risk residents.

Can we implement the weight loss prevention intervention with residents who eat in their rooms?

Yes, it is possible to implement each of the intervention's four steps with residents who eat meals in their rooms. As a practical matter, however, some assessment items cannot be completed for these residents. Supervisors, for instance, are typically stationed in the hallway so that they can conduct risk assessments for several residents on the hallway at one time (see *Step 1*); this means they cannot observe in-room social interaction or the specific type of feeding assistance being provided by individual nurse aides to residents.

While the intervention can be implemented with residents who dine in their rooms, we strongly recommend that residents in need of staff attention during meals due to low oral intake eat in the dining room, or other common location, for several reasons.

First, most residents say they prefer to eat their meals in the dining room.

It is important to note that residents' dining location preferences are heavily influenced by the established routine at the facility. For example, we have observed in our research that 97% of the residents in facilities with an established routine and policy that all residents eat all meals in the dining room express a consistent preference to eat all of their meals in the dining room. In contrast,

facilities wherein most residents eat breakfast and dinner in their rooms and only lunch in the dining room have residents who report preferences that mirror this staff care pattern. We strongly believe that the established staff care pattern is driving residents' preferences – not the other way around.

Second, presence in the dining room allows the staff to provide time-efficient feeding assistance to small groups of residents. Our research also shows that residents who eat in the dining room receive more and better quality feeding assistance. Moreover, dining in a common area also increases the accuracy of nurse aide estimates of residents' food and fluid intake during meals, presumably because the trays are more visible to multiple staff members. Third, dining in a common area promotes social interaction among residents and staff, which in turn stimulates food and fluid intake (2-8). This is true for all residents present in the dining room, not just those at risk for weight loss.

See *Step 3* for staffing strategies that can help accommodate all residents in the dining room. It is worthwhile to consider both feeding assistance needs and compatibility when grouping residents together for dining. Residents will not want to eat in the dining room if they dislike their tablemates.

In general, the delivery of between meal snacks is more practical than mealtime feeding assistance for residents who have a strong preference to eat all of their meals in their room for two reasons. First, snacks require less staff time per resident per snack period than mealtime feeding assistance. Second, snack opportunities arise outside of busy mealtime periods; thus, there may be more staff available (e.g., volunteers, social activities personnel) to assist in snack delivery.

How does your snack intervention compare to usual care in nursing homes?

There's not much of a comparison actually. Although many nursing home staff believe that their facility has a snack or hydration program in place, our research shows that direct care staff offer few snacks and beverages to residents between meals. In a recent study, we found that, on average, staff offered residents between-meal fluids (primarily water) only once a day and rarely offered food at all and then only to less than 10% of nutritionally at-risk residents (2). In addition, residents consumed, on average, less than 100 calories a day from between-meal snacks provided by staff because snacks were offered infrequently and with no assistance or encouragement to promote consumption.

By contrast, our snack intervention, which has been shown to increase average daily caloric intake by 380 calories a day (2), calls for staff to offer residents between-meal snacks and beverages three times a day, around 10 am, 2 pm, and 7 pm. Following our *snack intervention protocol*, one staff person can expect to spend about 15 to 20 minutes providing feeding assistance to a group of 4 residents. In our experience, the snack intervention fits in well with most morning and afternoon social activities programs, and coordinators for these programs seem willing to help with the intervention, thus freeing nurse aides to attend to other duties.

How can we increase fluid intake among our residents?

Our mealtime intervention will help increase fluid intake for some residents (see *Step 2*). In addition, however, we recommend that staff offer *all* residents fluids between meals, as many as 4-8 times a day, in the context of daily care provision. Studies show that, while the majority of nursing home residents are at high risk for dehydration, few facilities offer fluids between meals. In one study, we found that staff offered residents between-meal beverages less than once per day on average (2). Many workers erroneously believe that residents will request fluids, if thirsty, or retrieve a glass of water for themselves from the pitcher provided at their bedside. Even if a resident is cognitively aware and physically capable, however, few residents make such requests or retrieve fluids independently for several reasons. First, our thirst sensation declines with age. Thus, many older adults do not recognize that they are thirsty even when they are. Second, cognitive impairment and depression impairs a resident's ability and motivation to seek out fluids. It is critical that staff not only offer fluids but also provide encouragement to residents to drink the fluids.

Water, assorted juices, and other beverages, along with staff encouragement to drink, can be offered during daily care provision, medication passes, snack times, and other organized, social group activities. For best results, offer residents a variety of beverages from which to choose (e.g., assorted juices such as apple, orange, cranberry; hot beverages such as herbal teas; fruit smoothies) and, ideally, beverages that they are not typically served during meals. Our research shows that this strategy results in fewer refusals to drink and increases in intake, especially among mildly impaired to cognitively intact residents (2,5,13).

Make sure residents are offered adequate toileting assistance along with extra fluids (see our *training module on incontinence management*). Some residents will purposely limit their fluid intake for fear of incontinence episodes. Likewise, some direct care staff will limit the fluids offered to individual residents to ease their incontinence care workload.

Some direct care staff also believe that residents who have a problem with diarrhea should not be given fruit juices, an erroneous notion that fails to recognize that these residents are at even higher risk of dehydration. Due to judgment errors like this, licensed nurses need to supervise and provide feedback to workers about the importance of offering additional fluids between meals.

Are there resident characteristics that predict who will be responsive to the weight loss prevention intervention?

Our research strongly suggests that, rather than relying on resident characteristics, the most efficient and valid method of identifying residents who are responsive to the delivery of mealtime feeding assistance or offering snacks between meals is a 1- to 2-day trial of the intervention itself (see *Step 2*). Indeed, the best approach to determining a resident's responsiveness to any behavioral intervention—feeding assistance, scheduled toileting assistance, etc.—is to conduct a brief, "run-in" trial of the intervention. Too often, nursing home staff use residents' cognitive status to select intervention candidates, but this approach excludes many cognitively impaired residents who nevertheless are in need of and responsive to our interventions.

Do nursing home residents tend to eat more during certain meals or at certain times of the day?

Yes. Our research and that of others has shown that residents tend to eat a greater proportion of their breakfast and lunch meals compared to dinner. Similarly, residents consume significantly more calories and refuse foods and fluids less often during morning and afternoon snack periods compared to an evening snack period. These differences in resident intake between meals and snack periods may occur for several reasons. First, most facilities serve a smaller quantity of food at breakfast; thus, a greater proportion of what is served is consumed. Second, there has been a longer period of time since the last meal (dinner), so residents may simply be hungrier during breakfast and morning snack periods. Third, research has shown that some residents with dementia eat less as the day progresses due, at least partially, to a phenomenon known as “sun-downing” (15). For all of these reasons, it is recommended that a facility make the most of the breakfast meal. A facility may do well to routinely enhance breakfast items for all residents (e.g., adding butter, cream, syrup, brown sugar to hot cereal and entrée items). Further, if your staff is unable to provide quality feeding assistance during all three meals or deliver three snacks per day between meals, it would likely benefit the greatest number of residents to provide feeding assistance during the breakfast and lunch meals and deliver snacks between meals during the morning and afternoon periods. Most facilities have more staff during these time periods (7 am to 3 pm) compared to dinner and evening snack periods (3 pm to 11 pm shift).

How often do we need to do the quality control checks and are these really necessary?

The quality control checks are *essential* for ensuring that feeding assistance during meals and snacks between meals are provided consistently (across all meal and snack periods and days of the week). We recommend training several supervisory, dietary, and administrative staff in the quality control checks (which anyone can perform) as this allows greater flexibility in who conducts the weekly checks and, thus, is less of a time burden on any one staff member. See *Step 4* for detailed instructions on how to conduct quality control checks.

