

# PREVENTING MALNUTRITION



MALNUTRITION *CHANGE PACKAGE*



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**Accessible at:** <http://www.hret-hiin.org/>

**Contact:** [hiin@aha.org](mailto:hiin@aha.org)

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## How to Use this Change Package

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**WHY/HOW TO USE THIS GUIDE** This change package is intended for hospitals participating in the Hospital Improvement Innovation Network (HIIN) project led by the Centers for Medicare & Medicaid Services (CMS) and the Partnership for Patients (PFP); it is meant to be a tool to help you make patient care safer and to improve care transitions. This change package is a summary of themes from the successful practices of high performing health organizations across the country. It was developed through clinical practice sharing, organization site visits and subject matter expert contributions. This change package includes a menu of strategies, change concepts and specific actionable items that any hospital can choose to implement based on need and to begin testing for purposes of improving patient quality of life and care. This change package is intended to be complementary to literature reviews and other evidence-based tools and resources.

## PART 1: ADVERSE EVENT AREA (AEA) DEFINITION AND SCOPE

**CURRENT DEFINITION OF HARM TOPIC** Disease related malnutrition is defined as “undernutrition as a result of a disease process” which may be present on admission (POA) or acquired during hospitalization.<sup>1</sup>

### Magnitude of the Problem — Why Does This Matter

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It is estimated that at least one third of patients in developed countries are malnourished upon admission to the hospital<sup>2,3</sup> and, if not addressed, approximately two thirds of those patients will experience a further decline in their nutrition status during their hospitalization.<sup>4</sup> Despite a consensus statement by the board of directors of the American Parenteral and Enteral Nutrition (ASPEN) which defined the problem and urged hospitals to monitor and ensure hospitalized patients’ nutritional needs are optimally met, malnutrition continues to be underdiagnosed in many hospitals.<sup>5</sup>

Additionally, approximately one third of the patients who are not malnourished on admission will become malnourished while hospitalized.<sup>6</sup> Hospitalized patients, even those with a high body mass index (BMI), can suffer from undernutrition because of reduced intake due to illness-induced poor appetite, reduced ability to chew or swallow, gastrointestinal problems, NPO (nothing by mouth) status for diagnostic or therapeutic purposes. These problems are further complicated by increased energy, protein and micronutrient needs due to inflammation, infection or other catabolic conditions.<sup>4</sup>

The consequences of malnutrition are alarming. In a large study of major surgery cases drawn from Healthcare Cost and Utilization Project (HCUP) Nationwide Inpatient Sample (NIS), patients with malnutrition have the following increased risk for harm:

- > Four times more likely to develop a pressure ulcer/injury
- > Twice as likely to develop a surgical site infection
- > Sixteen times more likely to develop intravascular device-related infection
- > Five times more likely to develop a catheter-associated infection<sup>23</sup>

Furthermore, malnutrition also significantly influences hospital readmission rates. In a large study at a 550 bed academic medical center, with 30-day readmission rate of 17 percent, weight loss was found to be a significant co-morbidity that increased the risk of readmission.<sup>7</sup> Research findings are consistent with the concept of malnutrition contributing to “post-hospital syndrome” which is defined as “an acquired, transient period of vulnerability,” which together with other factors can dramatically increase the risk of 30 day readmission.<sup>8</sup> Lastly, patients with a malnutrition diagnosis had hospital costs and length of stay three times higher than those without this diagnosis.<sup>5</sup>

Nutritional care is not often seen as a patient safety issue. There is little evidence of the impact of improved management of illness-related malnutrition. Based on a Cochrane review in 2008, researchers concluded that dietary advice plus dietary supplements may be more effective at reducing malnutrition than advice alone or no advice. Smaller studies have revealed that the degree to which patients receive nutritional services influences length of stay. Patients who received high quality nutritional care (defined as early intervention OR frequent use of nutritional services) averaged 2.2 days shorter length of stay than patients who received medium or low quality nutritional services (defined as late or no intervention).<sup>2</sup>

## PART 2: MEASUREMENT

Resource: <http://www.eatrightpro.org/resource/practice/quality-management/quality-improvement/malnutrition-quality-improvement-initiative>

A key component to making patient care safer in your hospital is to track your progress toward improvement. This section outlines the suggested process and outcome measures that you could be collecting and submitting data as part of HRET HIIN. Collecting these monthly data points at your hospital will guide your quality improvement efforts as part of the Plan-Do-Study-Act (PDSA) process. Tracking your data in this manner will provide valuable information needed to study your data across time and help determine the effect your improvement strategies are having in your hospital at reducing patient harm. Furthermore, collecting these standardized metrics will allow the HRET HIIN to aggregate, analyze and report its progress toward reaching the project's 20/12 goals across all AEAs by September 27, 2018.

### Suggested Measures: Process and Outcome

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- > Completion of a Malnutrition Screening within 24 hours of Admission.
- > Completion of a Nutrition Assessment for Patients Identified as At-Risk for Malnutrition within 24 hours of a Malnutrition Screening.
- > Nutrition Care Plan for Patients Identified as Malnourished after a Completed Nutrition Assessment.
- > Appropriate Documentation of a Malnutrition Diagnosis.

