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ORIGINAL RESEARCH & CONTRIBUTIONS

Special Report

Nutrition Reconciliation and Nutrition Prophylaxis: Toward Total Health

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Perm J 2015 Spring;19(2):80-86

http://dx.doi.org/10.7812/TPP/14-081

ABSTRACT

Malnutrition is a common and debilitating condition in the acute hospital setting that is associated with many adverse outcomes, including prolonged length of hospital stay, increased readmission rates, and increased mortality. However, malnutrition by definition may be an abnormality in either under- or overnutrition. With obesity rates rising, many patients admitted to the hospital may be overnourished from unhealthy eating habits. Unhealthy eating habits and obesity increase a patient's risk for cardiovascular events and complications in the hospital setting.

Nutrition risk screening or nutrition reconciliation is an underutilized tool in the hospital that would identify patients with over- and undernutrition. Nutrition intervention or nutrition prophylaxis initiated in the hospital may help reduce hospital days, readmissions, and mortality. *Nutrition reconciliation* is a new term developed to increase the awareness of nutrition in total health. Nutrition reconciliation means that all patients have their nutritional status reconciled on admission to and discharge from the hospital. Nutrition reconciliation is defined as the process of maximizing health by helping align an individual's current diet to the diet prescribed for him or her by the health care team. Nutrition prophylaxis is a proactive intervention to prevent a medical complication.

Mandatory nutrition reconciliation and nutrition prophylaxis is not widely performed in most hospitals. Such an intervention may help our patients by improving their short- and long-term health. In addition, nutrition reconciliation and nutrition prophylaxis may allow for a more effective use of resources to prevent a preventable disease.

INTRODUCTION

The nutritional status of Americans has been studied and shows some disturbing trends, with some Americans being undernourished while most Americans are overnourished.[1] In addition, there are Americans who eat unhealthy diets that, if not modified over time, may lead to overnutrition, obesity, and chronic disease.[2] A startling number of patients admitted to the hospital suffer from protein energy malnutrition and obesity. These conditions are associated with unhealthy eating habits and food insecurity. Nutrition assessment and intervention during an admission to the hospital may represent an opportunity to educate all patients about the importance of healthy eating and increase awareness of interventions to help treat short-term effects of undernutrition and long-term effects of overnutrition.[3,4]

Reducing avoidable readmissions to the hospital has been a focus of Medicare as a target for cost reduction. Researchers have shown that nine of the top ten primary diagnosis-related groups causing readmission were associated with malnutrition.[5] Therefore, a focus on nutrition may be a new approach in addressing avoidable hospital readmission rates.[6] Although most of the care that prevents readmission to the hospital occurs after discharge, the process to prevent readmission starts in the hospital. We have previously reported that a bundle of elements initiated before and after discharge from the hospital is correlated with reduced readmission rates.[7] Examples include medication reconciliation and venous thromboembolism prophylaxis.

Medication reconciliation has been shown to be an important intervention to reduce avoidable readmissions.[8] Schnipper et al[9] reported that pharmacist medication review and counseling were associated with a lower rate of preventable adverse drug events after hospital discharge. The adverse effects of not reconciling medications at the time of discharge from the hospital have been well documented.[10] Other studies have shown that medication reconciliation decreased readmission rates at 7, 14, and 30 days after discharge, with statistical significance at 7 and 14 days.[11]

Deep vein thrombosis and pulmonary embolism after hospitalization is an example of an avoidable high-cost and potentially life-threatening readmission to the hospital.[12] Venous thromboembolism prophylaxis is now a national guideline intervention to prevent thrombosis and embolism during hospitalization.[13] On admission to the hospital, patients are risk stratified for deep vein thrombosis risk. If the risk is high they are given blood-thinning agents to prevent deep vein clots during their hospital stay. A recent study showed that venous thromboembolism prophylaxis was associated with a decrease in readmissions to the hospital.[14]