When you first begin, quality control observations should be performed by a supervisory-level staff member (licensed nurse, dietitian) on a frequent basis: at least one check for each mealtime period and one check for each snack period for a total of six checks per week. In addition, these initial quality control checks should involve observation of the complete meal or snack period. Once new care patterns (feeding assistance during meals and snack delivery between meals) are firmly in place, the number of quality control checks can be gradually decreased over time to one meal and one snack period per week, alternating each week which meal or snack period (and on which day of the week) is targeted for observation (e.g. breakfast on Monday, morning snack on Tuesday week 1; lunch on Wednesday, afternoon snack on Thursday week 2). In addition, the quality control checks may involve observation of only a portion of the meal or snack period (i.e., the first 15-20 minutes).

The quality control checks allow the supervisor, administrator, and/or dietitian to

evaluate daily care provision. If the quality control checks reveal a problem at a specific meal or snack period (or day of the week), then the supervisor or administrator should increase the frequency of checks at that meal or snack time to determine the problem. These checks may reveal a barrier to daily care provision, such as a conflict between morning snacks and the shower schedule or afternoon snacks and a religious service or a delay in snack delivery by kitchen staff on certain week days. Thus, the information gained through the increased frequency of checks allows supervisory-level staff to problem-solve and reorganize staff to ensure daily care provision.

Our research shows that shortly after supervisory-level staff stop conducting quality control observations, direct care staff gradually stop providing adequate feeding assistance during meals and snacks between meals. In other words, they revert to their prior, poor care patterns. It's that simple. And, it only takes a few checks each week to keep good care patterns in place.

Is there any way to speed up the initial resident assessment?

There are some shortcuts that staff can take when conducting the initial resident assessments (see *Step 1* [link to wl1] for instructions on how to identify residents with low oral food and fluid intake). However, use of these shortcuts may mean that some residents at risk for weight loss are not identified.

To speed up the identification of those residents who are eating less than 75% of most meals and thus are potentially at risk for weight loss, review three consecutive, complete days of food and fluid intake data from the medical record. We know from previous research that medical record documentation of intake is inaccurate and that in general staff over-estimate intake by at least 15%. Given this, we can use the medical record data to help identify two groups of residents:

1. Residents who are at risk for weight loss and need a two-day trial of feeding assistance during meals or snacks between meals; and,
2. Residents who require an intake assessment by a supervisory-level staff person (licensed nurse or dietitian).

Use the following procedure:

- Determine the number of nine meals over three consecutive days that a resident's meal intake was documented in his or her medical record as below 50%.
- If medical record documentation for most meals (five or more of the nine meals) shows total percent intake below 50%, the resident is at risk for weight loss and should receive a two-day trial of feeding assistance during meals and/or delivery of snacks between meals (see Step 2).
- If medical record documentation for most meals shows total percent intake equal to or above 50%, the resident needs an intake assessment by a licensed nurse or dietitian to determine their true food and fluid intake. Specifically, these residents should be observed during six meals across two consecutive days to accurately estimate their intake (see *Step 1*).

What is the role of the dietitian?

The facility dietitian should play a key role in implementing nutritional assessments and associated care planning activities. Most

facilities do not have a full-time dietitian on staff who can take responsibility for all of the necessary assessments (weight loss risk, caloric intake needs, body mass index calculation, mealtime feeding assistance and snack evaluations, and quality control observations). Thus, the dietitian should work directly with licensed nurses, nurse aides, and other relevant staff to complete these tasks. The dietitian should be involved in the implementation process to the greatest extent possible.

Specifically, the dietitian represents a "supervisory-level staff member" who should minimally assist with the following:

- initial assessments of residents' intake levels to identify those at risk of weight loss. This includes determining a resident's daily caloric needs, Body Mass Index, and history of weight loss;
- development of a mealtime feeding assistance or snack intervention care plan that includes consideration of residents' assistance and dietary needs and food and fluid preferences;
- weekly quality control observations of mealtime feeding assistance and between-meal snack delivery;
- coordinating related activities with other dietary and kitchen personnel.

To support new care practices, the dietitian can work with other dietary and kitchen staff to ensure:

- That meal trays are not picked up too early (less than 30 minutes) following delivery. This may be a problem particularly during the dinner meal as kitchen staff may be in a hurry to close up for the day.
- That a cart is available with meal tray substitutions (assorted sandwiches, fruit plates) so that staff providing feeding assistance do not have to make a trip to the kitchen to retrieve an alternative if the resident does not like the served meal.
- That kitchen staff respond positively to residents' requests for substitutions or second helpings.
- That meals, particularly breakfast, are enhanced with butter, cream, syrup additions, and the like to make served items more calorie dense.
- That alternatives to traditional meal service, such as family or buffet style dining, are explored.
- That a cart of assorted snack items (foods and fluids) is sent in a timely manner to activities personnel and/or direct care staff to allow delivery between meals.

In summary, the more staff members involved in the process (dietary workers, licensed nurses, administrator, nurse aides, social activities staff, and volunteers), the better chance your facility has of improving nutritional care quality for all of your residents.

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Back to Top

Weight Loss Prevention: Related Studies

Accuracy of Minimum Data Set in Identifying Residents at Risk for Under-nutrition: Oral Intake and Food Complaints

Sandra F. Simmons, Betty Lim, and John F. Schnelle, 2002, in *American Medical Directors Association;* May/June:140-145.

This study showed that nursing home staff inaccurately documented low oral intake and food complaints among residents, resulting in a significant underestimate of residents with either of these risk factors for under-nutrition. The researchers found a significant discrepancy between nursing home staff estimates on Minimum Data Set (MDS) documentation and their own independent assessments based on direct observations of mealtrays and interviews with residents. Whereas the researchers identified 55 (73%) of the 75 residents who participated in the study as being at risk for under-nutrition due to low food and fluid consumption, nursing home staff failed to identify 27 of these residents. In interviews with research staff, 32% of the residents complained about the facility's food. By comparison, nursing home staff reported *no* food complaints by residents. The authors suggest that staff-recorded inaccuracies may stem from nurse aides having too much to do during mealtimes, vague instructions in the MDS manual on how to assess intake and food complaints, and supervisors failing to periodically check nurse aide estimates for accuracy. Nursing home staff also may underestimate the number of residents, including those with cognitive impairments, who can reliably answer questions about the facility's quality of food and other aspects of their care.

Nutritional Intake Monitoring for Nursing Home Residents: A Comparison of Staff Documentation, Direct Observation, and Photography Methods

Sandra F. Simmons and David Reuben, 2000, in *Journal of the American Geriatrics Society;* 48:209-213.

This study showed that two alternative methods for estimating food and fluid intake among nursing home residents are more reliable than documented estimates by nurse aides, who have been shown to consistently overestimate intake levels by 15% or more. In one of the methods tested, trained research staff conducted independent observations of meal trays for 56 residents both before and after each of nine meals and recorded the total percentage of food and fluid intake as well as the percentage of intake for individual food and fluid items. In the second method, a second group of independent research staff took before and after photos of the residents' mealtrays and used these pictures to calculate their estimates of intake. Both methods yielded comparable, reliable intake estimates. By comparison, nursing home staff overestimated intake levels by 20% or more. As a result, they failed to identify half of the residents who consistently ate less than 75% of their meals, a low intake level that puts them at risk of under-nutrition, according to federal standards. The authors recommend the photography method over direct observations because it provides a permanent record that can be rated by multiple professionals, it allows comparisons to be conducted in a less hurried manner and after hectic mealtimes, and it provides immediate, visual evidence of food volumes both before and after meals.

Family Members' Preferences for Nutrition Interventions to Improve Nursing Home Residents' Oral Food and Fluid Intake

Sandra F. Simmons, Helene Y. Lam, Geetha Rao, and John F. Schnelle, 2003, in *Journal of the American Geriatrics Society;* 51:69-74.

What nutrition interventions do family members prefer for their relatives at risk for under-nutrition and weight loss who reside in nursing homes? Given a choice of six possible interventions, the 105 resident representatives, mostly family members, who completed this study's written questionnaire, rated them, in order of preference, as follows:

- Improve quality of food
- Improve quality of feeding assistance
- Provide multiple small meals and snacks throughout the day
- Place resident in preferred dining location
- Provide oral liquid nutrition supplements
- Provide an appetite stimulant medication

These findings indicate a clear preference among residents' significant others for behavioral and environmental approaches over the use of supplements or pharmacological approaches to improve food and fluid intake. The authors point out that resident preferences could not be assessed directly in this study due to the questionnaire's complex design, but future studies should attempt to correct this shortcoming.

