Strengthening Nurses' Knowledge and Patient Outcomes

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Collaborative Nutrition Initiatives Promote Enhanced Patient Outcomes

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LEARNING OBJECTIVES

After reading this article the reader will be able to:

- Identify three disease complications associated with malnutrition
- Identify Oral Nutritional Supplements (ONS) as an effective strategy for improving nutritional status
- List three objectives/benefits of the MOST Program

As healthcare providers, we have a professional imperative to deliver patient-centered care informed by the current best evidence. Why, then, do we ignore decision support tools, knowledge management systems, and evidence-based clinical practice guidelines that all warn of the negative impact of malnutrition? A recent Institute of Medicine report,[1] "Best Care at Lower Cost: The Path to Continuously Learning Health Care in America," brings attention to three major forces driving change: the rising complexity of modern health care, unsustainable cost increases, and outcomes below the health care system's potential. The one force we can control as nurses is elevating outcomes to reflect our delivery of high quality, patient-centered, evidence-based nutritional care.

Quality of services provided is now a major determinant of payments to hospitals. As discussed in detail in the April 2013 issue of NursingCurrents®,[2] some notable changes by the Centers for Medicare and Medicaid Services (CMS) involve eliminating reimbursement for Hospital Acquired Conditions (HACs), such as Stage III and IV pressure ulcers, falls resulting in serious injury, catheter-associated infections, poor

blood glucose control, and select surgical site infections.[3] Another important CMS change includes incentive payments to hospitals receiving Medicare payments for demonstrating quality measures aimed at improving outcomes and reducing readmissions for patients with conditions such as heart failure, pneumonia, and certain surgical procedures. Furthermore, patients' perceptions of their experience and treatment in hospitals play a role in a hospital's payment for services rendered.[4]

Implementing these changes will depend greatly on registered nurses and dietitians, who play key roles in achieving desired patient outcomes.

The presence of malnutrition among hospitalized patients contributes to HACs, such as infections, pressure ulcers, injury from falls, and other important patient outcomes, such as impaired wound healing after surgery. The prevalence of malnutrition among hospitalized adults ranges from 30% to 55%;[5] this wide range is due to the diverse patient populations and definitions of malnutrition used in clinical studies. Even more troubling are reports that malnutrition is unrecognized for up to half of these patients and that the nutritional status can decline during hospitalization for as many as 69% of patients.[6,7]

Well-designed research studies in homogeneous populations using consensus-based definitions are needed to validate the role of malnutrition in increased morbidity and mortality, decreased function and quality of life, longer hospital stay, and higher healthcare costs.[8-13] Pending these empirical data, nurses must rise to the challenge of providing innovative, science-driven nutritional care that improves health outcomes, given that nourishment is one of the most basic needs of all hospitalized patients.

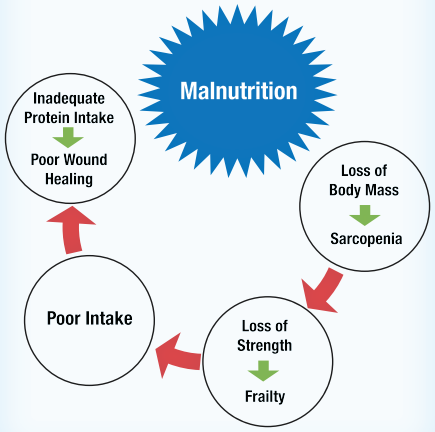
Recognizing Malnutrition in the Hospitalized Adult

Jensen et al define malnutrition as a "decline in lean body mass with the potential for functional impairment."[8] The clinical and economic ramifications of malnutrition present serious challenges to health care professionals and hospitals. Both acutely ill and critically ill patients experience a rapid decline in protein stores due to inflammation, hypermetabolism, or hypercatabolism and this may negatively impact their response to nutrition intervention leading to delayed healing and recovery. The recent consensus statement on malnutrition categorizes this type of malnutrition as chronic disease-related malnutrition or acute disease or injury-related malnutrition, both of which suggest an etiology of organ failure or inflammation.[14]

The surgical patient will have unique healing challenges in the face of malnutrition (Fig. 1). It is believed that providing sufficient protein for healing is the fourth principle of healing. Protein is essential for wound repair and regeneration. Without essential amino acids, the phases of wound healing, specifically, angiogenesis, fibroblast proliferation, collagen synthesis, and scar remodeling, will not occur. The high metabolic activity in any wound bed demands adequate amounts of proteins, fats, and carbohydrates to support new cell growth with growth factors and other nutrients, as well as immune cells to protect the wound from infection.[15]

But perhaps those facing the greatest challenges to healing and recovery are the elderly acutely ill patients who have underlying contributors to malnutrition such as chronic disease, polypharmacy, taste/appetite changes, and lack of interest or ability to prepare food. The elderly are also more susceptible to sarcopenia, a syndrome characterized by low muscle mass and progressive loss of skeletal muscle and strength, with a risk for adverse outcomes such as physical disability, poor quality of life, and death.[16] In one study of 432 acutely ill older patients, those who were diagnosed with sarcopenia (55%) were more likely to be readmitted to the hospital in the 6 months following discharge than those without sarcopenia (32%).[17] With prompt recognition of sarcopenia and related syndromes of malnutrition, all patients can receive timely intervention that reduces the risk for delayed wound healing, wound infection, deconditioning, prolonged hospital stay, or readmission within 30 days for poor health outcomes.