Hospital readmission is a frequent and costly event that is associated with gaps in care.[5] Rates of readmission can be reduced with the implementation of more reliable systemic interventions. Information learned from bundling elements such as medication reconciliation and venous thromboembolism prophylaxis to reduce readmission rates could be applied to nutrition. Recent meta-analysis suggests that readmission rates can be significantly reduced by prophylactic identification and treatment of older patients who have been diagnosed to have protein energy malnutrition.[15]

Education, screening, and nutrition intervention may be the most cost-effective and efficient way to reduce avoidable readmissions to the hospital.[16] However, for adequate nutrition to have an impact on health, one must also address food

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availability, food choice, and eating habits as separate but complementary aspects of over- or undernutrition. Nutrition prophylaxis is an important preventive activity that would be appropriate for adaptation to most chronic illness or prevention treatment regimens.

Nutrition reconciliation and nutrition prophylaxis in the hospital and at discharge may lead to both decreased hospital costs and improved patient care. However, few hospitals are looking at nutrition as a cost-effective intervention to prevent an avoidable return to the hospital.[17] A hospital-based program aimed at screening and treating patients with nutrition issues could follow the programs that have been instituted for medication reconciliation and venous thrombosis prophylaxis. These programs used two basic concepts: 1) screen for high-risk patients and 2) provide prophylaxis treatment to prevent complications. In the next sections we will define *malnutrition* and then propose two interventions to be performed on all patients admitted to the hospital: 1) nutrition reconciliation and 2) nutrition prophylaxis.

MALNUTRITION

Malnutrition is common[18] and by definition is any imbalance in nutrition.[19] There are several *International Classification of Diseases* codes for malnutrition including mild, moderate, and severe protein-calorie malnutrition.[20] Although typically thought of as a lack of something, current thoughts include the fact that malnutrition can develop as a consequence of under- or overnutrition. In the hospital, undernutrition is associated with increased morbidity and mortality.[21,22] In the outpatient setting, overnutrition can result in chronic diseases such as obesity, diabetes, high blood pressure, and coronary artery disease.[23] Obesity is now a major public health preventable disease, and efforts to screen and educate the general public are an important first step to preventing negative consequences of this disease.[24]

The nutritional status of older Americans reflects disturbing trends, especially in the Medicare population. A study by Meals on Wheels of America indicates that 5.7% of older Americans are at risk for food insecurity, hunger, and malnutrition.[25] Other studies have shown that undernutrition is present in up to 72% of elderly patients admitted to the hospital.[17,26] In 2011, researchers reported that body mass index (BMI) showed a relationship with readmission for patients both above and below the normal weight range.[27] The authors concluded that pre- and posthospital interventions should consider targeting nutritional status.

The causes and types of malnourishment in the elder population are varied, both physiologic and psychological in nature, and may lead to protein energy malnutrition. The phrase *anorexia of aging* has been used by many to describe the decreased food intake of old age.[28] Compromised metabolism caused by underlying chronic disease, natural processes, and immobility contribute to poor nutrition among this population.[26] The presence of protein energy malnutrition has been shown to be a risk factor for elderly admitted to the hospital and for subsequent readmission.[29] In effect, if a patient has protein energy malnutrition at hospitalization, their overall outcome has been shown to be poor.[30,31] Malnutrition can affect every system in the body, resulting in impairment of wound healing, in increased risk of infections and pressure ulcers, in decreased respiratory and cardiac function, in poorer outcomes of chronic lung diseases, in increased risk of cardiovascular and gastrointestinal disorders, in poorer physical function, and in mortality.[32,33]

