



Food for thought

Preventing/treating malnutrition and dehydration

MALNUTRITION, DEHYDRATION, AND WEIGHT loss in nursing homes constitute one of the largest, silent epidemics in this country. They may result not only in readmission to the acute hospital—a stressful event for frail elders—but also contribute to a decreased quality of life, morbidity, and mortality.

Studies using a variety of measurements and performed during the past five to 10 years on different nursing home subgroups have shown that from 35 to 85 percent of U.S. nursing home residents are malnourished.^{1,2} Some 30 to 50 percent are substandard in body weight. Specific components of The Nursing Home Reform Act of 1987 (NHRA) address the prevention of both malnutrition and dehydration—these include provisions for resident assessment, individualized care planning, physician oversight, standards for sufficient nurse staffing, and the provision of quality of life, care, and service. This law mandates that facilities meet residents' nutrition and hydration needs. Yet the level of malnutrition and dehydration in some American nursing homes is similar to that found in many poverty-stricken developing countries where inadequate food intake is compounded by repeated infections.^{3,4}

The consequences of these conditions for elderly nursing

FEEDING FRENZY:
At many nursing homes, staffing shortages mean that ideal CNA-to-residents ratios are not the norm.

home residents are potentially serious. Under-nutrition is associated with infections (including urinary tract infections and pneumonia), pressure ulcers, anemia, hypotension, confusion and impaired cognition, decreased wound healing, and hip fractures.⁵ Undernourished residents become weak, fatigued, bedridden, apathetic, and depressed. When hospitalized for an acute illness, malnourished or dehydrated residents suffer increased morbidity and require longer lengths of stay. Compared with well-nourished hospitalized nursing-home residents, they have a fivefold increase in mortality in the hospital.

Several risk factors contribute to the occurrence of malnutrition and dehydration. They include effects of multiple underlying chronic conditions, the side effects of the treatment of these conditions, and structural factors within the nursing home setting.

Malnutrition, defined as poor nutrition resulting from an insufficient or poorly balanced diet, defective digestion, or defective assimilation of food,⁶ a potentially serious and frequently undetected problem, is often avoidable.^{7,9}

Dehydration, defined as a rapid weight loss of greater than 3 percent of body weight, can result from increased fluid losses due to illness (diarrhea, infections, fever), the effects of medications (diuretics), or decreased fluid intake. Physiological changes that occur as people age (decreased ability of the kidney to concentrate urine and decreased thirst sensation) may also contribute to dehydration.¹⁰

Dehydration is the most common fluid and electrolyte disorder of frail elders, both in long term care settings and in the community.¹¹ Data from the 1996 National Hospital Discharge Survey show that 208,000 patients 65 years of age and older were discharged from short-stay hospitals with a primary diagnosis of dehydration. Since the average length of stay for people 65 and older was 6.5 days in 1996, and the average cost of care per day was \$1,006, the cost of hospitalization for dehydration in that year was \$1.36 billion.¹²

Changes in functional and cognitive status (mobility and dementia) also put nursing home residents at risk for dehydration. Sixty to 70 percent of nursing home residents are cognitively impaired¹³ and many of these residents cannot feed themselves. It takes 30 to 60 minutes to feed a person safely and sufficiently, and nursing homes often don't have sufficient staff for the task. One study found that the residents who needed the most assistance remained malnourished even though they were served a diet higher in calories than was a group of non-malnourished residents.¹⁴

Where some of the problems lie

Poor oral health contributes to an inadequate intake of nutrients. At least 80 percent of nursing home residents have some tooth loss; 50 percent of those who wear dentures need replacement or relining of their dentures, and about one-third have mucosal lesions.¹⁵ One study found untreated dental decay in 70 percent of residents.¹⁶ In another, conducted in two proprietary nursing homes and published in 1998, Kayser-Jones found that 51 percent of the residents had few or no teeth and poorly fitting or no dentures.¹⁷ Only three residents had dentures that fit properly; 16 percent had dental caries, 15 percent reported oral pain, and 7 percent had oral lesions.

An estimated 40 to 60 percent of institutionalized elders have identifiable signs and symptoms of dysphagia (or

swallowing problems).⁸ In a 1988 study of 82 nursing home residents that investigated the social, cultural, clinical, and environmental factors that influenced nutritional intake, Kayser-Jones found that 45 (55 percent) had some degree of dysphagia, ranging from mild to profound. Only 10 (22 percent) had been referred to a speech pathologist for an evaluation. She concluded that unrecognized and unmanaged dysphagia may lead to malnutrition, dehydration, aspiration pneumonia, and asphyxiation.