## PART 3: APPROACHING MALNUTRITION

### > Suggested Bundles and Toolkits

- Alliance Nutrition Care Model and Toolkit (2015): <http://malnutrition.com/getinvolved/hospitalnutritiontoolkit>
- ASPEN Malnutrition Toolkit: [http://www.nutritioncare.org/Guidelines\\_and\\_Clinical\\_Resources/Toolkits/Malnutrition\\_Toolkit/](http://www.nutritioncare.org/Guidelines_and_Clinical_Resources/Toolkits/Malnutrition_Toolkit/)
- Defeat Malnutrition Today Toolkit: <http://mqii.defeatmalnutrition.today/mqii-toolkit.html>
- Fight Malnutrition In-hospital toolkit: <http://www.fightmalnutrition.eu/toolkit/hospital/toolkit-in-hospital-patients>

### > Clinical Guidelines

- Guidelines for the Provision and Assessment of Nutrition Support Therapy in the Adult Critically Ill Patients: Society of Critical Care Medicine and American Society (SCCM) for Parenteral and Enteral Nutrition (ASPEN) (Feb 2016) Retrieved at: <http://pen.sagepub.com/content/40/2/159.full.pdf+html>
- ASPEN Clinical Guidelines: Nutrition Screening, Assessment and Intervention in Adults (January 2011). Retrieved at: <http://pen.sagepub.com/content/35/1/16.full.pdf+html>

### > Resources

- Consensus Statement: Academy of Nutrition and Dietetics and ASPEN: Characteristics Recommended for Identification and Documentation of Pediatric Malnutrition (Undernutrition). Retrieved at: <http://ncp.sagepub.com/content/30/1/147.full.pdf+html>
- Addressing Disease-Related Malnutrition in Healthcare: A Latin American Perspective (Mar 2016) Retrieved at: <http://pen.sagepub.com/content/40/3/319.full.pdf+html>
- Critical Care Nutrition. <http://www.criticalcarenutrition.com/>
- ASPEN's Malnutrition Awareness Week™: <http://www.nutritioncare.org/maw/>

## Investigate Your Problem and Implement Best Practices

**DRIVER DIAGRAMS:** A driver diagram visually demonstrates the causal relationship between change ideas, primary drivers, secondary drivers and your overall aim. A description of each of these components is outlined in the table below. This change package is organized by reviewing the components of the driver diagram to: (1) help you and your care team identify potential change ideas to implement at your facility and (2) to show how this quality improvement tool can be used by your team to tackle new process problems.

AIM	PRIMARY DRIVER	SECONDARY DRIVER	Change Idea
		SECONDARY DRIVER	Change Idea
	PRIMARY DRIVER	SECONDARY DRIVER	Change Idea

**AIM:** A clearly articulated goal or objective describing the desired outcome. It should be specific, measurable and time-bound.

**PRIMARY DRIVER:** System components or factors that contribute directly to achieving the aim.

**SECONDARY DRIVER:** Action, interventions or lower-level components necessary to achieve the primary driver.

**CHANGE IDEAS:** Specific change ideas which will support or achieve the secondary driver.

## Drivers in This Change Package

REDUCE MALNUTRITION	ASSESS FOR AND DIAGNOSE MALNUTRITION AND THOSE AT NUTRITIONAL RISK	Use a validated screening tool to screen within 24 hours of admission to identify at risk or malnourished patients	Change Idea
		Nutrition assessment is triggered for all patients who are identified as having nutritional risk	Change Idea
		Promptly diagnose malnutrition	Change Idea
		Follow up regularly to reassess status and monitor response to interventions	Change Idea
	INTERDISCIPLINARY COLLABORATION THROUGH THE CONTINUUM OF CARE	Include nutrition consultation during interdisciplinary rounds	Change Idea
		Include nutrition in post discharge care coordination	Change Idea
		Optimize each discipline's role in nutrition management	Change Idea
	SUPPORT OPTIMAL NUTRITIONAL INTAKE	Feed patients as soon as possible, limit NPO status	Change Idea
		Monitor and support optimal consumption, ensure all supplements, enteral and parenteral supplements are consumed	Change Idea
		Provide a positive meal experience, support the patient with ordering, setting up and consuming meals	Change Idea
	ENGAGE THE PATIENT AND FAMILY IN THE NUTRITIONAL PLAN OF CARE	Provide education and resources to the patient and their caregiver that is sensitive to cultural and personal preferences and their post discharge circumstances	Change Idea



Primary Driver:

ASSESS FOR AND DIAGNOSE MALNUTRITION AND THOSE AT NUTRITIONAL RISK

Comprehensive nutrition screening of all hospitalized patients is critical for both timely identification of those at risk and to prioritize patients requiring a nutritional assessment and intervention.

**Secondary Driver > USE A VALIDATED NUTRITION SCREENING TOOL TO SCREEN WITHIN 24 HOURS OF ADMISSION TO IDENTIFY AT RISK OR MALNOURISHED PATIENTS <sup>9</sup>**

Using a validated screening tool to identify high risk patients is crucial. Validated tools include:<sup>4</sup>

- > Malnutrition Screening Tool (MST)
- > Mini Nutritional Assessment Short Form (MNA-SF)
- > Malnutrition Universal Screening Tool (MUST)
- > Nutrition Screening (NRS 2002)
- > Short Nutritional Assessment Questionnaire (SNAQ)

As of 2012, the American Nutrition and Dietetic Academy (AND) and ASPEN no longer recommend inflammatory biomarkers (i.e., serum albumin and pre-albumin) for diagnosis of malnutrition. It is well-documented that serum albumin or pre-albumin serum levels are affected not only by nutrition status but also by inflammation, fluid status and other factors.<sup>10</sup>

**Change Ideas**

- > Screen every patient as part of the admission workflow (See Nutrition Care Algorithm Appendix 1).
- > Engage front-line clinicians in selecting the screening tool that is practical, easy to administer and does not require nutritional knowledge.<sup>4</sup>
- > Educate physicians and nurses on the evidence that pre-albumin and serum albumin levels are no longer recommended as an assessment of nutritional status.