Patients who leave the hospital in an undernourished state also have a high mortality rate. Patients with a history of weight loss and low BMI were found to have a 1-year post-discharge mortality risk of 24% compared with 7% in the control group.[34] Similar findings were reported for undernourished patients discharged from the hospital with a diagnosis of stroke.[35] Several meta-analyses have also demonstrated reduced mortality in patients receiving optimized nutrition care. An analysis of 11 studies found significantly lower mortality rates among hospitalized patients receiving oral nutritional supplements compared with control patients.[15] In addition, nutrition intervention that provides nurse visits and free meals to elderly patients upon discharge reduced readmission rates from 23% to 7.6%.[36]

NUTRITION RECONCILIATION

Despite the high prevalence of undernutrition in geriatric patients and overnutrition in the general adult population, nutrition-related problems are rarely recognized and treated in the hospital. To improve outcomes, routine screening and

Table 1. Screening tools available on the Internet

Tool	URL
Malnutrition Screening Tool	http://static.abbottnutrition.com/cms-prod/abbottnutrition.com/img/Malnutrition%20Screening%20Tool_FINAL.pdf
Mini Nutritional Assessment—Short Form	www.mna-elderly.com/forms/mini/mna_mini_english.pdf
Malnutrition Universal Screening Tool (MUST)	www.bapen.org.uk/pdfs/must/must_full.pdf
Nutritional Risk Screening 2002 (NRS 2002)	www.sciencedirect.com/science/article/pii/S0261561402002145
Short Nutritional Assessment Questionnaire (SNAQ)	www.fightmalnutrition.eu/fight-malnutrition/screening-tools/
Nutrition and Physical Activity Screen	www.cdph.ca.gov/HealthInfo/healthyliving/childfamily/Documents/MO-NUPA-02NutritionalRiskScreening.pdf

interventions should be implemented to help all patients admitted to the hospital.[18,37] In 2013, the Alliance to Advance Patient Nutrition published a consensus report that suggested hospitals update the current clinical practices to include more rigorous nutrition screening for patients admitted to the hospital who may be over- or undernourished.[3]

Nutritional issues before or during hospitalizations may cause complications but often receive limited attention.[38] Unfortunately undernutrition, which is a significant risk factor for poor outcomes, continues to go unrecognized and untreated in many hospitalized patients. The Joint Commission has recognized the negative impact of malnutrition in hospitals and has made nutritional assessment, support, and ongoing reassessment an integral and essential part of current accreditation.[39] Even when there is a documented nutrition assessment in the medical chart, there may be a delay in physician implementation of a nutritional intervention that may help a patient heal from the disease that required admission to the hospital.[40] A recent review demonstrated that nurses who care for patients during the entire hospital stay are not required to screen for, to educate about, or to treat malnutrition.[41]

As we enter a new era of health care delivery, it is time to prevent preventable diseases and to identify opportunities to reduce the high cost of hospital care. Malnutrition is a preventable disease. Effective management of malnutrition requires early detection and intervention. Validated screening tools have been developed for nutrition (Table 1) but are underutilized in the hospital.[42] Hospitalized patients, regardless of their weight, may suffer from undernutrition associated with inflammation or infection.[4] Patients at risk for undernutrition include patients with an acute illness, poor appetite, and weight loss.[4]

Nutrition reconciliation is a new term developed to increase the awareness of the important role nutrition plays in total health.[43] Nutrition reconciliation means that all patients have their nutritional status reconciled on admission to and on discharge from the hospital. With widespread use of electronic medical records (EMRs), it is now possible to implement screening and billable treatment protocols for malnutrition as we do for medication and venous thrombus prevention. Nutrition reconciliation is defined as the process of maximizing health by helping align an individual's current diet to the diet prescribed for him or her by the health care team. There are two issues in identifying a patient's current diet. The first is identifying patients who are undernourished. The second is identifying patients who are overnourished or not eating a healthy diet.

Admission to the hospital is an opportune time to improve nutrition. During hospitalization, physicians and staff can provide nutrition interventions and education on the basis of what the patient needs and wants to know. The physician, dietitian, and nurse can help the patient develop an action plan during the hospital stay and at discharge that helps reduce complications associated with an acute illness, or they can initiate changes in behavior to help prevent and manage a chronic disease. The nutrition reconciliation process should be an opportunity to help all patients understand the role diet plays in Total Health.