Figure 1. The Cycle of Malnutrition



International and U.S.-based research has revealed key issues related to malnutrition in the hospital setting: there is a lack of early risk identification, intervention, and attention to treatment outcomes[5,18,19] Although accrediting agencies, such as The Joint Commission, have directed hospitals to conduct nutrition screening and implement interventions that will improve health outcomes of malnourished patients,[5] screening tools are not universal. One strategy recommended by the IOM Roundtable to integrate key clinical findings into care decisions is for clinicians to adopt tools that deliver reliable, useful clinical knowledge to the point of care, and for organizations to adopt incentives that encourage the use of such tools.[1] The Malnutrition Screening Tool (MST) is a validated tool with only two questions, so it is easy for nurses to follow and has proven efficacy in the hospital setting.[20]

In 2009, The Academy of Nutrition and Dietetics and American Society of Parenteral and Enteral Nutrition (ASPEN) collaborated to identify and standardize characteristics that can be used to diagnose malnutrition.[14] Because no single physiologic parameter can sufficiently diagnose malnutrition, the identification of two or more of six characteristics is recommended to differentiate between severe and nonsevere malnutrition.[14] Clinicians can apply these characteristics to distinguish between malnutrition in the context of acute illness or injury, chronic illness, and social or environmental circumstances (Table 1).

Delivering High-Quality Nutritional Care

Quality of care can be defined as the degree to which accepted evidence-based practices are used in the treatment of diseases and conditions. ASPEN's 2010 update of Standards for Nutrition Support for Adult Hospitalized Patients defines Standards as a "benchmark representing a range of performance of competent care that should be provided to ensure safe and efficacious nutrition care."[21] The Standards define nutrition screening as "a process to identify an individual who is malnourished or who is at risk for malnutrition to determine if a detailed nutrition assessment is indicated."[21] Just as in The Joint Commission manual PC-010203, EP-7,[22] the Standards also specify that all patients must undergo a nutritional screening within 24 hours of hospital admission.[5] Patients identified as nutritionally at risk undergo a full nutritional assessment, allowing the dietitian to determine baseline nutrition parameters, nutritional risk factors, patient needs, and other indicators for subsequent oral nutritional supplementation (ONS). Together, these data can be used to determine the degree of patient malnutrition and appropriate goals for ONS.

Malnutrition, along with impaired mobility and care dependency, was found to be a risk factor that was predictive of falling, thus emphasizing the importance of early identification and management of poor nutritional status as an effective strategy for fall prevention.[23] Malnutrition is also an independent risk factor for hospital-acquired infections among inpatients.[24] There are approximately 2 million hospital-acquired infections in the U.S. each year at an estimated cost of $5 – $10 billion.[25] Schneider et al[24] studied 1,637 patients hospitalized in a university hospital in France to determine the prevalence of nosocomial infections and risk factors. The prevalence of nosocomial infections in all patients studied was 8.7%; in adequately nourished patients the prevalence was 4.4%, 7.6% in moderately malnourished patients, and 14.6% in severely malnourished patients. Data are accumulating rapidly demonstrating the links between malnutrition, weight loss, and adverse events such as falls, hospital-acquired infections, and postoperative complications. It is only a matter of time before hospital-associated malnutrition becomes a non-reimbursable, unacceptable adverse event (i.e., HAC)

Table 1. Six characteristics of malnutrition that the clinician can use to support a diagnosis of malnutrition.*

	Malnutrition: Acute Illness or Injury				**Malnutrition: Chronic Illness**				**Malnutrition: Social or Environmental**			
	Moderate		**Severe**		**Moderate)**		**Severe**		**Moderate)**		**Severe**	
1) Insufficient energy intake	< 75% of estimated energy requirement > 7 days		< 50% of estimated energy requirement ≥ 5 days		< 75% of estimated energy requirement for ≥ 1 month		< 75% of estimated energy requirement for ≥ 1 month		< 75% estimated energy requirement for ≥ 3 months		≤ 50% of estimated energy requirement for ≥ 1 month	
2) Interpretation of weight loss	% 1-2 5 7.5	Time 1 wk 1 mo 3 mos	% > 2 > 5 > 7.5	Time 1 wk 1 mo 3 mos	% 5 7.5 19 20	Time 1 mo 3 mo 6 mo 1 yr	% > 5 > 7.5 > 10 > 20	Time 1 mo 3 mo 6 mo 1 yr	% 5 7.5 10 20	Time 1 mo 3 mo 6 mo 1 yr	% > 5 > 7.5 > 10 > 20	Time 1 mo 3 mos 6 mos 1 yr
3) Loss of subcutaneous body fat	Mild		Moderate		Mild		Severe		Mild		Severe	
4) Loss of muscle mass	Mild		Moderate		Mild		Severe		Mild		Severe	
5) Fluid accumulation	Mild		Moderate to severe		Mild		Severe		Mild		Severe	
6) Reduced hand grip strength	N/A		Measurably reduced		N/A		Measurably reduced		N/A		Measurably reduced	