**Suggested Process Measures for Your Test of Change**

- Percentage of patients who had a nutritional screen completed upon admission

**Secondary Driver > NUTRITION ASSESSMENT IS TRIGGERED FOR ALL PATIENTS WHO ARE IDENTIFIED AS HAVING NUTRITIONAL RISK <sup>9</sup>**

A nutrition assessment performed by a nutrition support clinician is a rigorous process that includes obtaining a diet and medical history, current clinical status, anthropometric data, laboratory data, physical assessment information and often functional and economic information. Subsequently, the clinician will usually estimate nutrient requirements and select a treatment plan. Regular rescreening and reassessment should be considered as part of a continuous process.<sup>9</sup> Early identification and accurate documentation of clinical criteria supporting malnutrition diagnosis is important to secure reimbursement for nutritional care services.

**Change Ideas**

- > Integrate the nutritional assessment into the interdisciplinary assessment process.
- > Use electronic medical record (EMR) triggers to automate nutritional consults.
- > Include nutrition in interdisciplinary rounds.
- > Consider the role of a nutrition support nurse to conduct assessments and coordinate care across the continuum if a registered dietician is not available.<sup>11</sup>



### Suggested Process Measures for Your Test of Change

- Percentage of at-risk patients who had a nutritional assessment completed within the organizations defined timeframe

### Secondary Driver > PROMPTLY DIAGNOSE MALNUTRITION

The Academy of Nutrition and Dietetics and ASPEN have a standardized set of diagnostic criteria for adult malnutrition in routine clinical practice using etiology based definitions:

- > Starvation-related malnutrition — pure chronic starvation or anorexia nervosa
- > Chronic disease-related malnutrition — organ failure, pancreatic cancer or sarcopenic obesity
- > Acute disease or injury related malnutrition — major infections, burns or trauma

In addition, they have developed a standardized set of diagnostic criteria and propose that malnutrition be diagnosed when two of the following six criteria are present:

- > Insufficient energy intake
- > Weight loss
- > Loss of subcutaneous fat
- > Loss of muscle mass
- > Localized or generalized fluid accumulation that may mask weight loss
- > Diminished functional status

Accurate documentation and coding of malnutrition as a complicating diagnosis is critical to ensure appropriate reimbursement for the nutritional services provided.<sup>4</sup>

### Change Ideas

- > Leverage the EMR to support documentation of malnutrition characteristics.
- > When present, ensure coding of mild, moderate or severe malnutrition as a complicating diagnosis code (Appendix III).

### Suggested Process Measures for Your Test of Change

- Percentage of patients screened as high risk that have adequate documentation of malnutrition

### Secondary Driver > FOLLOW UP REGULARLY TO REASSESS STATUS AND MONITOR RESPONSE TO INTERVENTIONS

Patients are at-risk for developing malnutrition or becoming at-risk during their hospitalization and should be reassessed periodically to screen for risk and to monitor the patient's response to interventions.

### Change Ideas

- > Establish a practice to periodically re-screen the patients, at least weekly, for nutritional risk at regular intervals and with changes in condition.
- > Include nutrition status in interdisciplinary rounds.
- > Establish reliable systems to collect accurate patient weights weekly.

### Suggested Process Measures for your Test of Change

- Percentage of patients with a length of stay greater than seven days that have been re-screened for nutritional risk





**Hardwire the Process**

Leverage the EMR to support effective screening, triggering of nutritional consults and to support documentation of malnutrition to optimize reimbursement. Clearly define screening, re-screening and assessment roles and responsibilities between nursing, providers and dietitians.

**Primary Driver:**

**INTERDISCIPLINARY  
COLLABORATION  
THROUGH THE  
CONTINUUM OF CARE.**

Successful management of hospital malnutrition requires an interdisciplinary team approach and leadership that fosters open communication among disciplines. To be successful, all members of the health care team must understand the importance of nutritional care in improving patient outcomes, as well as the potential financial impact of failing to address this problem.<sup>4</sup>

**Secondary Driver > INCLUDE NUTRITION CONSULTATION DURING INTERDISCIPLINARY ROUNDS**

**Change Ideas**

- > Hospitalists must add nutrition to their interdisciplinary approach to care and include nutritional care in the daily problem list.<sup>4</sup>
- > Include a representative from nutritional services in interdisciplinary rounds.
- > Consider the inclusion of a nutrition support nurse to support assessments and coordination of care.<sup>11</sup>

**Suggested Process Measures for your Test of Change**

- Percentage of patient records that include nutritional care in the daily problem list

**Secondary Driver > INCLUDE NUTRITION IN POST-DISCHARGE CARE COORDINATION**

A comprehensive, systematic approach to managing nutrition from admission to discharge and beyond is needed to effectively improve quality of nutrition care. There is risk that the goals achieved in the inpatient setting can be lost if continuity of care is not adequately addressed at the time of discharge.<sup>12</sup> Malnourished patients are at greater risk for readmission, all cause 30 day readmission rates of 23% compared to 14.9% in non-malnourished patients.<sup>20</sup>