Nutrition reconciliation will occur on admission and continue after discharge from the hospital. In the future, nutrition may be a vital sign of health just as we currently use exercise as a vital sign of health. Most nutrition screening tools focus on undernutrition because undernutrition poses the greatest risk for complications during the current hospital visit and after discharge from the hospital (Table 1). The majority of nutrition assessment and screening tools do not evaluate overnutrition or healthy eating habits. The new paradigm is that nutrition reconciliation will screen for patients at high risk for under- and overnutrition. In this article we suggest the creation of a screening tool for Total Health that will identify patients who need more nutrition and those who may need more healthy nutrition. Nutrition reconciliation can use existing tools (Table 1) and add to these a few questions on healthy eating (Table 2). After completing steps one to five as outlined in Table 2, we can then risk stratify a patient into one or more risk groups as shown in Table 3. This will then set the stage for nutrition prophylaxis of patients identified as undernourished, overnourished, or eating an unhealthy diet.

Table 2. Proposed nutrition reconciliation screening tool

Step	Action
1	Determine the patient's body mass index and determine whether the patient has a high, low, or normal body mass index (http://nhlbisupport.com/bmi/bminojs.htm)
2	Ask the patient about recent weight loss or lack of appetite
3	Determine whether the patient has healthy eating habits by asking these three questions: • Do you drink on average more than one sugar drink per day? • Do you eat or take out a meal from a fast food restaurant on average more than once per day? • Do you eat fewer than five servings of fruits and vegetables per day?
4	Establish acute diseases that may affect adequate nutrition during the hospitalization
5	Determine whether the patient is at risk for undernutrition, overnutrition, or unhealthy eating

Table 3. Proposed nutrition reconciliation risk stratification

High risk for undernutrition	Low body mass index
	Recent weight loss
	Loss of appetite
	Acute illness requiring admission to the hospital
High risk for overnutrition	Body mass index greater than 25
	No recent weight loss or loss of appetite
	Answers yes to any of the questions in Table 2, step 3
High risk for unhealthy eating	Answers yes to any of the questions in Table 2, step 3

NUTRITION PROPHYLAXIS

Systematically identifying patients who are malnourished and intervening before they develop a preventable disease, get admitted to the hospital, or develop nutrition-related complications during a hospital visit will reduce overall cost of care.

After the patient has completed nutrition reconciliation we can begin nutrition prophylaxis.

Nutrition prophylaxis is a proactive intervention to prevent medical complications from malnutrition. Nutrition prophylaxis is designed to screen and treat preventable disease. As mentioned above, the three risk groups outlined in Table 3 represent potential risk groups for interventions that may prevent complications inside and outside the hospital while helping to reverse or prevent a chronic disease.

Undernutrition

Nutrition intervention for malnourished patients is a low-risk, cost-effective strategy to improve quality of care, prevent preventable disease, and lower overall health care costs. It is estimated that more than one-third of medical patients in the hospital are undernourished.[18] If the nutrition problem is not addressed, undernourished patients may experience a further decline in nutrition and further progression of an illness before discharge from the hospital. Undernutrition is associated with many adverse outcomes, including depression of the immune system, impaired wound healing, muscle wasting, longer lengths of hospital stay, higher treatment costs, and increased mortality.[18]

Many of the adverse outcomes influenced by undernutrition are potentially preventable. Data from several recent studies show that undernutrition can influence hospital readmission rates and reduce health care costs.[15,44,45] Undernourished patients may benefit from oral nutritional supplements. A large Cochrane systematic review of 24 studies involving 6225 patients aged 65 years and older at risk for malnutrition demonstrated fewer complications (eg, pressure sores, deep vein thrombosis, and respiratory and urinary infections) among patients receiving oral nutritional supplements compared with routine care.[46] In a prospective study conducted at the Johns Hopkins Hospital, nutrition screening involving a team approach to address malnutrition and earlier intervention reduced the length of hospital stay by an average of 3.2 days in severely malnourished patients.[47]

