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.

REFERENCES

1. Simmons SF, Garcia ET, Cadogan MP, Al-Samarrai NR, Levy-Storms LF, Osterweil D, and Schnelle JF. The Minimum Data Set Weight Loss Quality Indicator: Does it Reflect Differences in Care Processes Related to Weight Loss? *Journal of the American Geriatrics Society;* accepted for publication.
2. Simmons SF, Schnelle JF. Individualized Feeding Assistance Care for Nursing Home Residents: Staffing Requirements to Implement Two Interventions. *Journal of Gerontology: Medical Sciences,* accepted for publication.
3. Simmons SF, Osterweil D, and Schnelle JF. (2001). Improving Food Intake in Nursing Home Residents with Feeding Assistance: A Staffing Analysis. *Journal of Gerontology: Medical Sciences;* Vol. 56A, No. 12, M790-M794.
4. Simmons SF, Keeler E, Xiaohui ZM, Hickey KA, Sato HW, Schnelle JF. (2008). Prevention of unintentional weight loss in nursing home residents: A controlled trial of feeding assistance. *Journal of the American Geriatrics Society*, 56:1466-1473.
5. Simmons SF, Alessi C, Schnelle JF. (2001). An Intervention to Increase Fluid Intake in Nursing Home Residents: Prompting and Preference Compliance. *Journal of the American Geriatrics Society;* 49:926-933.

6. Lange-Alberts ME, Shott S. (1994). Nutritional Intake: Use of Touch and Verbal Cuing. *Journal of Gerontological Nursing;* 2:36-40.
7. Musson ND, Kincaid J, Ryan P, et al. (1990). Nature, Nurture, Nutrition: Interdisciplinary Programs to Address the Prevention of Malnutritiona and Dehydration. *Dysphagia*; 5:96-101.
8. Van Ort S, Philips LR. (1995). Nursing Interventions to Promote Functional Feeding. *Journal Gerontological Nursing* ; 10:6-14.
9. Simmons SF, Peterson E, You C. The accuracy of monthly weight assessments in nursing homes: Implications for the identification of weight loss. *Journal of Nutrition, Health & Aging* (in press).
10. Simmons SF, Patel AV. (2006). Nursing home staff delivery of oral liquid nutritional supplements to residents at risk for unintentional weight loss. Journal of the American Geriatrics Society, 54(9):1372-1376.
11. Kayser-Jones J, et.al. (1998). A Prospective Study of the Use of Liquid Oral Dietary Supplements in Nursing Homes. *Journal of the American Geriatrics Society;* 46:1378-1386.
12. Johnson LE, Dooley PA, Gleick JB. (1993). Oral Nutrtional Supplement use in Elderly Nursing Home Patients. *Journal of the American Geriatrics Society*; 41;947-952.
13. Simmons SF, Zhuo X, Keeler E. Cost-effectiveness of two nutrition interventions in nursing home residents: A randomized, controlled trial. *Journal of the American Geriatrics Society* (in press).
14. Simmons SF, Lam HY, Rao G, and Schnelle JF. (2003). Family Members' Preferences for Nutrition Interventions to Improve Nursing Home Residents' Oral Food and Fluid Intake. *Journal of the American Geriatrics Society;* 51:69-74.
15. Young KWH, Binns MA, Greenwood CE, (2001). Meal Delivery Practices Do Not Meet the Needs of Alzheimer's Patients with Increased Cognitive and Behavioral Difficulties in a Long-Term Care Facility. *Journal of Gerontology: Medical Sciences;* 56A:M656-M661.