**Change Ideas**

- > Include the nutritional plan of care in post-discharge care planning and documented in the discharge summary.
- > Adapt post-discharge phone calls to include questions about dietary intake, weight change and access to food. Dietitians or nutritional support nurses should be used to manage post-hospital transitions for patients with a diagnosis of malnutrition.<sup>4</sup>
- > Ensure follow up appointments are made for high-risk or malnourished patients.
- > Consider oral nutritional supplements for nutritionally compromised individuals and continue after discharge to support adequate energy intake.<sup>17</sup>

**Suggested Process Measures for Your Test of Change**

- Percentage of patients discharged with a diagnosis of malnutrition who have documentation of a post-discharge nutrition plan

**Secondary Driver > OPTIMIZE EACH DISCIPLINE’S ROLE IN NUTRITION MANAGEMENT**

All health care professionals involved in patient care must be empowered to provide optimal nutritional care. However, in many hospitals the responsibility for nutrition recommendations almost always rests solely with the dietitian. Many institutions lack nurse and physician leaders who champion nutrition care. Interdisciplinary leadership is essential to ensure that nutrition care is valued and prioritized. Physicians, nurses and administration must play a role in order to ensure effective management of hospital malnutrition.



### Change Ideas

Listed below are recommendations for roles within the nutrition care team:

- > Dieticians lead the team in advancing nutrition care
  - Conduct nutrition assessment, including nutrition-focused physical exam, on all high-nutrition-risk patients.
  - Identify patients meeting criteria for malnutrition.
  - Develop and implement a treatment plan and follow-up regularly to assess status changes, monitor response to interventions and make changes to the plan as necessary.
  - Order nutrition plan of care.
  - Grant ordering privileges for diets, nutrition related laboratory exams, oral nutrition supplements, patient weights, zinc and vitamin C.

Hospitals should consider alternative roles to augment the work of the clinical dietician such as a nutrition support nurse, nutrition support nurse practitioner or dietetic technician, registered (DTR)<sup>13</sup> for some of these responsibilities.<sup>11</sup>

- > Hospitalist/Provider
  - Documents mild, moderate or severe malnutrition with criteria for diagnosis to aid in proper coding.
  - Serves as nutrition champion.
  - Remains mindful of holds on oral diets or enteral nutrition.
  - Considers nutritional status as an essential component of assessment, monitoring and care plans.
  - Supports automated nutrition interventions within 24 hours if a patient is at-risk during screening.

- > Nurse or DTR
  - Performs initial screen referring high nutrition risk patients to dietician for assessment.
  - Manages mealtime and monitoring of consumption.
  - Conducts regular follow-up, referring patients with poor intake or weight loss to dietician.
  - Collects accurate patient weights at least weekly.

- > Nurse
  - Administers parenteral or enteral nutrition as ordered by minimizing interruptions in administration.
  - Considers protocols for nurses to advance diets or resume feedings as soon as possible.
  - Reinforces the importance of nutritional care and follow up post discharge care

- > Administration
  - Allocates resources and provides structure to make nutritional care a priority.
  - If present, ensures that mild, moderate and severe malnutrition is included as a complicating condition in coding processes.

### Hardwire the Process

Optimal nutritional care can be challenging because clinicians do not prioritize nutrition among their competing priorities. Furthermore, nurses and physicians receive little formal education on nutrition care. Failing to prioritize nutrition in an organization can have widespread negative consequences, such as higher rates of pressure ulcers/injuries, readmissions and increased length of stay. Through allocating resources for adequate detection, documentation and treatment of malnutrition, hospitals can experience improved clinical outcomes and increased reimbursement.



## Primary Driver:

### SUPPORT OPTIMAL NUTRITIONAL INTAKE.

Consuming meals and prescribed feedings can be a challenge for hospitalized patients. Patients report the top barriers for food intake are not being given food when meals are missed, being interrupted at meals or during feedings, not wanting the ordered food, loss of appetite and feeling too sick or tired to eat. In addition, hospitalized patients may be faced with functional limitations, impairing their ability to feed themselves in a timely manner.



### Secondary Driver > FEED PATIENTS AS SOON AS POSSIBLE, LIMIT NPO STATUS

Early initiation of enteral feedings in the ICU (within 24 – 48 hours) for critically ill patients has shown a reduction in hospital mortality, especially when the patient is on multiple vasopressors. This has led to a recommendation in the Canadian Clinical Practice Guidelines that supports early versus late enteral feedings for critically ill patients.<sup>14</sup> Pre-operative fasting actually increases the metabolic stress, hyperglycemia and insulin resistance, which the body is already prone to during the surgical process.<sup>21</sup>

Enhanced recovery after surgery (ERAS) protocols are multimodal perioperative care pathways, for patients undergoing colorectal, vascular or thoracic surgery or radical cystectomy. The key principles of the ERAS protocol include pre-operative counseling, preoperative nutrition, avoidance of perioperative fasting and carbohydrate loading up to two hours pre-operatively, standardized anesthetic and analgesic regimens (epidural and non-opioid analgesia) and early mobilization.<sup>22</sup>

#### Change Ideas

- > Target initiating feeding as soon as possible for critically ill patients, unless specific contraindications exist.
- > Establish protocols where a patient screened as high risk will be fed within 24 hours while awaiting a nutritional consult, unless contraindicated.
- > Integrate ERAS nutritional care recommendations for patients undergoing colorectal, vascular, or thoracic surgery or radical cystectomy.