*Adapted from reference 14

Figure 2. The "SWAT" Team

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demanding our full attention in order to optimize care delivery processes promoting nutritional outcomes.

The following exemplars from two hospitals incorporating ONS will highlight the benefits of collaboration between Nursing and Nutrition Services to offset the nutritional decline of hospitalized patients, thus promoting healing, optimal functional outcomes, protein stores, and timely discharge.

The Fountain Valley Journey

Fountain Valley Regional Hospital is a 400-bed acute care community facility, open since 1971 in Fountain Valley, California. Specialty services include a Bariatric Surgery Center of Excellence, Joint Commission-certified Stroke and Chest Pain Centers, American Diabetes Association certified Outpatient Diabetes Center, and a newly opened Wound Care Center with planned Hyperbaric Oxygen Chamber Therapy.

In October 2011, the Food and Nutrition Services team performance improvement (PI) process identified a significant delay in ONS approval by physicians resulting in untimely service to patients. A suggested action plan was to create an ONS protocol that the RN or RD could utilize. With the support of the Wound Care Specialist, a protocol template was created utilizing selected triggers to identify the need for ONS based on current research and evidence-based guidelines.[14] Feedback and support for this protocol draft was obtained from multiple facility committees including the Skin & Wound Action Team (Fig. 2), Clinical Practice Committee (CPC), Nursing Leadership Team (NLT), Diabetes Committee, and Pharmacy & Therapeutics Committee (P&T) prior to final approval from the Medical Executive Committee.

Training for the new protocol included roaming in-services for nursing staff, RD Team in-services, MD updates with support from IT for efficient ordering/deliveries. Marketing efforts included the Monthly ValleyVoice Newsletter, MD Blast Fax Memo, and a storyboard in the physicians' dining room.

The Committee developed an "Adult ONS Decision Tree" for use by nursing staff (Fig. 3). The ONS Protocol was implemented on October 1, 2012, and data are being collected, reviewed, and reported to the Wound Care, Quality, and Pharmacy and Therapeutics Committees.

Initial data review found that approximately 12% to 15% of high nutrition risk patients received the ONS protocol and supplements, yet only about 3% of these were also wound care consults. The data also showed that Nursing needs ongoing education and RD support to be assertive with the protocol initiation. Data collected for the first three months of protocol use show an average 80% compliance with protocol (Fig. 4)

Electronic Medical Record

Since going live with the electronic medical record (EMR) system on March 12, 2013, the ONS protocol must remain in paper format for the RN or RD to complete, then enter the supplement and frequency into the EMR system. Per California standards, the RN is allowed to enter this as a "protocol" order, yet the RD must enter this as a "Telephone/Read-Back" proposed order. In either case, the physician is required to sign off within 48 hours, per state regulations. As the staff improves on the EMR system usage, the ONS protocol will be tracked via online reports. In February of this year, CMS proposed important changes to Conditions of Participation that would allow patient diet, including therapeutic diets, to be ordered by a qualified dietitian if authorized by the medical staff and compliant with California state law Pending the outcome of this ruling, the RD may be allowed to move from the telephone order process to a protocol process.

Recognizing Nutritional Deficits

Nutritional deficits must be recognized early and interventions, such as ONS, implemented swiftly to achieve patient goals.[26] In a recent publication, Tappenden et al[27] describe the dire state of hospital malnutrition with one-third of patients malnourished on admission and another two-thirds experiencing malnutrition during their hospital stay. In order to address the gravity of this

situation, the Alliance to Advance Patient Nutrition (Alliance) was created. The health organizations that comprise this initiative are committed to improving evidence-based nutrition practices through interdisciplinary education, collaboration, and early intervention focused on optimal nutrition care (Fig. 5). Nurses have an opportunity to lead the charge put forth by the Alliance to implement essential elements that include championing the effort to prioritize nutrition care, enforcing use of reliable tools for screening and assessment, monitoring effectiveness of interventions, and ensuring communication of patient progress across the health care team. Aligned with the principle to institute nutrition interventions swiftly for those at greatest risk is the strategy of using ONS early and liberally. Without careful monitoring, nutritional deficits will continue unchecked and undermine efforts of the health care team to achieve patient goals of wound healing, functional recovery, and timely discharge. We have a growing