The Minimum Data Set Weight Loss Quality Indicator: Does it Reflect Differences in Care Processes Related to Weight Loss?

Sandra F. Simmons, Emily T. Garcia, Mary P. Cadogan, N.R. Al-Samarrai, L.F. Levy-Storms, Dan Osterweil, and John F. Schnelle, in *Journal of the American Geriatrics Society;* accepted for publication.

Federal regulations require nursing homes to complete resident assessments periodically using the Minimum Data Set (MDS) assessment protocol. Results are used to generate quality indicators (QI) for each facility as a means of identifying poor outcomes in a number of clinical areas. But the use of QIs as a measure of quality of care is controversial due in part to concerns about the accuracy of staff-generated MDS data. This study collected independent data that showed that the MDS-derived "prevalence of weight loss" QI does indeed discriminate between nursing homes with a high percentage of residents at risk for weight loss and those with a much lower percentage of at-risk residents. A desirable, low score on this QI, however, did not mean that the facility provided qualitatively better feeding assistance to its residents. In fact, results indicated that all the facilities needed to improve the adequacy and quality of their feeding assistance. The one consistent, between-group difference in care quality was that the nurse aides in low-weight loss prevalence homes were more likely to interact socially and verbally prompt residents to eat than the nurse aides in high-weight loss prevalence homes. Other studies have shown that verbal encouragement to eat and social interaction at mealtimes leads to increased food consumption among the elderly.

Implementation of Nutritional Interventions in Long Term Care

Sandra F. Simmons and John F. Schnelle, in *Alzheimer's Care Quarterly: Translating Psychosocial Research into Practice; in press.*

This paper reviews recent research findings that underscore the need to improve the adequacy and quality of feeding assistance in nursing homes. Additionally, based on results from Borun Center research, the authors describe a non-medical intervention that has been shown to significantly improve food and fluid consumption among nursing home residents who otherwise would be at risk for under-nutrition and weight loss due to low intake. The implementation process involves four steps:

1. Identify residents at risk for under-nutrition and weight loss due to low intake. These residents typically eat less than 75% of most meals
2. Implement a two-day, or six-meal, trial of feeding assistance with each at-risk resident to determine whether he or she is responsive to feeding assistance. Residents who increase their intake by 15% or more should continue to receive the mealtime feeding assistance intervention. Unresponsive residents should be offered between-meal snacks at least twice a day (and ideally three times daily) in order to increase their food and fluid intake.
3. Staffing adjustments should be made as necessary to meet the feeding assistance needs of at-risk residents both during and between meals.
4. Supervisory staff should regularly monitor mealtime and snack routines to ensure that nurse aides or other designated staff members continue to provide adequate feeding assistance to targeted residents. Supervisors can use a standardized observational protocol described in this paper to effectively manage the feeding assistance intervention.

Improving Food Intake in Nursing Home Residents with Feeding Assistance: A Staffing Analysis.

Sandra F. Simmons, Dan Osterweil, and John F. Schnelle, 2001, in *Journal of Gerontology: Medical Sciences;* Vol. 56A, No. 12, M790-M794.

This study was designed to answer two questions: 1) How many nursing home residents are responsive to feeding assistance? and 2) How much staff time is required to provide feeding assistance to these residents? Results showed that about half of the 74 residents enrolled in the study increased their intake by an average of 30% in response to a two-day, or six-meal, trial of feeding assistance implemented by trained research staff. This one-on-one intervention, however, required significantly more staff time to implement: an average of 38 minutes per resident per meal compared to 9 minutes rendered by nursing home staff under usual conditions. The authors suggest that the intervention would be more feasible to implement if unresponsive residents were accurately identified in assessment trials; failure to identify these residents would roughly double the number of staff needed during mealtimes. Staff requirements could be reduced further if staff provided feeding assistance to groups of residents. Preliminary data from this study suggests that feeding assistance can be effectively provided in small groups of three for most residents who are responsive to individual assistance, but additional time is required to transport these residents to and from the dining room.

Individualized Feeding Assistance Care for Nursing Home Residents: Staffing Requirements to Implement Two Interventions

Sandra F. Simmons and John F. Schnelle, in *Journal of Gerontology: Medical Sciences,* accepted for publication.

This study showed that 90% of residents who are at-risk for weight loss will significantly increase their food and fluid intake in response to one of two non-medical interventions: a mealtime feeding assistance intervention and a between-meal snack intervention. A total of 134 residents in three nursing homes received a two-day trial of one-on-one feeding assistance during six meals. Sixty-eight residents who did not increase their food and fluid intake in response to mealtime feeding assistance received a two-day intervention trial during which snacks were offered between meals three times daily. For both interventions, research staff provided assistance that encouraged residents to eat on their own, casually conversed with residents throughout each meal or snack, and offered a variety of foods and beverages. Almost half (46%) of the residents significantly increased their consumption in response to one-on-one mealtime feeding assistance. An additional 44 percent significantly increased their intake in response to the between-meal snack intervention. Both interventions required significantly more staff time to implement than usual care. The authors offer staffing strategies to maximize staff efficiency and effectiveness.

An Intervention to Increase Fluid Intake in Nursing Home Residents: Prompting and Preference Compliance

Sandra F. Simmons, Cathy Alessi, and John F. Schnelle, 2001, in *Journal of the American Geriatrics Society* 49:926-933.

This study showed that total daily fluid intake among nursing home residents increased when residents were encouraged to drink between meals and given beverages they liked. Eighty-one percent of the 48 residents who participated in the study significantly increased their average daily fluid intake when research staff verbally prompted them to drink on four to eight occasions between meals. Fluid intake increased even more, and refusals to drink dropped, when residents were offered the beverage of their choice. However, average daily increases were small—less than 5 ounces per day—for as many as one-third of the participants. Cognitive status influenced the effectiveness of the intervention. Residents with greater cognitive impairment were more likely to increase their fluid intake in response to verbal prompts alone, whereas cognitively intact residents needed the added incentive of their preferred beverage to increase consumption. Increases in between-meal fluids had no effect on residents' fluid intake during meals. Residents maintained their responsiveness to this simple intervention over eight months and showed significant improvements in their hydration status as a result of the increase in daily fluid intake.

Quality Assessment in Nursing Homes by Systematic Direct Observation: Feeding Assistance

Sandra F. Simmons, Sarah Babineau, Emily Garcia, and John F. Schnelle, 2002, in *Journal of Gerontology: Medical Sciences;* Vol. 57A, No. 10, M665-M671.

This study showed that a standardized protocol that calls for direct observations of care can be used to accurately measure the adequacy and quality of feeding assistance in nursing homes. The observational protocol, designed for routine use by licensed nursing home staff, is a practical alternative to reviewing medical chart information to monitor quality of care. Prior studies have shown that chart information is unreliable in that it consistently overestimates residents' food and fluid intake. The observational protocol assesses

the ability of nurse aides to accomplish four tasks deemed critical to the delivery of adequate feeding assistance. These tasks include: 1) accurately identifying residents with clinically significant low oral food and fluid intake during mealtimes; 2) providing feeding assistance to at-risk residents during mealtimes; 3) providing feeding assistance to residents identified in the Minimum Data Set as requiring staff assistance to eat; and 4) providing a verbal prompt to residents who receive physical assistance at mealtimes. The study showed that the protocol is reliable, replicable, and feasible to implement. One staff person can use it to reliably observe 6 to 8 residents during one mealtime period.

Prevention of unintentional weight loss in nursing home residents: A controlled trial of feeding assistance.

Simmons SF, Keeler E, Xiaohui ZM, Hickey KA, Sato HW, Schnelle JF. 2008 in *Journal of the American Geriatrics Society*, 56:1466-1473.