A recent retrospective analysis used information from more than 1 million adult inpatient cases found in the 2000-2010 Premier Perspectives Database maintained by the Premier Healthcare Alliance—representing a total of 44 million hospital episodes from across the US or approximately 20% of all inpatient admissions in the US.[48] Within this sample, oral nutritional supplements reduced length of hospital stay by an average of 2.3 days.[48]

Steps in a Nutrition Prophylaxis Plan

- Implement a nutrition prophylaxis treatment plan for all patients at time of admission
- Provide oral nutritional supplements for all patients considered undernourished
- Provide nurse and dietitian education for patients with undernutrition, overnutrition, or unhealthy eating habits
- Monitor nutritional intake during admission and subsidize patients with additional nutrition if a nutritional opportunity is missed
- Manage symptoms of gastrointestinal distress that may affect nutrition
- Identify and adjust medications and diseases that may interfere with good nutrition
- Document nutrition care plan at time of discharge to ensure posthospital care, including goals, intervention, necessary resources, monitoring, and future evaluation

One of the commonly used treatments for undernutrition is oral nutritional supplements. Systematic reviews and meta-analyses have documented the effects of oral nutritional supplements on clinical outcomes. In 2013, Stratton et al[15] reported the results of systematic review of nine randomized controlled studies and meta-analysis on the effects of oral nutritional supplements on hospital readmissions. This study showed that oral nutritional supplements significantly reduce hospital readmissions, particularly in older patient groups. Although oral supplementation is one avenue for improvement of nutritional status, providing adequate and appropriate food in the form of meals can also be a sustainable method for enhancing patient nutrition at home.

Overnutrition and Unhealthy Eating

Although less of a risk for complications during an admission, identification of and treatment of patients who eat an unhealthy diet may prevent short- and long-term complications. Obesity and unhealthy eating are risk factors for chronic

Table 4. Solutions for lower-income individuals

Program	URL
Older Americans Act Nutrition Program	http://nutritionandaging.fiu.edu/OANP_Toolkit/toolkit%20update%202.7.06.pdf
Home-delivered meals (Meals on Wheels and Mom's Meals)	www.mowaa.org/ www.momsmeals.com
Medicaid waiver and other government programs	www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Waivers/Home-and-Community-Based-1915-c-Waivers.html
Managed Long-Term Services and Supports	www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Delivery-Systems/Medicaid-Managed-Long-Term-Services-and-Supports-MLTSS.html
Program of All-Inclusive Care for Elderly	www.medicare.gov/your-medicare-costs/help-paying-costs/pace/pace.html
Supplemental Nutrition Assistance Program (SNAP) food stamps	www.fns.usda.gov/snap/supplemental-nutrition-assistance-program-snap

disease. Researchers have reported that disease risk for hypertension, type 2 diabetes, and coronary artery disease as well as related costs increase with increased BMI.[49]

Because patients admitted to the hospital are at risk for unhealthy eating, as is the general population, successful nutrition prophylaxis including educational components for obesity and consumption of foods that are inappropriate for the disease state will help reduce future disease burden and cost. Once identified for being at risk for overnutrition and unhealthy eating, patients could receive initial education during the hospital stay and follow-up planning at discharge on the benefits of healthy weight and healthy eating.

We recommend that hospital leadership consider developing a culture of healthy eating for all patients admitted to the hospital. Hospital food should be aligned with the food we are asking our patients to eat when they leave the hospital.

With the changing health care environment, high-quality, cost-effective preventive care is important. Automated proactive nutrition assessment and intervention are critical steps to reduce current and future hospital complications and cost. The prevention and treatment of hospital malnutrition offer a tremendous opportunity to optimize the overall quality of patient care, improve clinical outcomes, and reduce costs.