Figure 3. Decision Tree

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FVH0000

Initiated by the RN or RD	HT:	WT:

Adult Oral Nutrition Supplement (ONS) Decision Tree

Triggers: patient meets criteria that places them at a nutritional risk (check those that apply):	
A	❑ suboptimal albumin/prealbumin ☐ Albumin ≤ 2.0g/100mL ☐ Prealbumin ≤ 10mg/dL
B	❑ suboptimal PO intakes ☐ less than 50% or meets less than 50% of patient needs for 3 consecutive days
C	❑ suboptimal Body Mass Index (BMI) ☐ BMI ≤ 18 ☐ BMI ≥ 35 Weight in Pounds / Height in inches x Height in inches x 703 = BMI
D	❑ poor skin condition ☐ Braden Score of 18 or less ☐ Skin Breakdown or Wounds Present ☐ presence of scars
E	❑ activity or functional impairment ☐ prolonged bed rest ☐ poor mobility ☐ impending surgery ☐ recent surgery

If any above triggers checked, proceed below to appropriate PO supplement selections. When a blank box (☐) is checked, the bulleted items (•) are automatically implemented (unless crossed out and initialed by Physician or Provider)

❑ **Renal – 1 8-oz bottle twice daily** (Known Chronic Kidney Disease)
- Renal diet
- Other diet:
- RD Nutritional Consult

❑ **Diabetic Shake – 1 8-oz bottle twice daily** (Known Diabetes or Hyperglycemia)
- CCHO diet
- Other diet:
- RD Nutritional Consult

❑ **Standard – 1 8-oz bottle twice daily** (No known Chronic Kidney Disease or Diabetes)
- Regular diet
- Other diet:
- RD Nutritional Consult

❑ **Tissue building – Add 1 packet twice daily in addition to any supplements checked above**
Use for the following:
- Stage III, Stage IV, Suspected Deep Tissue Injury or Unstageable Pressure Ulcer
- Full thickness wound (examples: traumatic wound, surgical wound, arterial ulcer, venous ulcer, gangrene, wound dehiscence from previous surgery)

PO SUPPLEMENT NUTRITION FACTS (Please refer to the facility Nutrition Formulary for further details)

SUPPLEMENT	VOLUME	CALORIES	PROTEIN (gms)	CARBOHYDRATE (gms)	FAT (gms)
Renal	240 mls	432	19	38	23
Diabetic Shake	240 mls	223	10	29	8.6
Standard	240 mls	255	13	32	8
Tissue building	Packet (24 gms)	80	14	8	0

DATE:	TIME:	MD SIGNATURE:	MD ID #:
DATE:	TIME:	☐ VERBAL ORDER ☐ TELEPHONE ORDER READ BACK	RD or RN Signature/Print
DATE:	TIME:	RD or RN Signature/Print	ROOM #:
DATE:	TIME:	RN Signature/Print	❑ 12/24-HOUR CHART CHECK

Nutrition Protocol

«PatientNumber»
ACCT#«PatientNumber»
MR#«MedicalRecordNumber» «AdmitDate»
«PatientName»

Figure 4. ONS Protocol—Initial Quarterly Results

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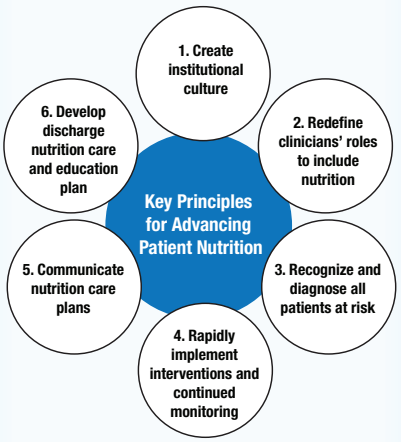
ORAL NUTRITION SUPPLEMENT (ONS) DATA OCT-DEC 2012

MONTH	ONS SIGNED YES	ONS SIGNED NO	% COMPLIANCE	WOUND CARE CONSULT	AVG LOS (days)
Oct	51	8	86%	29	15
Nov	34	14	71%	16	14
Dec	31	7	82%	3	14
QTR AVG	**116**	**29**	**80%**	**48**	**14.5**

Comments:
- Nursing still timid about initiating the protocol without RD assistance
- % of supplement consumption not consistently recorded by Nursing
- Supplement is now delivered by the next meal (lunch or dinner), so no time delay seen
- MD signatures within 48 hours remains a challenge

Figure 5. Key principles for advancing patient nutrition.**



**Adapted from reference 27.

body of evidence suggesting that ONS for disease-related malnutrition, concurrent with dietary advice, improves body weight, body composition, and functional measures such as grip strength.[28,29] Nurses must lead the health care team using astute assessment skills and current best evidence to identify deficient nutrition status and accelerate the use of clinical data to improve patient-centered care and health outcomes.