This study showed that the delivery of optimal feeding assistance twice per day during meals or offering residents snack foods and fluids between meals twice per day, five days per week resulted in significant gains in residents' daily food and fluid intake and body weight over a 24-week intervention period. The interventions were implemented by research staff and compared to usual nursing home care within the same facilities. All residents were at risk for unintentional weight loss due to low oral intake prior to intervention. The average amount of research staff time spent providing the interventions was 42 minutes per person/meal and 13 minutes per person/between meal snack compared to usual care during which residents received, on average, 5 minutes of assistance per person/meal and less than one minute per person/snack. However, residents could be grouped together for mealtime feeding assistance (1 staff member to 3 residents seated at the same table) and snack delivery (1 staff member to 4 residents) to make it more time-efficient in daily care practice.

A preliminary evaluation of the Paid Feeding Assistant regulation: Impact on feeding assistance care process quality in nursing homes.

Simmons SF, Bertrand R, Shier V, Sweetland R, Moore T, Hurd D, Schnelle JF. 2007 in *The Gerontologist*, 47(2):184-192.

This study was sponsored by the Centers for Medicare and Medicaid Services (CMS) and the Agency for Healthcare Research and Quality (AHRQ) to evaluate the impact of the new "paid feeding assistant" regulation that allows nursing homes to hire single-task workers or cross-train existing non-nursing staff within the facility to provide feeding assistance to residents. This preliminary evaluation study evaluated mealtime feeding assistance care quality in a group of 7 facilities in 3 states with active programs in place. Results showed that most of these facilities cross-trained existing non-nursing staff (e.g., administrative, housekeeping, laundry, social activities personnel) to help with feeding assistance care during meals and the quality of care provided by these workers was comparable to, if not better than, the care provided by certified nurse aides within the same facilities. Non-nursing staff trained as "feeding assistants" actually spent significantly more time with individual residents and, as a result, residents assisted by these workers ate more than residents assisted by nurse aides. There were no reported staffing changes at the nurse aide or licensed nurse level as a result of having a program in a facility and all levels of staff reported positive benefits of the program to both staff and residents. This study demonstrates that the use of non-nursing staff within a facility can serve to supplement

existing nurse aide staff during meals to improve feeding assistance care quality.

Cost-effectiveness of two nutrition interventions in nursing home residents: A randomized, controlled trial.
Simmons SF, Zhuo X, Keeler E in *Journal of the American Geriatrics Society*.

This study compared the consistent delivery of oral liquid nutrition supplements to offering residents a choice among a variety of foods and fluids between meals, twice per day, five days per week for 6 weeks. Both groups were provided with appropriate assistance and encouragement to promote consumption. The results showed that both interventions resulted in a significant increase in residents' between meal caloric intake relative to the group who continued to receive usual nursing home care. In addition, both interventions required more staff time than the amount of time spent providing between meal foods, fluids or supplements during usual nursing home care. The snack intervention was less expensive and more effective than the supplement intervention based on residents' daily caloric intake, refusal rates, assistance time per resident per offer, and the actual cost of the served items. This study concluded that offering residents a choice among a variety of foods and fluids twice per day may be a more effective nutrition intervention than oral liquid supplementation, which is much more common.

Weight Loss Prevention: Links and Other Resources

American Association of Diabetes Educators
http://www.aadenet.org/

American Diabetes Association
http://www.diabetes.org/home.jsp

American Dietetic Association
http://www.eatright.org/Public/index.cfm

American Medical Directors Association
Clinical Practice Guideline: Altered Nutritional Status
http://www.amda.com/info/cpg/nutritionalstatus.htm

American Society for Clinical Nutrition
http://www.ascn.org/

American Society for Nutritional Sciences
http://www.asns.org/

Centers for Medicare and Medicaid
Materials and Resources--
Nutrition and Hydration Care:
A Fact PAC for Nursing Home Administrators and Managers
http://www.cms.hhs.gov/professionals/partners/nmep/materials/educationaltools/nutritionhydration/Default.asp

Centers for Medicare and Medicaid
Health and Human Services
Federal Register
Sept. 26, 2003
Requirements for Paid Feeding Assistants in Long-Term Care
http://www.cms.hhs.gov/providerupdate/regs/cms2175cn.pdf

Dietary Managers Association
http://www.dmaonline.org/

Medicare
Nursing Home Awareness Campaigns
Nutrition and Hydration Awareness: Nutrition Care Alert
http://medicare.gov/Nursing/Campaigns/NutriCareAlerts.asp

Weight Loss Prevention Intervention Forms

STEP 1—RESIDENT ASSESSMENTS

1. Mealtime Observational Protocol
2. Between-Meal Snack and Oral Supplement Consumption Assessment
3. Resident Interview: Nutrition and Food Complaints
4. Resident Interview: Geriatric Depression Scale
5. Resident Interview: Chronic Pain Assessment
6. Resident Medical Record Review
7. Guidelines for Estimating Food Intake
8. Guidelines for Accurate Weight Assessments

STEP 2—INDIVIDUALIZING FEEDING ASSISTANCE

1. Mealtime Feeding Assistance Protocol
2. Between-Meal Snack Protocol

STEP 4—QUALITY MONITORING

1. Quality Improvement Observation Form: Meals
2. Quality Improvement Observation Form: Between-Meal Snacks
3. Quality Monitoring Observation Form: Weight Assessments

Step 1 Assessment: Mealtime Observational Protocoal **Staff Observer Name: _____**

Date ___ / ___ / ___ MEAL: (circle) Breakfast Lunch Dinner Time: ____ : ____ am pm

	RESIDENT NAME	Total % Eaten (food + fluids)	Type of Assistance	Total Assist Time (minutes)	IF a Supplement is Given, Record Specific Type	Amount Consumed
1)						**oz**
2)						**oz**
3)						**oz**
4)						**oz**
5)						**oz**

Comments:

1)

2)

3)

4)

5)

	1) Name:		2) Name:		3) Name:		4) Name:		5) Name:	
	Food/Fluid Item	%	Food/Fluid Item	%	Food/Fluid Item	%	Food/Fluid Item	%	Food/Fluid Item	%
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

Codes for Type of Assist
None = N (no assistance provided) Physical = P (e.g., aide feeds resident) Physical Guidance. = PG (e.g., aide guides resident to feed self) Nonverbal = NV (mimic gestures to eat)
Verbal = V (e.g., “Pick up your spoon & take a bite”; “Swallow”) Social Stimulation / Encouragement = SS / E (e.g., “How are you today?”; “How are you feeling?”; “You’re eating well today.”)

Guidelines for Estimating Total Assistance Time:
We recommend either of two methods for estimating total assistance time. Choose the one that works best with your staff.

1. Use a stop watch to time each episode of feeding assistance. Done diligently, this method is accurate, but can be cumbersome.
2. If feeding assistance is provided sporadically, as it often is, use a tally mark to denote each episode of feeding assistance and assign a reasonable standard amount of time to each tally mark (e.g., 10 or 15 seconds). At the end of the meal, add the tally marks and multiply by the unit of time assigned to each mark to estimate the total assistance time.