#### Suggested Process Measures for your Test of Change

- Percentage of ICU admissions that receive feedings within 24 hours of admission

### Secondary Driver > MONITOR AND SUPPORT OPTIMAL CONSUMPTION. ENSURE ALL SUPPLEMENTS, ENTERAL AND PARENTERAL SUPPLEMENTS ARE CONSUMED.

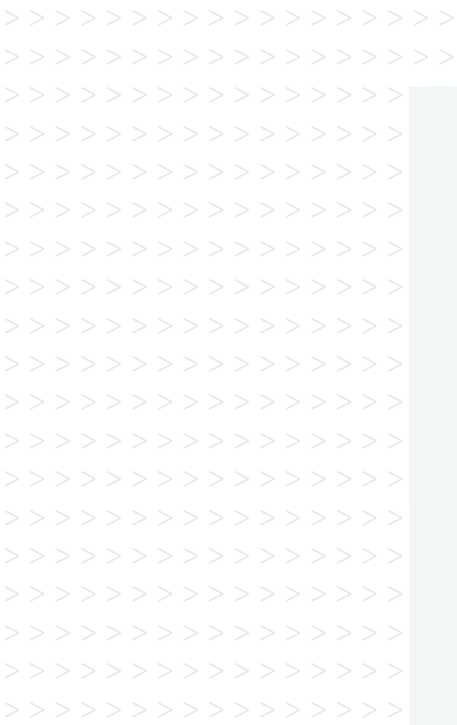
#### Change Ideas

- > Consider high protein oral nutritional supplements (ONS) for patients with disease-related malnutrition.<sup>15</sup>
- > Consider high protein ONS for patients at risk for pressure ulcer/injury or those with healing pressure ulcers/injuries.<sup>16</sup>
- > Consider ONS for older patients during acute illness to supplement the normal hospital diet.<sup>17</sup>
- > Ensure supplements are consumed as ordered. Provide supplements at medication times and document consumption in the medication record.
- > Avoid turning off parenteral or enteral feedings for repositioning, transports, etc.
- > Design systems for patients to order meals or snacks at “off times.”
- > Assign staff to conduct rounds at the conclusion of meals to monitor intake and report insufficient intake to the dietician so adjustments can be made.

#### Suggested Process Measures for your Test of Change

- Percentage of high nutrition risk patients that have intake documented

### Secondary Driver > PROVIDE A POSITIVE MEAL EXPERIENCE. SUPPORT THE PATIENT WITH ORDERING, SETTING UP AND CONSUMING MEALS.



**Change Ideas**

- > Align staffing coverage to support patient meals. Institute a “no staff break” rule during patient meal times or use support staff to ensure each patient receives a meal and is set up or supported in feeding.
- > Create a positive dining experience. Conduct rounds prior to meals to remove urinals, bed pans and any items creating unpleasant odors.
- > Develop a process for patients to complete hand hygiene prior to meals.
- > Round on patients at meal times to assess the environment and quality of the food delivered.
- > Discuss patients needing assistance with meals in team huddles. Ensure each patient requiring assistance has an assigned staff person for each meal.

**Suggested Process Measures for your Test of Change**

- Percentage of shifts in which all assigned nursing staff are on the unit or floor to support patient mealtime

**Hardwire the Process**

Because nutritional care may not be a high priority for staff, supporting nutritional care requires resources and structures. Assigning staff to attend to the pre-meal environment and monitor consumption as specific unit tasks can help build reliability into the process.

**Primary Driver:**

**ENGAGE THE PATIENT AND FAMILY IN THE NUTRITIONAL PLAN OF CARE.**

Patients and family members are rarely educated adequately on nutritional care by the hospital team.<sup>18</sup> For this reason, it is recommended that clinicians include nutrition into all clinical conversations with patients and families.

**Secondary Driver > PROVIDE EDUCATION AND RESOURCES TO THE PATIENT AND THEIR CAREGIVER THAT IS SENSITIVE TO CULTURAL AND PERSONAL PREFERENCES AND THEIR POST DISCHARGE CIRCUMSTANCES.**

**Change Ideas**

- > Ask a patient/family advisor to assist in developing or critiquing nutritional care discharge instructions.
- > Involve the caregiver in nutritional care education. Use teach-back.
- > Ensure adequate dietician or nursing resources for counseling, education and reinforcement of the nutritional plan.
- > Engage case managers and discharge planners in supporting the post-discharge nutrition plan.

**Suggested Process Measures for your Test of Change**

- Percentage of high-risk or malnourished patients that have documentation of nutritional counseling with teach-back

**Hardwire the Process**

Design patient/family engagement processes to support targeted counseling with a dietician or DTR for primary education at the bedside. Nursing should also participate to reinforce the message. Allocating resources to complete the education and counseling will support the reliable delivery of the services.