Another key principle addressed by the Alliance is the need to redefine the role of each member of the health care team in providing high quality nutrition care. Nurses in particular have clinical policies and practices that could be expanded to incorporate innovative approaches to meeting nutritional needs of at-risk patients. Many adverse outcomes influenced by malnutrition, such as pressure ulcers, impaired wound healing, increased infection rate, muscle wasting, and functional loss, are potentially preventable. Strategies that are successful at significantly reducing complication rates, length of stay, readmission rates, and cost of care often address one of the following: 1) food and/or nutrient delivery, 2) nutrition education, 3) nutrition counseling, and 4) coordination of nutrition care. Scheduling nutrient delivery at the convenience of the patient and capitalizing on meaningful interaction with the patient, such as during medication administration, is a "win-win" for the nurses at one of our featured hospitals. Simply identifying patients at risk for malnutrition is not sufficient; action must be taken to assist the patient to consume an adequate oral intake, thus avoiding costly setbacks. The next section describes such a method, called the "**MOST** program" (**M**edication and **O**ral **S**upplements **T**ogether), which was developed and implemented by Nutritional Care Services (NCS) staff members at Mission Hospital. The MOST program is an example of a best practice/model that has proven successful in assuring that patients are receiving the adequate nutrition provided by the prescribed ONS.

Making the MOST of the Patient's Recovery with Nutrition at Mission Hospital

Mission Hospital has been serving the greater needs of the South Orange County, California region for nearly 40 years, improving the quality of life in the communities it serves. Mission Hospital provides access to advanced care and caring at its two locations, Mission Viejo and Laguna Beach. Mission Hospital in Mission Viejo is an acute-care facility with 552 beds and is one of three designated trauma centers in Orange County offering 24-hour emergency care and specialized services. The 796 affiliated physicians, 2,743 employees, and 592 volunteers are committed to the highest ethical principles in delivering quality healthcare. A member of the St. Joseph Health System, Mission Hospital is one of 14 not-for-profit hospitals sponsored by the St. Joseph Health Ministry.

MOST Program Planning and Implementation

Patients at Mission Hospital at risk for malnutrition were receiving ONS. However, nutrition staff members noticed that meal trays were returned with the ONS untouched or only partially consumed. In an attempt to determine why so many patients were not consuming their prescribed ONS, NCS staff members conducted a study in January 2012. They measured a sample of 100 ONS servings returned on the meal trays to determine the amount actually consumed. Results showed that 62% of the 100 patients consumed none of the supplement, while 20% of the patients consumed 20% of the supplement (Fig. 6). Thus, 72.5% of the supplements were not consumed and were discarded as waste. Interestingly, however, staff noticed that when the supplement was opened for the patient and the patient began to consume the supplement, there was only a 24.6% waste (Fig. 7). Armed with these data, the NCS staff developed a new process designed to increase patient consumption of the ONS.

Figure 6. Pre-intervention ONS Consumption

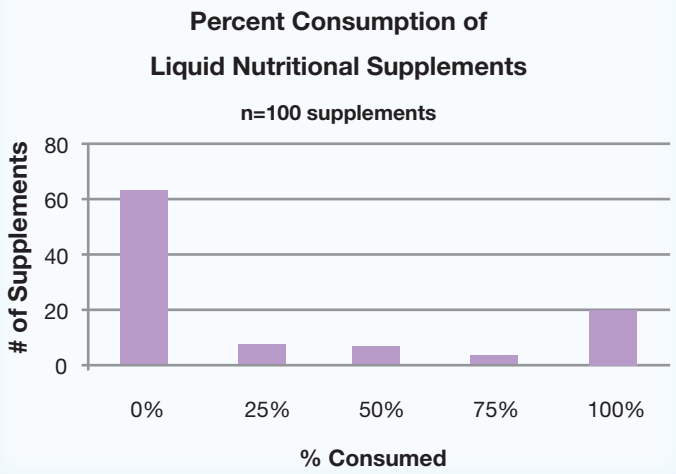
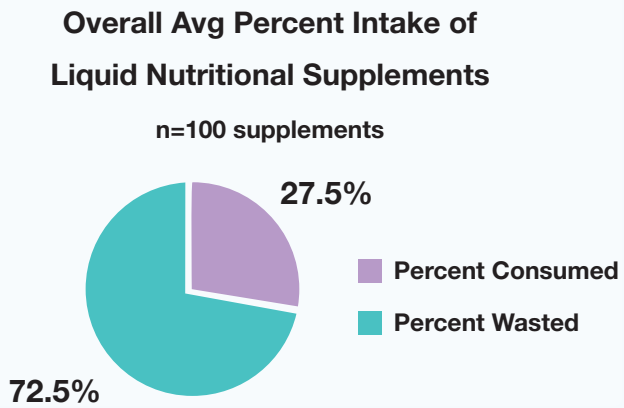


Figure 7. Pre-intervention Overall ONS Intake



The MOST Program: Medication and Oral Supplements Together

The MOST program is designed to combine the administration of medications and ONS to patients prescribed ONS. The objectives and benefits of the MOST program are to:

- Help maintain protein stores and body weight
- Prevent/treat pressure ulcers and malnutrition
- Decrease falls
- Improve intake of supplements
- Reduce waste of unused ONS
- Improve patient outcomes
- Reduce readmissions

All adult inpatients who have been prescribed ONS participate in the MOST program unless they are prescribed medications that have food/drug interactions with the supplement (Table 2).