Step 1 Assessment: Between Meal Snack and Oral Supplement Consumption

DATE ___ / ___ / ____ SNACK TIME: ___Morning ___Afternoon ___Evening ACTIVITY:_____

RESIDENT NAME	Food Items Given	TOTAL % Eaten	Fluid Items Given	Amount Consumed	Type of ASSIST	Total Assist Time (min)	SUPPLEMENT? Y/N	SUPPLEMENT? oz. consumed
1				oz				oz
2				oz				oz
3				oz				oz
4				oz				oz
5				oz				oz
6				oz				oz
7				oz				oz
8				oz				oz
9				oz				oz
10				oz				oz

Comments:
1
2
3
4
5
6
7
8
9
10

Step 1 Assessment: Nutrition and Food Complaints

Resident Name:_____ **Staff Interviewer:**_____

Date of Interview:_____/_____/_____

mm dd yy

Check Response
DK = Don't Know NR = No Response or Nonsense Response REF=Refusal to answer question

Food Complaints:

1. Do you like the food here? ___YES ___NO ___SOMETIMES ___DK/NR/REF

IF NO, what would you change to make it better?(i.e., *more salt, sugar, no restricted diet*)

2. Do you feel that there enough variety / food choices? ___YES ___NO ___SOMETIMES ___DK/NR/REF

3. Does the food look good / appetizing / attractive to you? ___YES ___NO ___ SOMETIMES ___DK/NR/REF

4. Is the food served at the right temperature (i.e., *coffee and soup served hot; jello served cold*)?
___YES ___NO ___SOMETIMES ___DK ___NR

5. If you don't like the food that you are given, can you get something else instead? (or do you just have to wait until the next meal is served and hope that you will like that)? ___YES ___NO ___SOMETIMES ___DK/NR/REF

TOTAL SCORE FOOD COMPLAINTS (Total number of "no"s to Questions 1-5): _____

PRESENCE OF FOOD COMPLAINTS (Any "no" answer to Questions 1-5): Complaints No Complaints

Do not calculate total score only if all responses to questions 1-5 were DK/NR/REF
A response of "sometimes" should be treated as a "no" (1 point) in scoring.

Food and Dining Location Preferences:

6. Would you like to have a snack (*e.g., fruit, pudding, cookies, juice*) between meals (*breakfast, lunch, dinner*)?
___YES ___NO ___SOMETIMES ___DK ___NR

IF YES, What kinds of foods/drinks would you like to have for a snack?

7. Where do you like/prefer to eat:
Breakfast: ____ In Room ____ Outside of Room ____ Dining Room
Lunch: ____ In Room ____ Outside of Room ____ Dining Room
Dinner: ____ In Room ____ Outside of Room ____ Dining Room

Interview outcome

Complete ___ 1
Incomplete DK ___ 2
Incomplete NR ___ 3
Incomplete REF ___ 4

Step 1 Assessment: Geriatric Depression Scale

Resident Name:_____ **Staff Interviewer**:_____

Date of Interview:____/____/____
mm dd yy

Check Response
DK=Don't Know **NR=**No Response or Nonsense Response **REF=**Refusal to answer question
IF RESPONSE OF "SOMETIMES", RESTATE THE QUESTION: "How do you feel MOST of the time?"

1. Are you basically satisfied with your life?	___YES	___**NO**	___DK/NR/REF
2. Have you dropped most of your activities and interests?	___**YES**	___NO	___DK/NR/REF
3. Do you feel that your life is empty?	___**YES**	___NO	___DK/NR/REF
4. Do you often get bored?	___**YES**	___NO	___DK/NR/REF
5. Are you in good spirits most of the time?	___YES	___**NO**	___DK/NR/REF
6. Are you afraid that something bad is going to happen to you?	___**YES**	___NO	___DK/NR/REF
7. Do you feel happy most of the time?	___YES	___**NO**	___DK/NR/REF
8. Do you often feel helpless?	___**YES**	___NO	___DK/NR/REF
9. Do you think it is wonderful to be alive?	___YES	___**NO**	___DK/NR/REF
10. Do you feel worthless the way you are now?	___**YES**	___NO	___DK/NR/REF
11. Do you feel full of energy?	___YES	___**NO**	___DK/NR/REF
12. Do you feel that your situation is hopeless?	___**YES**	___NO	___DK/NR/REF

SCORE > 4 = PROBABLE DEPRESSION **TOTAL SCORE:**_____

Scoring System: Each BOLD-FACED answer counts one (1) point.
Do not calculate total score if more than 4 of the 12 questions have DK/NR/REF answers. Print note. "No score due to incomplete resident responses"

Interview outcome
Complete ___ 1
Incomplete DK ___ 2
Incomplete NR ___ 3
Incomplete REF ___ 4

Step 1 Assessment: Chronic Pain Assessment

Resident Name:_____ **Staff Interviewer:**_____

Date of Interview:____/____/____
mm dd yy

Check Response
DK=Don't Know NR=No Response or Nonsense Response REF=Refusal to answer question

Interviewer: "*I want to ask you some questions about pain***."**

1. *Do you have pain right now?* ___Yes ___No ___NR/DK/REF

1a. **IF YES**, ask: "*On a scale 1 to 10 with 0 meaning no pain and 10 being the worse pain you can imagine, how much pain are you having now?*" _____

2. *Does pain ever keep you from doing things you enjoy* (*e.g., social activities, walking, going to dining room for meals, knitting, bingo, going outside)?* ___Yes ___No ___DK/NR/REF

3. *Does pain ever keep you from sleeping at night?* ___Yes ___No ___DK/NR/REF

4. *Do you have pain every day?* ___Yes ___No ___DK/NR/REF

PROBABLE CHRONIC PAIN (*3 or more "yes" responses or "yes" to question 4*): Yes No

5. Would you like/prefer to take medication (pill, drug) for your pain? ___Yes ___No ___DK/NR/REF

The presence of probable chronic Pain is determined based on the resident's responses to questions 1 – 4. Probable chronic pain is present if the resident responds "yes" to 3 or more of the first four questions OR in response to question #4 alone (residents reports that he/she experiences pain daily). Presence or absence of probable chronic pain cannot be determined only if ALL 4 questions have DK/NR/REF answers. Question 5 is related to a resident's pain treatment preferences and is not included in scoring.

Interview outcome

Complete ___ *1*
Incomplete DK ___ *2*
Incomplete NR ___ *3*
Incomplete REF ___ *4*

Step 1 Assessment: Medical Record Information

RESIDENT'S NAME_____

RESIDENT IDENTIFICATION NUMBER _____

STAFF INITIALS ___ ___ ___

PART A. DEMOGRAPHIC INFORMATION

1. MEDICAL RECORD ABSTRACTION DATE ____/____/____
   mm dd yyyy
2. RESIDENT BIRTHDATE ____/____/____
   mm dd yyyy
3. ADMISSION DATE to SKILLED NURSING FACILITY/UNIT
   ____/____/____
   mm dd yyyy
4. SEX Male ____ Female ____
5. HEIGHT (inches) ____ inches
6. TUBE FEEDING No ____ Yes ____
   IF YES, is tube-feeding: Supplemented by Oral _____ Sole feeding method ____
   IF YES, Calories per cc _____ Cc per day ____
7. ORAL NUTRITIONAL SUPPLEMENT (e.g., Ensure, Resource) No ____ Yes ____
   IF YES, Calories per cc _____ Cc per day ____
8. SPECIAL DIET No (Regular) ____ Yes ____
   IF YES, Type of Diet (circle all the apply)
   No Added Salt (NAS) No Concentrated Sugar (NCS) Mechanical-Soft Pureed
   Small Portions Other *(specify):* _____
9. DENTURES No ____ Yes ____
10. DATE OF MOST RECENT ORAL/DENTAL EXAM ____/____/____
    mm dd yyyy

PART B. MEDICAL AND PSYCHIATRIC DIAGNOSES **Check ALL that Apply**

HIV – AIDS	____
CANCER	____
CHRONIC OBSTRUCTIVE PULMONARY DISEASE	____
CHRONIC RENAL FAILURE	____
CONGESTIVE HEART FAILURE	____
DEMENTIA	____
DEPRESSION	____
DIABETES	____
DYSPHAGIA	____
FAILURE TO THRIVE	____
GASTROINSTESTINAL DISORDERS	____
GI Bleeding	____
Diarrhea	____
Constipation	____
RECURRENT ASPIRATION PNEUMONIAS	____
RHEUMATOID ARTHRITIS	____
WEIGHT LOSS MALNUTRITION	____