The impact of staffing

Structural factors within the nursing home setting that contribute to malnutrition and dehydration include lack of individualized care, inadequate staffing, high nurse aide turnover, and lack of professional supervision of aides. Nursing homes are often poorly staffed. Compounding the inadequate numbers of CNAs is a 93-percent-per-year staff-turnover rate.

Certified nursing aides (CNAs) typically assist seven to nine residents with eating and drinking during the daytime, and as many as 12 to 15 residents during the evening meal. This contrasts with the ideal of one CNA for every two to three residents who require eating assistance.^{18,19} Residents are

fed quickly or forcefully and, in the most extreme cases, sometimes not fed at all.

While eating habits are highly individualized, residents in most homes do not have a choice of foods; cultural and ethnic food preferences are often ignored. A newly hired CNA may not know how to care for a resident already at risk for malnutrition and dehydration. The lack of supervisory licensed nurses, as well as their lack of nutritional knowledge, leaves CNAs to do the best they can. In one study, when nutritional supplements were ordered in response to weight loss, only 2 percent of the residents consumed the supplements in accordance with the physician's order.²⁰

Tough solutions for a tough problem

Four issues are key to the prevention and treatment of malnutrition and dehydration: inadequate staffing, poor environment, insufficient data collection, and lack of enforcement. Finding solutions that address these issues will require understanding and cooperation from all involved—residents and their families, nursing home directors, geriatricians and nursing home staff, and government regulators. Specific approaches include:

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- Instituting mealtime or 24-hour staffing standards via an amendment to the Nursing Home Reform Act, or through regulation that further defines the operative phrase in the law, "Sufficient nursing and related services to attain or maintain the highest practicable level of physical, mental, and psychosocial well-being of each resident."

- Utilizing all nursing home personnel to assist at mealtime; cross-training of administrative and other indirect-care staff as CNAs; supporting and training family members to help residents to eat; training volunteers in

tray set-up and mealtime socialization; and further exploring the development of another category of worker at mealtime.

- Mandating the training of nursing assistants in the care of those with cognitive impairment. The Institute of Medicine (IOM) study on the adequacy of nurse staffing also recommends increased training.

- Creating an environment conducive to eating, including the provision of home-like surroundings at mealtime, smaller social neighborhoods, attractive food, choice in food, attention to ethnically sensitive/appropriate food choices, and making foods available 24 hours a day.

- Accompanying staffing changes with a requirement for more detailed collection and application of staffing data so as to determine the relationship over time between staffing and the prevention of malnutrition and dehydration in nursing home residents.



A NICE PLACE TO EAT?: Put a little atmosphere in your dining rooms.

- Adding the Body Mass Index (BMI) nutritional standard to the required standard of a 5 percent weight loss in a month or 10 percent weight loss in six months as a trigger for evaluating nutritional status.

- Reimbursement supporting both professional and paraprofessional nurse staffing. Government should hold the industry accountable for the expenditure of funds targeted to staffing. HCFA reimbursement incentives should also recognize the use of speech therapists in diagnosing dysphagia and increase the use of dietitians to reduce the length of

stay for hospitalized residents. Reimbursement for dental care may also be important in the prevention of malnutrition.

Today, there are about 17,000 nursing homes with 1.8 million beds in the United States (the bed capacity is greater than that of acute hospitals) and about 1.5 million Americans over age 65 reside in them at any one time. It is estimated that 43 percent of all Americans who turned 65 in 1990 will spend some time in a nursing home during their lifetime.²¹ As more people live longer, and as more elderly people live to 85 years of age and older, the incidence of malnutrition and dehydration is likely to become even greater and more serious.

The knowledge that malnutrition and dehydration are common in nursing homes is 20 to 30 years old, but few investigators have examined eating problems and the process of feeding residents. We know little about why some residents

stop eating, why they do not or cannot feed themselves, and why they sometimes refuse to be fed by others. The feeding of residents with multiple pathologies and functional and cognitive disabilities is a complex, challenging, and time-consuming endeavor. We hypothesize that most cases of malnutrition

and dehydration can be prevented or reversed, if they occur, with the use of an interdisciplinary approach. Physicians, nurses, speech pathologists, dietitians, dentists, administrative nursing home personnel, and CNAs must collaborate to resolve these problems. [CLTC](#)

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