The program was implemented in February 2012 at Laguna Beach and in March 2012 at Mission Viejo.

In the new process, The MOST program, NCS staff deliver the ONS along with a 4 oz. cup to the patient's bedside table (previously, the ONS bottle was provided without a cup). The 4 oz. cup was selected to avoid "overwhelming" the patient with a large amount of the ONS (e.g., 8 oz.). When the nurse

Table 2. The MOST Program: Potential Drug Interactions with ONS

The following medications may have a nutrient interaction with ONS, especially if given in amounts greater than 2 oz/serving. The following medications should be scheduled 1 hr before or 2 hrs after consuming meal/ONS.

Medication	Classification	Potential Interaction / Dietary Significance
Penicillin V (Veetids®)	Antibiotic	Administer on an empty stomach
Levodopa and carbidopa (Sinemet®)	Antiparkinson	Avoid administering with high protein foods, protein hydrolysates, and amino acids to ensure effectiveness of medication
Levothyroxine (Synthroid®)	Thyroid Hormone	Administer on an empty stomach before breakfast at 0700
Mycophenolate mofetil (CellCept®)	Immuno-suppressant	Administer on an empty stomach
Phenytoin (Dilantin®)	Anticonvulsant	Tube feedings decrease bioavailability of the drug. NOTE: May want to avoid nutritional supplements with this medication due to its calcium and magnesium fortification and risk for protein binding interaction with phenytoin
Tetracycline	Antibiotic	Administer on an empty stomach
Alendronate (Fosamax®) Etidronate (Didronel®) Risedronate (Actonel®)	Bisphosphonate	Administer on an empty stomach before breakfast at 0700
Digoxin Digoxin, (Lanoxin®)	Cardiotonic, Antiarrhythmic	Take separately from high bran fiber or high pectin foods. Narrow therapeutic index drug. Avoid fiber-containing nutritional supplements if possible
Glipizide (Glucotrol®)	Sulfonylurea (Antidiabetic)	Administer 30 min prior to meal/nutritional supplement
Erlotinib (Tarceva®)	Chemotherapeutic agent	Administer on an empty stomach
Sucralfate (Carafate®)	Anti-ulcerant/ Anti-GERD	Administer on an empty stomach
Melphalan (Alkeran®)	Chemotherapeutic agent	Administer on an empty stomach
Thyroid Armour®	Thyroid hormone	Take on empty stomach before breakfast at 0700
Voriconazole	Antifungal	Administer on empty stomach before breakfast and dinner

dispenses the patient's medication(s), he or she first checks the patient's medical record for any food/drug interactions. If there are no interactions, the nurse pours 3 oz. of the supplement into the cup and dispenses the medications to the patient to be taken with the supplement (previously, patients could take their medications with water or with applesauce). The nurse refills the cup with more supplement after the medication is taken, leaves it at the bedside, and encourages the patient to continue to drink the supplement (Fig. 8).

The MOST program was developed with multidisciplinary collaboration between dietitians, pharmacists, information technology (IT) staff, and nursing staff with conscious effort to avoid adding to the nurses' workload (Fig. 9). Checking the EMR to ensure there is no food/drug interaction is already standard protocol for nurses prior to dispensing medications. The role of pharmacy in developing the program was to ensure the EMR identified the appropriate food-drug interactions. The role of IT was to modify the existing EMR documentation screens to streamline data entry of ONS intake.