PART C. ROUTINE MEDICATIONS with Appetite Suppressant Side Effects

Generic Name / Brand Name	**Check ALL that Apply**
AMLODIPINE / NORVASC	_____*
CONJUGATED ESTROGENS / PREMARIN	_____*
DIGOXIN / LANOXIN	_____*
ENALAPRIL MALEATE / VASOTEC	_____*
FAMOTIDINE / PEPCID	_____*
FENTANYL TRANSDERMAL SYSTEM / DURAGESIC	_____*
FUROSEMIDE / FUROSEMIDE	_____
IPRATROPIUM BROMIDE / ATROVENT	_____
LEVOTHYROXINE SODIUM / SYNTHROID / LEVOTHROID	_____
METFORMIN / GLUCOPHAGE	_____
NIFEDIPINE / PROCARDIA XL	_____*
NIZATIDINE / AXID	_____*
OMEPRAZOLE / PRILOSEC	_____*
PAROXETINE HCI / PAXIL	_____*
PHENYTOIN / DILANTIN	_____*
POTASSIUM REPLACEMENT / K-DUR	_____
RANITIDINE HCI / ZANTAC	_____*
RISPERIDONE / RISPERDAL	_____*
SERTRALINE HCI / ZOLOFT	_____*
WARFARIN / COUMADIN	_____

**May be Amenable to Substitution*

ROUTINE MEDICATIONS to Stimulate Appetite

Generic Name / Brand Name	**(Check ALL that Apply)**
CYPROHEPTADINE / PERI-ACTIN	_____
DRONABINOL	_____
MEGACE ACETATE	_____
MIRTAZEPINE / REMERON	_____
TESTOSTERONE (ANDRO-GEL OR INJECTIONS)	_____

NOTE: *These medications are not necessarily appropriate or recommended for use among nursing home residents. Please consult Primary Care Physician.*

PART D. RECENT LABORATORY VALUES RELEVANT TO NUTRITION

VALUE	*NORMAL RANGE*	*DATE OF MOST RECENT*	*NONE IN LAST MONTH*
BUN: _____mg/dL	(10-30)	_____/_____/_____ mm dd yyyy	_____
Cholesterol:_____mg/dL	(<200)	_____/_____/_____ mm dd yyyy	_____
Creatinine: _____mg/dL	(0.4-1.1)	_____/_____/_____ mm dd yyyy	_____
Serum Albumin: _____g/dL	(3.3-3.9)	_____/_____/_____ mm dd yyyy	_____
Serum Osmolality: _____osm	(270-310)	_____/_____/_____ mm dd yyyy	_____
Serum Sodium: _____mEq/L	(133-145)	_____/_____/_____ mm dd yyyy	_____
TSH: _____uIU/ml	(0.50-4.70)	_____/_____/_____ mm dd yyyy	_____
T4: _____ uIU/ml	(4.5-12.0)	_____/_____/_____ mm dd yyyy	_____

PART E. CURRENT WEIGHT AND WEIGHT CHANGE HISTORY

Date of Most Recent Weight: _____/_____/_____
mm dd yyyy

LATEST WEIGHT (pounds/date) _____ lbs.

WEIGHTS FOR 12 MONTHS PRIOR TO MOST RECENT WEIGHT OR ADMISSION

Date	Weight (pounds)
_____/_____/_____ mm dd yyyy	_____
_____/_____/_____ mm dd yyyy	_____
_____/_____/_____ mm dd yyyy	_____
_____/_____/_____ mm dd yyyy	_____
_____/_____/_____ mm dd yyyy	_____
_____/_____/_____ mm dd yyyy	_____
_____/_____/_____ mm dd yyyy	_____
_____/_____/_____ mm dd yyyy	_____
_____/_____/_____ mm dd yyyy	_____
_____/_____/_____ mm dd yyyy	_____
_____/_____/_____ mm dd yyyy	_____
_____/_____/_____ mm dd yyyy	_____

PART F. PHYSICAL AND COGNITIVE ABILITIES

EATING DEPENDENCY: (**in last 7 days**) _____ (0-4)

0=Independent (No help or staff oversight OR staff help/oversight provided only 1-2 times for resident to eat)

1= Supervision (Oversight, encouragement, or cueing provided 3 or more times OR supervision + physical assistance provided only 1-2 times)

2=Limited Assistance (Physical help in guided maneuvering to eat 3 or more times OR limited assistance + more help to eat provided only 1-2 times)

3=Extensive Assistance (full staff assistance provided 3 or more times for resident to eat)

4=Total Dependence (full staff assistance provided to resident for eating during entire seven day period)

COGNITIVE ABILITY: RECALL

Check all that Resident was Able to Accurately Recall (**in last 7 days**):

a. Current Season: ____
b. Location of Own Room: ____
c. Staff names and/or faces: ____
d. He/she is in a nursing home : ____

OR

e. None of the Above: ____

IF 2 OR MORE OF ITEMS a-d ARE CHECKED, PROCEED TO RESIDENT INTERVIEWS

GUIDELINES FOR ESTIMATING FOOD AND FLUID CONSUMPTION

To avoid errors and ensure the highest agreement between staff members, we recommend the following guidelines for calculating an estimate of total percentage consumed. Consider presenting these guidelines during in-service trainings on feeding assistance.

1. List each food and fluid item on the tray at the point of meal tray delivery and record resident consumption of each item at the point of meal tray pick-up using the bottom portion of the Mealtime Observational Protocol.
2. Use a continuous percentage scale, from 0% to 100%, for estimation instead of percentage categories, such as 0%, 25%, 50%, 75%, 100%, which usually result in overestimates of intake.
3. Each food and fluid item on the meal tray is counted equally as opposed to assigning differential values to different items (e.g., meat = 40%, salad = 20%), which results in error due to the complexity of the calculations.
4. Ideally, consumption of fluids should be recorded in ounces, in addition to percent consumed, to allow for an accurate measure of hydration status.
5. Oral nutritional supplements consumed during the meal should not count in the total percent consumed estimation, though the amount consumed (in ounces) of the supplement should be recorded separately to allow an estimate of total calories during meals by the licensed nurses and/or dietician staff. Supplements are intended to be given between meals. However, we recognize that some residents prefer supplements to the served meal. Staff should ensure that meal substitutions are also offered as an alternative to the served meal.

Step 1 and 4 Assessment: Guidelines for Accurate Weight Assessment

Date: _____/_____/_____ Facility: ________________________ Type of Facility Staff: Nurse Aide_____ Other:______________

Resident Name/Unit	Time of Weight	**Served Meals** (Circle all meals already served)	Scale Type	Scale Location	Scale Zeroed?	Clothes Worn	**Other Items Worn** if so, what?	Was incontinence care provided before Weighing?	**Scale Weight** (Record exact value - no rounding)	**Extra Items** (i.e. wheelchair, pad, weighing instrument etc) If so, what?	Weight of Extra Items	Supervisory Staff Total Weight	NH Staff Weight
		Breakfast Lunch Dinner	Chair Bed Standing	Resident's Room Communal Area	Y N	Night Clothes Day Clothes		Y N	lbs.		lbs.	lbs.	lbs.
		Breakfast Lunch Dinner	Chair Bed Standing	Resident's Room Communal Area	Y N	Night Clothes Day Clothes		Y N	lbs.		lbs.	lbs.	lbs.
		Breakfast Lunch Dinner	Chair Bed Standing	Resident's Room Communal Area	Y N	Night Clothes Day Clothes		Y N	lbs.		lbs.	lbs.	lbs.
		Breakfast Lunch Dinner	Chair Bed Standing	Resident's Room Communal Area	Y N	Night Clothes Day Clothes		Y N	lbs.		lbs.	lbs.	lbs.
		Breakfast Lunch Dinner	Chair Bed Standing	Resident's Room Communal Area	Y N	Night Clothes Day Clothes		Y N	lbs.		lbs.	lbs.	lbs.

Comments/Observations: Use back of sheet for comments.

Nursing home staff is required to weigh residents each month in order to track weight changes in residents over time. The Minimum Data Set criteria for weight loss: ≥5% in 30 days or 10% in 180 days. Staff should follow a standardized procedure when weighing residents in order to reduce error and increase accuracy.

Scale: The same scale or same type of scale should be used each month for the same resident. Scale should be calibrated and zeroed each time.

Staff Member:Schedule resident weighings in consideration of the staff workload. Consider scheduling across all days of the week. Note that bed-bound or otherwise immobile residents are at higher risk for erroneous data.