## Choice of Tests and Interventions for Malnutrition Reduction:

IMPLEMENT SMALL TESTS OF CHANGE		Choose a nutritional risk screening tool to adopt
<b>PLAN</b>	After the nutritional care committee reviews the nutritional risk screening tools with front-line staff, the team decides to test the standardized MST with one nurse and one patient, then reviews the findings with the dietician.	
<b>DO</b>	The nurse implements the screening tool on paper and finds that the tool was easy to use with alert, oriented, low-risk patients. The screening results are then entered into the EMR and the dietary office receives the consult order.	
<b>STUDY</b>	The MST tool worked well when the patient could report their intake and weight loss history. The screening results entered into the EMR on an at-risk patient did produce an automated order.	
<b>ACT</b>	For the second round, test the tool with three patients with at least one having cognitive impairment and one having a known risk.	

## Potential Barriers

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> Elevating nutritional care to be a hospital priority requires an understanding of the current state of hospital care processes and barriers for optimal care. In a survey of 1,777 clinicians, only 50 percent of respondents reported that a nutritional screen was completed on admission and only 37 percent were completed within 24 hours. The most common barrier cited was insufficient personnel (29.5 percent), with additional barriers including inadequate resources (7.7 percent), insufficient expertise and policies requiring an order from a provider.<sup>19</sup>

### Enlist Administrative Leadership as Sponsors to Help Remove or Mitigate Barriers

> Addressing malnutrition in hospitalized patients requires full support from leadership to address barriers that are predominantly resource-based. By allocating resources to provide high quality nutritional services, defined as services that are both prompt and used often, many positive outcomes can be achieved including reduced length of stay and readmissions. The burden of care must be adequately documented by indicating mild, moderate or severe malnutrition as a contributing comorbidity for coding purposes to ensure the organization is reimbursed appropriately to deliver the level of care that improves outcomes. Enlist the support of the chief financial officer and health information systems leader to assess reimbursement gaps that can be improved in order to fund the staffing necessary to provide reliable services.

## Change Not Only the “Practice” but Also the “Culture”

- > In order to make progress in alleviating malnutrition in hospitals, stakeholders, including clinicians and administrators, must fully understand the pervasiveness of hospital malnutrition and the effect that patient nutrition can have on overall outcomes. Raise awareness of nutritional care gaps and begin to create infrastructure to support optimal care. Note patterns of consumption or round on units during mealtimes to assess the environment and availability of assistance. Review your findings and realign resources and schedules to support the patients’ needs. Integrate nutrition into all clinical patient rounds and discharge planning activities to support the growth of a nutritionally responsive culture.

## PART 4: CONCLUSION AND ACTION PLANNING

Malnutrition is a pervasive problem; at least one third of patients are malnourished upon admission while others can become malnourished during their hospitalization. Malnourished patients are at much higher risk for pressure ulcers/injuries, CAUTI, readmission and injurious falls. Treating malnourishment as a hospital priority can be a cross-cutting approach that can impact multiple harms and reduce length of stay.

To get started in addressing malnutrition, first assess your organization’s current ability to screen, assess and execute nutritional plans of care for malnourished or at-risk patients. By attending to malnutrition and assessing documentation, coding and reimbursement opportunities, administrators have an opportunity to correct documentation deficiencies in coding mild, moderate or severe malnutrition and achieve the reimbursement to expand nutritional services to meet the needs of the patients.



# PART 5: APPENDICES


## APPENDIX I: TOP TEN CHECKLIST

**Associated Hospital/Organization:** HRET HIIN

**Purpose of Tool:** A checklist to review current or initiate new interventions for malnutrition prevention in your facility

**Reference:** [www.hret-hiin.org](http://www.hret-hiin.org)

### Malnutrition Top Ten Checklist

-  Evaluate the current state of malnutrition screening, assessment and nutritional care planning. Assess the effectiveness of current work flows.
-  Screen all patients for malnutrition and nutritional risk upon admission.
-  Conduct a comprehensive nutritional assessment within 24-48 hours for patients who screen positive for malnutrition or nutrition risk.
-  Implement interventions rapidly. Activate diets, parenteral or enteral feedings as soon as possible. Build protocols to support activation of feedings while awaiting nutritional assessment.
-  Diagnose and document mild, moderate, or severe malnutrition to support adequate reimbursement for nutritional services.
-  Minimize fasting or interrupting feedings as much as possible to optimize intake. Implement ERAS nutritional guidelines for patients undergoing colorectal, thoracic and vascular surgery and radical cystectomy.
-  Provide a positive meal experience for patients. Support ordering, set up and feeding to optimize the patient's intake. Monitor oral consumption and report and address poor intake.
-  Communicate the patient's nutritional status and plan in the interdisciplinary plan of care, during clinical rounds and during handoffs.
-  Provide nutritional care discharge planning. Include the nutritional care plan in discharge summaries, post-hospitalization handoffs and in post-discharge phone calls.
-  Partner with patients and their caregivers in making nutritional care choices and in learning and understanding their post-discharge nutritional care plan. Use teach-back to ensure understanding.

## APPENDIX II: NUTRITION CARE ALGORITHM

**Associated Hospital/Organization:** ASPEN

**Purpose of Tool:** A reference tool to guide the clinician in screening, assessing and intervening for patients at risk or with malnutrition.