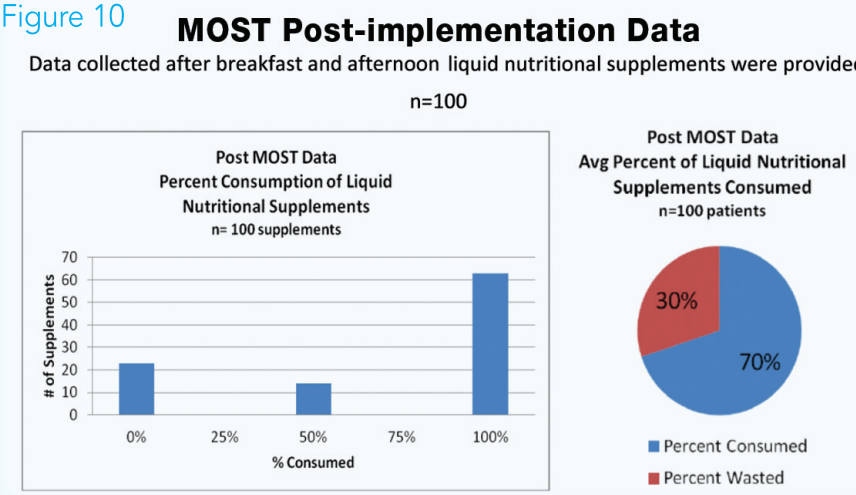
Posters and handouts were developed to train nutrition staff and nursing staff about the new process. On-site training was conducted by the dietitian. Flyers were posted on each unit to provide further education and nursing staff taste-tested the supplements. A cart stocked with a variety of available ONS samples was brought to each nursing unit and all nurses were encouraged to taste-test these products. The ONS samples were well received by the nurses. The MOST program was introduced to the Nursing Practice Council with the goals of gaining nursing support for the program, compliance with documenting the amount of food supplement consumed, encouraging patient compliance with ONS consumption with a positive message. Implementation and ongoing costs of this program prove to be minimal. The outlay for Mission Hospital was approximately $1,000/year for cups and educational flyers.

Figure 8. R.N. Scripting for the Bedside at Mission Hospital

"Let's use some of your (name of supplement) to take your medications. Using your supplement to take your medications will make you stronger, help you heal and get you discharged faster. Your doctor has ordered you a supplement so you need to take it just like you need to take your medications. I've tried this supplement and it tastes pretty good."

Figure 9. The Interdisciplinary MOST Team

Figure 10



MOST Program Results

The post-implementation study showed 70% consumption of prescribed ONS (Fig. 10). While 70% consumption is a great improvement in compliance with ONS consumption, efforts will continue to increase consumption further, utilizing a step-by-step effort of continued education and dietitian follow up with nurses to reach 100% consumption.

During the post-implementation follow-up, nurses expressed an interest in knowing about all supplement varieties available at Mission Hospital and NCS plans to offer regular supplement tastings to staff. Plans to improve communications between dietitians and nursing staff will further reduce waste when a patient dislikes a particular ONS product or flavor. The Hospital's Professional Education Department plans to include education about the MOST program in new nursing staff orientation. The MOST program will be included in NCS and nursing staff annual ongoing competency validation. In addition, the MOST program was easy to implement and the program did not burden nurses with additional workload.

Nursing staff were willing to participate in the MOST program after they were informed of the amount of ONS waste and could see how easy it would be to implement the program. The dietitian will continue close follow up with patients receiving ONS to ensure compliance with ONS intake or make any needed adjustments to the prescription.

The MOST program successfully highlighted the problem of inadequate nutritional supplementation at Mission Hospital. This easily implemented program was successful in improving intake and reducing waste of ONS. Further studies are needed to verify whether the MOST program or similar programs help reduce hospital-acquired complications related to malnutrition.

RN Comments:

- *"After I tell the patients about the supplement, they appreciate what the supplement will do for them."*
- *"The cups have been a visual reminder to provide supplements."*
- *"MOST has not been a burden."*

Conclusion

These examples of interdisciplinary collaboration at two separate medical centers highlight the impact of clinical partnerships between staff, patients, and family members when all are striving for a common goal, the achievement of optimal patient outcomes. Building a case for a nutritional intervention in support of poor oral intake is made easier by the recent attention to malnutrition in the hospitalized patient by numerous professional organizations. What isn't easy is the effort involved in the numerous ongoing outreach activities necessary to convince physicians, nurses, and dietitians of the need to improve nutritional care of acutely ill inpatients. In addition to early focused outreach activities, a sound evidence-based plan/protocol must be developed and vetted for staff endorsement, followed by actual implementation of the plan/protocol. Numerous barriers exist that preclude buy-in from all staff members: unfamiliarity with the supporting evidence, not enough time to invest in the change, lack of interest, and concern over cost, to name a few. The strong teamwork at both Fountain Valley and Mission Hospital was instrumental in overcoming barriers and implementing programs that were patient-centered, cost-effective, and quality-driven. While averting malnutrition, the nursing team was also addressing a critical yet often overlooked element of healing – the patient experience.

ABOUT THE AUTHORS

Kristie L. Hartig, BSN, LVN, WCC, has practiced as a Licensed Vocational Nurse since 2005 in California and been a Wound Care Nurse/Wound Care Clinical Educator for Fountain Valley Regional Hospital since May 2009. Her passion is "all things wound care" and she became Wound Care Certified through the National Alliance of Wound Care in 2008. She was invited to sit on the panel for the State of California's DACUM-LVN curriculum development in 2010. Kristie received her BSN in June 2013 from Western Governors University.