Nutrition prophylaxis should follow immediately after nutrition reconciliation has been completed and a nutrition diagnosis has been obtained. Nutrition prophylaxis could follow the steps outlined in the Sidebar: Steps in a Nutrition Prophylaxis Plan. Nutrition prophylaxis should be person focused and address particular issues related to the importance of the diet and health of the individual. Most patients admitted to the hospital suffer from a chronic disease. A general diet that has reported health benefits is the Dietary Approach to Stop Hypertension (DASH) diet; this could be a universal healthy diet for all patients admitted to the hospital.[50] This general diet can be used to teach patients the benefit of healthy eating. Additional teaching could also help patients with disease-specific dietary needs such as diabetes (low carbohydrate diet) and kidney disease (low phosphorus and low potassium diet).

While in the hospital, patients are in a controlled environment. Once they leave the hospital, they are at risk for returning to their unhealthy eating habits. This is why nutrition reconciliation will be required at the time of discharge and also when the patient returns to a primary care physician for a posthospital follow-up appointment. After discharge from the hospital it is important to ensure that the nutrition discharge plan meets the health condition needs the patient learned about in the hospital. This plan should be convenient, tailored to patient preferences, and affordable. If patients are not able to prepare healthy meals when they return home, they may want to consider paying for meals that are healthy and meet their nutrition needs, such as a home meal delivery service (see Sidebar: Mom's Meals NourishCare Program). Other options for low-income individuals include government- or managed-care-funded programs that provide supplemental nutrition to low-income individuals (Table 4). Some states include funds for home-delivered meals as part of their Medicaid package.

Mom's Meals NourishCare Program
www.momsmealsnc.com

The Kaiser Permanente Northern California Region is now partnering with Mom's Meals NourishCare Program to offer healthy home-delivered meals at low prices to Kaiser Permanente members. For many patients discharged from the hospital and members with chronic conditions, food shopping and meal preparation may be daunting. Two member surveys showed that people discharged from the hospital have difficulty getting healthy food at home. After a feasibility pilot at the Oakland and Richmond Medical Centers in 2013, the Mom's Meals NourishCare Program, which was approved by Kaiser Permanente Dietitians, became available to discharged hospital patients across the Northern California Region.

Access to healthy food is a critical part of the recovery process and our members' Total Health. Most of the patients who are readmitted to the hospital are unable to cook or to go to the store. Mom's Meals provides refrigerated meals for breakfast, lunch, or dinner, which are made with fresh ingredients and no preservatives. Patients can select from more than 100 choices, including vegetarian and gluten-free options. Customers pay $5.98 per meal, which includes tax and delivery. Each meal comes with two snacks, such as carrots, string cheese, or a fig bar. The meals may be purchased in quantities of 3, 7, 10, 14, or 21.

DISCUSSION

With policy changes in the US health care system pushing for a greater focus on high-quality and affordable care, there's an urgent need to address the ongoing issue of avoidable readmissions to the hospital. Addressing hospital malnutrition and ensuring that medical nutrition therapy intervention occurs should play a critical role in patient care.[16]

Physicians and nurses should initiate the nutrition reconciliation process at the time of admission so dietitians can start evaluation and treatment shortly after admission. This process requires little time if questions are clearly outlined in the EMR, as we currently do for venous thromboembolism prophylaxis. In the hospital, the decision point for reconciliation is primarily focused on undernutrition to identify patients who may benefit most from nutrition supplementation. Patients identified as overnourished or who have unhealthy eating habits may benefit from education. We recommend that hospital leadership consider developing a culture of healthy eating for all patients admitted to the hospital. Hospital food should be aligned with the food we are asking our patients to eat when they leave the hospital.[51]