**Reference:** Ukleja A et al. Nutr Clin Pract 2010;25:403-414). Copyright © by The American Society for Parenteral and Enteral Nutrition). Retrieved 7.1.17 at: [https://www.nutritioncare.org/Guidelines\\_and\\_Clinical\\_Resources/Toolkits/Malnutrition\\_Toolkit/Nutrition\\_Care\\_Algorithm/](https://www.nutritioncare.org/Guidelines_and_Clinical_Resources/Toolkits/Malnutrition_Toolkit/Nutrition_Care_Algorithm/)

## APPENDIX III: CLINICAL CHARACTERISTICS FOR DOCUMENTATION TO SUPPORT DIAGNOSIS OF MALNUTRITION

**Associated Hospital/Organization:** AND and ASPEN

**Purpose of Tool:** A reference tool for clinicians to use to quantify mild, moderate and severe malnutrition.

**Reference:** Tappenden K, Quatrara B, Parkhurst M, Malone A, Fanjiang G, Ziegler T. (2013) Critical Role of Nutrition in Improving Quality of Care: an Interdisciplinary Call to Action to Address Adult Hospital Malnutrition. *J Acad Nutr Diet.* 2013; 113:1219-1237

**Table 2.** Academy of Nutrition and Dietetics and American Society for Parenteral and Enteral Nutrition clinical characteristics that the clinician can obtain and document to support a diagnosis of malnutrition<sup>a</sup>

Clinical characteristic <sup>b</sup>	Malnutrition in the Context of Acute Illness or Injury		Malnutrition in the Context of Chronic Illness		Malnutrition in the Context of Social or Environmental Circumstances	
	Moderate <sup>c</sup>	Severe <sup>d</sup>	Moderate	Severe	Moderate	Severe
(1) Energy intake: malnutrition is the result of inadequate food and nutrient intake or assimilation; thus, recent intake compared with estimated requirements is a primary criterion defining malnutrition. The clinician may obtain or review the food and nutrition history, estimate optimum energy needs, compare them with estimates of energy consumed, and report inadequate intake as a percentage of estimated energy requirements over time.	<75% of estimated energy requirement for >7 days	≤50% of estimated energy requirement for ≥5 days	<75% of estimated energy requirement for ≥1 mo	≤75% of estimated energy requirement for ≥1 mo	<75% of estimated energy requirement for ≥3 mo	≤50% of estimated energy requirement for ≥1 mo
(2) Interpretation of weight loss: The clinician may evaluate weight in light of other clinical findings, including the presence of under- or overhydration. The clinician may assess weight change over time reported as a percentage of weight lost from baseline. <b>Physical findings</b> Malnutrition typically results in changes to the physical examination. The clinician may perform a physical examination and document any one of the physical examination findings below as an indicator of malnutrition.	% Time 1-2 1 wk 5 1 mo 7.5 3 mo	% Time >2 1 wk >5 1 mo >7.5 3 mo	% Time 5 1 mo 7.5 3 mo 10 6 mo 20 1 y	% Time >5 1 mo >7.5 3 mo >10 6 mo >20 1 y	% Time 5 1 mo 7.5 3 mo 10 6 mo 20 1 y	% Time >5 1 mo >7.5 3 mo >10 6 mo >20 1 y

**Table 2.** Academy of Nutrition and Dietetics and American Society for Parenteral and Enteral Nutrition clinical characteristics that the clinician can obtain and document to support a diagnosis of malnutrition<sup>a</sup> (continued)

Clinical characteristic <sup>b</sup>	Malnutrition in the Context of Acute Illness or Injury		Malnutrition in the Context of Chronic Illness		Malnutrition in the Context of Social or Environmental Circumstances	
	Moderate <sup>c</sup>	Severe <sup>d</sup>	Moderate	Severe	Moderate	Severe
(3) Body fat: Loss of subcutaneous fat (eg, orbital, triceps, fat overlying the ribs).	Mild	Moderate	Mild	Severe	Mild	Severe
(4) Muscle mass: Muscle loss (eg, wasting of the temples, clavicles, shoulders, interosseous muscles, scapula, thigh, and calf).	Mild	Moderate	Mild	Severe	Mild	Severe
(5) Fluid accumulation: The clinician may evaluate generalized or localized fluid accumulation evident on examination (extremities, vulvar/scrotal edema, or ascites). Weight loss is often masked by generalized fluid retention (edema), and weight gain may be observed.	Mild	Moderate to severe	Mild	Severe	Mild	Severe
(6) Reduced grip strength: Consult normative standards supplied by the manufacturer of the measurement device.	NA <sup>e</sup>	Measurably reduced	NA	Measurably reduced	NA	Measurably reduced

<sup>a</sup>Adapted with permission from White and colleagues.<sup>11</sup> Height and weight should be measured rather than estimated to determine body mass index. Usual weight should be obtained to determine the percentage and to determine the significance of weight loss. Basic indicators of nutrition status such as body weight, weight change, and appetite may improve substantially with refeeding in the absence of inflammation. Refeeding and/or nutrition support may stabilize but not significantly improve nutrition parameters in the presence of inflammation. The National Center for Health Statistics defines chronic as a disease/condition lasting ≥3 months. Serum proteins such as serum albumin or prealbumin are not included as defining characteristics of malnutrition because recent evidence analysis shows that serum levels of these proteins do not change in response to changes in nutrient intake.

<sup>b</sup>A minimum of 2 of the 6 characteristics is recommended for diagnosis of either severe or nonsevere malnutrition.

<sup>c</sup>The International Classification of Diseases, 9th Revision (ICD-9) code for moderate malnutrition is 263.0.

<sup>d</sup>The International Classification of Diseases, 9th Revision (ICD-9) code for severe malnutrition is 263.0.

<sup>e</sup>NA=not applicable.