Mary S. McCarthy, PhD, RN is Senior Nurse Scientist, Center for Nursing Science and Clinical Inquiry, at Madigan Army Medical Center, Tacoma, Washington. She is a Nurse Scientist with over 30 years of clinical nursing experience in medical-surgical, emergency, and critical care work environments and 15 years of funded research in nutrition, metabolic support, and bone health with a bench-to-bedside focus. She is an Affiliate Assistant Professor at the University of Washington in Seattle. She received specialty training in Genomics at NIH (2009) and in evidence-based practice at the University of Iowa EBP Institute (2009). Dr. McCarthy provides expert consultation on indirect calorimetry, metabolism, nutrition support, conducting research/EBP projects, and quantitative research methods and has several publications related to health promotion and critical care nutrition. She has represented nursing on the Society of Critical Care Medicine/American Association of Parenteral and Enteral Nutrition Guidelines Committee for nutrition support of critically ill adults since 2007.

Nancy Perry, MS, RD, worked for 30 years in the Nutritional Care Services Department at Mission Hospital until 2013, rising to the position of Assistant Director. During her time at Mission Hospital, her goal was to promote innovative programs and services in order to continually provide quality patient care. She designed and

implemented the computerized diet office; the franchise model of the electronic medical record nutritional assessment screens for the St. Joseph Health System; a pathway for the rapid ordering of vitamins and minerals for wound care patients; the Malnutrition Identification system; as well as the MOST Program. Nancy credits the success of the many programs she developed and implemented to collaborating with nursing and other professionals within the hospital.

Janet Shannon, MS, RD, has practiced as a clinical dietitian at Mission Hospital since 2007. She works mainly with medical, surgical and oncology patients. She is currently studying to become a Certified Oncology Specialist in fall of 2013. Janet serves on the CDA Orange District board where she is active in helping with setting up continuing education programs. Throughout her many years as a registered dietitian, she has worked in both acute and long- term care. She is also an instructor at Saddleback College, Mission Viejo, California.

Debbie "Diet" Tindle, RD, is a Registered Dietitian and member of the American Dietetic Association with over 25 years' experience in nutrition, health and wellness, bariatric weight management and food service management. She has presented topics on weight management, healthy eating, micro and macro-nutrients, breaking behavior chains, surgical interventions of weight management, facts and fallacies of chocolate, and brain food and has been published in the *Future Dimensions in Clinical Nutrition Management* from the Academy of Nutrition and Dietetics, the *Consulting Dietitians of California Newsletter*, the *Journal of Nutrition Education*. Debbie's current position is with Morrison Management Specialists as the System Director of Nutrition for the Orange County, California area. She manages the RD team between several acute care facilities and coordinates the mentoring of dietetic interns.

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Post-Test: Collaborative Nutrition Initiatives Promote Enhanced Patient Outcomes

Post-Test: This complete *Nursing Currents* issue is posted on www.anhi.org in the "Learning Center" under "Adult Therapeutic Nutrition." Complete the following Post-Test online at no charge to receive RN CE credit. Please note online questions or answers are randomized and may not appear in the sequence shown below. Do not assume that the "letter" preceding the correct response will be identical to the online version.

1. Which of the following is/are possible complications of malnutrition?
   a. Delayed wound healing
   b. Pressure ulcer(s)
   c. Infection
   d. a and b
   e. All of the above

2. Since 1996, the Centers for Medicare and Medicaid Services has mandated that malnutrition screening must be performed for all patients within 24 hours of hospital admission.
   a. True
   b. False

3. Patients who are malnourished are more likely to fall than patients with adequate nutrition.
   a. True
   b. False

4. The Fountain Valley Journey involves a customized oral nutrition supplement protocol, which includes evidence-based triggers and a decision-tree process for RNs and RDs to select and initiate supplement for patients in need. This process is supported by:
   a. The Medical Staff
   b. Nursing Leadership
   c. Clinical Practice Committee
   d. Skin and Wound Action Team
   e. Pharmacy and Therapeutics Committee
   f. All of the above

5. The prevalence of nosocomial infections among severely malnourished patients in one large study was:
   a. 8.7%
   b. 30%
   c. 14.6%
   c. 7.6%

6. Nutritional status can decline during hospitalization for as many as 69% of patients.
   a. True
   b. False

7. Quality of care means: the degree to which evidence-based practices are used in the treatment of diseases and conditions.
   a. True
   b. False

8. The MOST program is designed to:
   a. Increase consumption of ONS
   b. Reduce wasted ONS
   c. Improve patient outcomes
   d. Combine administration of medications and ONS
   e. All of the above

9. MOST is an acronym for "Medication Orders Submitted Today"
   a. True
   b. False

10. In the MOST program, patients take their medications with:
    a. Water
    b. ONS
    c. Mixed in applesauce
    d. Mixed in any soft food they prefer

Credit: 1.0 RN CE contact hour

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