Resident: Resident should wear clean bedclothes and dry undergarments. Extra items should not be worn or carried. Weighing should be done prior to meal service.

Weighing Procedure: Ideally, residents should be weighed in the morning before breakfast, following incontinence care, while they remain in their bedclothes using the same scale, or minimally the same type of scale, and ensuring episode. The scale is calibrated to zero prior to each weighing

Step 2 Assessment: Mealtime Feeding Assistance Protocol

INSTRUCTIONS: Implement the feeding assistance protocol for two days (total of six meals) to determine resident's response to feeding assistance during meals.

Resident Name:_____

Date: ____/____/____

MEAL: _____Breakfast _____Lunch _____Dinner **# IN GROUP**: _____1 _____2 _____3

Time at Beginning of Feeding Assistance Period: ____:____ am pm

Protocol: Take resident to a common location to allow feeding assistance to be provided to multiple residents simultaneously (groups of 3). Begin by offering the resident the lowest level of assistance (Level 1: Social Interaction and/or Level 2: Nonverbal Prompts). If the resident does not begin eating on his/her own after 5 minutes, proceed to the next level (Level 3: Verbal Prompts) AND continue with the previous levels (Social Interaction and Nonverbal Prompts). Again, if the resident does not eat on his/her own after 5 minutes, then proceed to physical assistance (Level 4: guidance; Level 5: full), but continue talking to the resident in the context of physical assistance (e.g., tell the resident what food or fluid item you are offering from the tray; ask, "how does that taste?" or "would you like another bite of that?").

Prompt the resident to eat until he/she has refused verbally (e.g., "No, I don't want anymore", "I'm not hungry", "Go away") or non-verbally (e.g., turns head away, refuses to open mouth, spits food out) a total of 3 times. Offer alternative food or fluid items (substitute tray from the kitchen) or second helpings of preferred items to encourage additional intake.

Maximum Level of Assistance Provided during Meal: _____1 _____2 _____3 _____4 _____5
Level 1: Social Interaction (e.g., "How are you feeling today?" "It's good to see you.")
Level 2: Nonverbal Prompts (e.g. tray set-up, placement of food and fluid items in easy reach)
Level 3: Verbal Prompts (e.g., "Try a bite of your chicken." "How about some soup?")
Level 4: Physical Guidance (guide resident's hand to fork, help resident to hold cup or utensil)
Level 5: Full Physical Assistance (staff feeds resident)

Resident Refused Food: _____Yes _____No

Resident Refused Staff Assistance: _____Yes _____No

Resident Complained about Food (items served, temperature, taste): _____Yes _____No

Resident Showed Evidence of Swallowing Problems (spitting, coughing, drooling): _____Yes _____No

Time at End of Assistance Period (when meal is complete)**:** ____:____ am pm

Total % Consumed at End of Meal:_____%

Nutritional Supplement(s) Given? Yes No
IF YES, Type of Supplement Given: _____
Amount Consumed:_____ oz / cc
NOTE: Do not include supplement as part of total percent consumed above.

Step 2 Assessment: Between Meal Snack Protocol

INSTRUCTIONS: Implement the snack protocol for two days (total of six snacks) to determine resident's response to snacks between meals. Ideally, snacks should be offered three times daily between meals at approximately 10am, 2pm, and 7pm. Total percent consumed during meals (breakfast, lunch, and dinner) should be documented on the same 2 days using the Assessment: Mealtime Observational Protocol.

Resident Name:_____

Date: ____/____/____

SNACK: _____morning _____afternoon _____evening **# IN GROUP: _____**

Time at Beginning of Snack Period: ____:**____** am pm

Protocol: Take resident to a common location to allow snacks to be provided to multiple residents simultaneously (groups of 4 or more). Begin by offering the resident the lowest level of assistance (Level 1: Social Interaction and/or Level 2: Nonverbal Prompts). If the resident does not begin eating on his/her own after 5 minutes, proceed to the next level (Level 3: Verbal Prompts) AND continue with the previous levels (Social Interaction and Nonverbal Prompts). Again, if the resident does not eat on his/her own after 5 minutes, then proceed to physical assistance (Level 4: guidance; Level 5: full), but continue talking to the resident in the context of physical assistance (e.g., tell the resident what food or fluid item you are offering from the tray; ask, "How does that taste?" or, "Would you like another bite of that?").

Prompt the resident to eat until he/she has refused verbally (e.g., "No, I don't want anymore", "I'm not hungry", "Go away") or non-verbally (e.g., turns head away, refuses to open mouth, spits food out) a total of 3 times. Offer alternative food or fluid items (substitute tray from the kitchen) or second helpings of preferred items to encourage additional intake.

Maximum Level of Assistance Provided during Snack: _____1 _____2 _____3 _____4 _____5
Level 1: Social Interaction (e.g., "How are you feeling today?" "It's good to see you.")
Level 2: Nonverbal Prompts (e.g. placement of food and fluid items in easy reach)
Level 3: Verbal Prompts (e.g., "Try a bite of your yogurt." "How about some crackers?")
Level 4: Physical Guidance (guide resident's hand to spoon, help resident to hold cup or utensil)
Level 5: Full Physical Assistance (staff feeds resident)

Resident Refused Snack: _____Yes **_____**No

Resident Refused Staff Assistance: _____Yes **_____**No
Resident Complained about Snack (items served, taste): _____Yes **_____**No

Resident Showed Evidence of Swallowing Problems (spitting, coughing, drooling): _____Yes **_____**No

Time at End of Snack Period (when snack is complete)**: ____**:**____** am pm

Total Amount Consumed at End of Snack:

Food Items	# of Servings	% Consumed	Fluid/ Supplement	Amt (oz)	# of Servings	Total Oz

Step 4 Assessment: Quality Improvement for Meals

Date: _____/____/____ Staff Observer: _____

Meal: ____Breakfast ____Lunch ____Dinner

How many total residents are eating in the dining room? _____

Identify 5-10 residents who should receive feeding assistance. Observe them throughout the entire meal and record information below.

	1	2	3	4		5		6	7	8	
Resident Name	Physical Assist*	Verbal Instruction*	Social Stimula-tion*	Supplement Yes	Consumed	Assist Time >5 min	<5 min	Total % Eaten	Medical Record Total % Eaten	Medical Record Assistance Provided	Comments
					oz						
					oz						
					oz						
					oz						
					oz						
					oz						
					oz						
					oz						
					oz						
					oz						
					oz						

QUALITY INDICATORS: See attachment for scoring rules, rationale, and training/service goals.

1. Total number of residents observed during meal. _____
2. How many residents ate less than 50% of the meal (column 6)? _____

2a. Of those who ate less than 50% (column 6), how many received more than 5 minutes of assistance from staff (column 5: >5)? _____

2b. Of those who ate less than 50% (column 6), how many had documentation of less than 60% eaten (column 7)? _____

3. How many residents received physical assistance (column 1)? _____

3a. Of those who received physical assistance (column 1), how many also received verbal instruction (column 2)? _____

4. How many residents received at least one episode of social stimulation (column 3)? _____
5. How many residents have medical record documentation that assistance was provided (column 8)? _____

5a. Of those who have documentation of assistance (column 8), how many were observed to receive assistance (column 5: >5)? _____

* Check if provided at least once during meal. Observational codes and instructions:

Physical Assistance/Physical Guidance	(e.g., Aide feeds resident or aide guides resident to feed self)
Verbal Instruction	(e.g., "Pick up your spoon and take a bite"; "Swallow")
Social Stimulation	(e.g., "Are you hungry?" "How are you today?" "How are you feeling?" "It's good to see you.")

EVALUATE MEALTIME CARE WITH THESE SIX QUALITY INDICATORS

We present below the rules and rationale that guide the scoring of six QIs related to feeding assistance, all of them based on our previous work. The scoring rule for each QI reflects a liberal approach that maximizes the opportunity to "pass."