## PART 6: REFERENCES

1. Guenter, P et al (2015, Oct) Addressing Disease-Related Malnutrition in Hospitalized Patients: A Call for a National Goal. *The Joint Commission Journal on Quality and Patient Safety*, 41(10).
2. Barker LA, Gout BS, Crowe TC. Hospital malnutrition: Prevalence, Identification and Impact on Patients and the Healthcare System. *Int J Environ Res Public Health*. 2011;8(2):514–527.
3. Somanchi M, Tao X, Mullin GE. The Facilitated Early Enteral and Dietary Management Effectiveness Trial in Hospitalized Patients with Malnutrition. *JPEN J Parenter Enteral Nutr*. 2011;35(2):209–216.
4. Tappenden K, Quatrara B, Parkhurst M, Malone A, Fanjiang G, Ziegler T. Critical Role of Nutrition in Improving Quality of Care: An Interdisciplinary Call to Action to Address Adult Hospital Malnutrition. *J Acad Nutr Diet*. 2013; 113:1219-1237.
5. Corkins MR, et al. Malnutrition Diagnoses in Hospitalized Patients: United States, 2010. *JPEN J Parenter Enteral Nutr*. 2014;38(2):186–195.
6. Braunschweig C, Gomez S, Sheean PM. Impact of Declines in Nutritional Status on Outcomes in Adult Patients Hospitalized for More Than 7 Days. *J Am Diet Assoc*. 2000;100(11):1316–1322; quiz 1323–1324.
7. Allaudeen N, et al. Redefining Readmission Risk factors for General Medicine Patients. *J Hosp Med*. 2011;6(2):54–60.
8. Krumholz HM. Post-Hospital Syndrome—An Acquired, Transient Condition of Generalized Risk. *N Engl J Med*. 2013 Jan 10;368(2):100–102.
9. Mueller C, Compher C, Druyan M, American Society for Parenteral and Enteral Nutrition (ASPEN) Board of Directors: Nutrition Screening, Assessment and Interventions in Adults. *Journal of Parenteral and Enteral Nutrition*. Jan 2011 35(1) 16-24
10. White JV, Guenter P, Jensen G, Malone A, Schofield M. Consensus Statement of the Academy of Nutrition and Dietetics/American Society for Parenteral and Enteral Nutrition: Characteristics Recommended for the Identification and Documentation of Adult Malnutrition (undernutrition). *J Acad Nutr Diet*. 2012;112(5):730-738.
11. DiMaria-Ghalili, Gilbert K, Lord L, Neal T, Richardson D, Tyler R, Guenther P. Standards of Nutritional Care Practice and Professional Performance for Nutrition Support and Generalist nurses. *Nutrition in Clinical Practice*. Aug 2016. 31(4) 527-547.
12. Kirkland LL, Kashiwagi DT, Brantley S, Scheurer D, Varkey P. Nutrition in the hospitalized patient. *J Hosp Med*. 2013;8(1):52-58.
13. Getz L. Effectively Using Dietetic Technicians – Building the Right Relationship Can Boost Your Practice. *Today's Dietician*. Sep 2011. 13(9) 20. Retrieved on 12/29/16 at: <http://www.todaysdietitian.com/newarchives/090111p20.shtml>
14. Khalid D, DiGiovine B. Early Enteral Nutrition and Outcomes of Critically Ill Patients Treated with Vasopressors and Mechanical Ventilation. May 2010. *Am J of Crit Care*. 19(3):261-8.
15. Cawood A Et al. Systematic Review and Meta-analysis of the Effects of High Protein Oral Nutritional Supplements. *Ageing Research Reviews* 2012; 11: 278-296.
16. Stratton RJ et al. Enteral Nutritional Support in Prevention and Treatment of Pressure Ulcers: A Systematic Review and Meta-analysis. *Ageing Research Reviews* 2005; 4: 422-450.
17. Gariballa S et al. A Randomized, Double-blind, Placebo Controlled Trial of Nutritional Supplementation During Acute Illness. *Am J Med* 2006; 119: 693-699.
18. Murphy JL, Girot EA. The Importance of Nutrition, Diet and Lifestyle Advice for Cancer Survivors—The Role of Nursing Staff and Interprofessional Workers. *J Clin Nurs*. 2013;22(11-12):1539-1549.
19. Patel V. Nutritional Screening and Assessment in Hospitalized Patients. A Survey of Current Practices in the United States. *Nutr Clin Pract*. 2014;29(4) 483-490.
20. Fingar KR, Weiss AJ, Barrett ML, Elixhauser A, Steiner CA, Guenter P, Brown MH. All-Cause Readmissions Following Hospital Stays for Patients With Malnutrition, 2013. *HCUP Statistical Brief #218*. December 2016. Agency for Healthcare Research and Quality, Rockville, MD. Retrieved 4.14.17 at <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb218-Malnutrition-Readmissions-2013.pdf>.
21. Thorell A, Nygren J, Ljungqvist O. Insulin resistance: a marker of surgical stress. *Curr Opin Clin Nutr Metab Care*. 1999;2:69–78.
22. Melnyk M, Casey R, Black P, Koupparis A. Enhanced recovery after surgery (ERAS) protocols: Time to change practice? *Can Urol Assoc J*. 2011 Oct; 5(5) 342-348.
23. Frye De, et al. Patient Characteristics and the occurrence of never events. *Arch Surg*, 2010;145(2):148-151