The proposed nutrition reconciliation screening tool outlined in Table 2 has not been validated. The questions in Table 2 were taken from the many validated tools outlined in Table 1. However, the basic questions are a tool to help physicians identify patients admitted to the hospital who may benefit from nutrition prophylaxis. For example, not all patients with an elevated BMI are unhealthy.[52] Some obese patients may eat a healthy diet and exercise regularly. These patients may have a lower incidence of chronic disease and

Tulane University School of Medicine
www.treehugger.com/health/let-food-be-thy-medicine.html

In March 2014, the Tulane University School of Medicine in New Orleans, LA, announced that the university was adding an unconventional course to its curriculum. Medical students now take cooking classes in addition to their usual training. The idea behind this "culinary medicine" program is to encourage physicians to use food to prevent or to cure illnesses. Most medical students in the US receive on average 20 hours of nutritional education even though diet may be the cause of many modern Western diseases. Lifestyle management, including a healthy diet, may be able to prevent diseases such as diabetes while significantly reducing overall health care costs. Training physicians to cook, however, takes nutritional education to a whole new level. Not only will physicians be able to explain which foods are best to eat, but they will also understand how to prepare them. Tulane medical students prepare for teaching future patients by offering free cooking classes to New Orleans residents—a mutually beneficial arrangement for everyone who shares that food. Fortunately, the culinary medicine model seems to be catching on. Two other medical schools have licensed the curriculum and are adding it to their courses. Ideally all medical schools will adopt this best practice.

a higher survival rate than some patients who are not obese but do not eat a healthy diet. The purpose of this article is to help physicians understand the potential benefits of nutrition reconciliation in the hospital that may eventually be applied to the clinic setting as a vital sign of health.

Applying the principles discussed in this article will involve collaborative efforts among members of an interdisciplinary health care team, including physicians, nurses, social workers, and dietitians, with the full support of hospital administrators. Everyone, including the patient, has a role in supporting nutrition interventions. Team members, including nurses and physicians, have a responsibility to be involved in nutrition care.

The principles proposed in this article are an opportunity for hospitals and physicians to begin the work needed to make nutrition reconciliation and nutrition prophylaxis a reality. Our goal would be that hospitals develop a person-focused nutrition culture in which nutrition care is a priority for physicians, employees, and patients. All patients should be screened for malnutrition and interventions applied when indicated. With the widespread use of the EMR it should be possible to develop an application to ensure that nutrition reconciliation occurs on admission and discharge and is aligned with nutrition prophylaxis during and after the time the patient spends in the hospital.

Follow-up, monitoring, and creating a nutrition care plan for discharged patients is paramount because malnutrition is not cured when patients leave the hospital. The nutrition care plan should be incorporated into nutrition education for patients and caregivers as well as communicated to physicians who follow up with the patient after discharge (see Sidebar: Tulane University School of Medicine). The nutrition care plan should be part of the patient's EMR and reviewed each time the patient sees a physician. Unidentified malnutrition heightens the risk of adverse complications and of avoidable cost of care.

CONCLUSION

Social issues play a key role in health and are also a very important cause of under- and overnutrition.[53] During hospitalization, the physician must also consider reversible nutrition concerns and nutrition issues that may occur as part of natural aging. Social workers, dietitians, and nurses must advocate together for policy changes in their hospitals and Regions to resolve community issues related to food insecurity and overnutrition. In addition, end-of-life issues are also important when looking at malnutrition in the sick elderly. Physicians can help patients and families understand that undernutrition associated with comorbidities may be an opportunity to discuss end-of-life issues and advance care planning.[54] In summary, malnutrition is a preventable disease that can be cured by an organized systemwide program of nutrition reconciliation and nutrition prophylaxis that focuses not just on a disease but on the person with a disease. ❖

Disclosure Statement

The author(s) have no conflicts of interest to disclose.

Acknowledgment

Mary Corrado, ELS, provided editorial assistance.

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