1. Proportion of residents eating in the dining room.

Score: No rule for this one; however…
Rationale: All residents should be encouraged to eat all of their meals in the dining room for several reasons. First, most residents say they prefer to eat their meals in the dining room. Second, presence in the dining room allows the staff to provide time-efficient feeding assistance to small groups of residents. And third, dining in a common room promotes social interaction among residents and staff, which in turn stimulates food and fluid intake.
Service/Training Goal: Ideally, all residents, excluding those who are bed-bound, tube-fed, or on hospice or palliative care, should eat all of their meals in the dining room. This includes breakfast and dinner, which are often served in residents' rooms. Supervisors should work with staff to identify ways to increase the number of residents who eat in the dining room, including using non-traditional staff to help transport residents and offering two seatings per meal period.

2. Staff ability to provide assistance to high-risk residents.

Scoring Rule: Score as "fail" residents who eat less than 50% of their food and receive less then five minutes of staff assistance during the meal.
Rationale: All residents with low intake who are responsive to the mealtime intervention should receive feeding assistance for 30 to 45 minutes in small groups of three from one staff member. Thus, if any observed resident receives less than five minutes of assistance, then feeding assistance is not being provided according to the protocol. Inadequate feeding assistance is particularly detrimental to residents who consistently eat less than 50% of each meal and thus are at especially high risk for weight loss and undernutrition.
Service/Training Goal: All nurse aides should provide adequate feeding assistance to all nutritionally at-risk residents.

3. Staff ability to accurately document clinically significant low food and fluid intake among residents.

Scoring Rule: Score as "fail" residents who eat less than 50% of their meal based on the supervisor's observations, but who are reported by nurse aides to have consumed 60% or more.
Rationale: While residents who consistently eat less than 75% of most meals meet the MDS criterion for low intake, recent evidence suggests that those who consistently eat less than 50% are at a significantly higher risk for weight loss. Thus, if staff document that a resident consumed more than 60% of a meal when, in fact, the resident ate less than 50%, they are likely failing to identify a clinically significant intake problem for that resident.
Service/Training Goal: All nurse aides should be trained to use the same guidelines to calculate residents' food and fluid intake. Note: before and after photographs of residents' meal trays serve as a helpful training tool for teaching staff how to conduct intake estimates. You don't need many photo-pairs for training; just a few will do.

4. Staff ability to provide verbal instruction to residents who receive physical assistance at mealtimes.

Scoring Rule: Score as "fail" any resident who receives physical assistance from staff during the meal without also receiving at least one verbal prompt directed toward eating (e.g., "Why don't you try your soup?"). As a practical matter, this QI can be scored only for residents who eat meals in the dining room.
Rationale: Studies show that verbal prompting encourages residents to eat independently and to eat more. There is growing consensus that verbal prompting coupled with physical assistance helps define optimal feeding assistance. Moreover, recent research indicates that nursing home staff often provide excessive physical assistance to residents who could otherwise eat independently with just verbal prompting or encouragement. Even if a resident requires full physical assistance to eat, staff should minimally provide verbal notification ("let's try a bite of soup next, okay?"; "I'm going to give you a bite of soup next.").
Service/Training Goal: Ideally, all residents who receive physical assistance should also receive verbal instruction or notification from staff. Failure to provide verbal instruction or notification may reflect a language barrier or a need for staff education. Nurse aides, for example, may inappropriately assume that it is a waste of time to provide verbal instruction to residents with dementia.

5. Staff ability to provide social stimulation to all residents during meals.

Score: Score as "fail" any resident who does not receive at least one episode of social stimulation from staff during the meal.
Rationale: Studies show that social stimulation improves food and fluid intake; thus, staff should socially interact with all residents throughout the meal. Social interaction differs from verbal instruction in that it consists of simple statements that are not specifically directed toward eating, for example greeting a resident by name: "Hello, Mrs. Smith, it's good to see you today." As a practical matter, this QI can be scored only for residents who eat meals in the dining room.
Service/Training Goal: Ideally, all residents should receive at least one episode of social stimulation from staff during meals.

6. Staff ability to accurately document feeding assistance.

Score: Compare how nurse aides describe the provision of feeding assistance in residents' charts with the supervisor's recorded observations.
Rationale: This QI enables supervisors to evaluate the accuracy of medical record documentation of feeding assistance and identify strategies to prevent documentation errors.
Service/Training Goal: A discrepancy between how nurse aides and supervisors document both the type and duration of feeding assistance may point to the need for a standardized form for charting care delivery that is more specific than a simple checklist or documentation that feeding assistance was provided "as needed", neither of which are informative from a quality improvement perspective. Staff may also want to document reasons for not providing assistance (e.g., resident refused the meal or assistance).
Double-Duty Assessments: The six quality indicators described here are just a few examples of the QIs you can generate using the information you collect from this form. You can modify the QIs by altering definitions; for example, by re-defining the amount of feeding assistance deemed "acceptable" as 10 minutes, not five. You can also create brand new QIs; for example, you could identify the proportion of residents who are given an oral nutritional supplement but do not receive more than 15 minutes of assistance. Improvement efforts, in this case, would focus on making sure all these residents receive 15 or more minutes of feeding assistance prior to being given a supplement.

Step 4 Assessment: Quality Improvement Between Meal Snacks

DATE ___ / ___ / ____ SNACK TIME: _____ ACTIVITY: _____

RESIDENT NAME	TIME	Food Items Given	TOTAL % Eaten	Fluid Items Given	Amount Consumed	Type of ASSIST	Amount of Assist	
							LESS 1 min	MORE 1 min
1					oz			
2					oz			
3					oz			
4					oz			
5					oz			
6					oz			
7					oz			
8					oz			
9					oz			
10					oz			

QUALITY INDICATORS:

Use the information collected above to score these quality indicators and identify areas for improvement.

1. How many targeted residents were offered something to eat (food items given)?_____ Ideally, all should be offered food.

2. How many targeted residents were offered something to drink (fluid items given)?_____ Ideally, all should be offered fluids.

3. How many targeted residents received at least one minute or more of individual staff attention?_____ Ideally, all should receive >1 minute of assistance.

3a. Of those who received staff attention (>1 minute), how many received verbal cueing or social stimulation?_____. Ideally, all should.

4. How many targeted residents have medical record documentation of snack consumption? _____ Ideally, all should have such documentation.

Compare medical record documentation of snack consumption to above data (food and fluid items given and consumed).

5. How many have documentation that matches observation for percent of food consumed (food items given and consumed)? _____ All should.

6. How many have documentation that matches observation for fluid consumed (fluid items given and ounces consumed)? _____ All should.

*Codes for Type of Assist. Record all that apply.
None = N (no assistance provided) **Physical** = P (e.g., aide feeds resident) **Physical Guidance** = PG (e.g., aide guides resident to feed self)
Verbal = V (e.g., "Pick up your spoon and take a bite"; "Swallow") **Social Stimulation** = SI (e.g., "How are you today?"; "How are you feeling?")

Weight Loss Prevention Quiz

TRUE OR FALSE

1. ____ Studies have shown that nursing home staff consistently overestimate by 15% or more the amount of food and fluid consumed by residents at mealtimes.

2. ____ Residents who undereat are also often at high risk for dehydration.

3. ____ Residents tend to eat more in their own rooms as opposed to the dining room.

4. ____ It is best to not talk to nutritionally at-risk residents during mealtimes because conversation might distract them from eating.

5. ____ A resident who can eat independently but eats slowly should be fed by nursing home staff.

6. ____ Oral nutritional supplements should be offered between meals instead of during meals.

7. ____ Residents at risk of weight loss will always eat more at mealtimes when offered more feeding assistance.

8. ____ Offering residents a choice among snacks can increase consumption, especially among cognitively intact residents.

9. ____ For best results, nursing home supervisors should periodically monitor meals in person to evaluate the facility's quality of feeding assistance.

10. ____ Studies show that, on average, nutritionally at-risk residents get about only 100 calories a day from between-meal snacks and fluids.

Answers: 1. T; 2. T; 3. F; 4. F; 5. F; 6. T; 7. F; 8. T; 9. T; 10. T