

November 13, 2015

Don Wright, MD, MPH  
Deputy Assistant Secretary, Office of Disease Prevention and Health Promotion  
U.S. Department of Health and Human Services  
Tower Building, Suite LL100  
1101 Wootton Parkway  
Rockville, MD 20852

Dear Dr. Wright:

In response to the U.S. Department of Health and Human Services' open comment period for the Healthy People 2020 Objectives, the DefeatMalnutrition.Today Coalition is submitting two new objectives. The objectives have been submitted directly via HealthyPeople.gov. However, due to the detailed nature of the comments and clinical references, we are also providing our comments in writing.

The DefeatMalnutrition.Today coalition was recently formed to address senior malnutrition and its goals are: 1) achieve the recognition of malnutrition as a key indicator and vital sign of older adult health and 2) work to achieve a greater focus on malnutrition screening and intervention through regulatory and/or legislative change across the nation's health care system.

Understanding that public participation helps shape the framework, objectives, and targets of *Healthy People 2020*, we are offering the two new objectives on malnutrition for consideration in the existing *Healthy People 2020* topic area of Older Adults. The two new objectives address a critical public health issue—the nutritional status of older adults. The following pages provide the rationale and measures as well as describe how the new objectives meet the nine specific *Healthy People 2020* objective selection criteria. We would be happy to provide any further information requested.

Sincerely,

Members of the DefeatMalnutrition.Today Coalition

In conjunction with  
The Healthcare Nutrition Council

Encs.

## **Add a new objective for Older Adults**

### **PROPOSED OBJECTIVE**

*Increase recognition, diagnosis, documentation, and coding of disease-related malnutrition among hospitalized older adults and those presenting in emergency departments*

#### 2020 Baseline

2013: Less than 8% of malnourished older adults (65+ years) presenting for acute care (either hospitalized or in emergency departments) had a coded diagnosis of malnutrition.

(Calculation: Based on 2013 HCUP NIS data, there were 12,488,372 in-hospital stays of adults 65 years and older and 942,595 had a malnutrition diagnosis code, or 7.55%.

Based on 2012 HCUP NEDS data, there were 23,097,740 emergency department visits by adults 65 years and older and 655,820 had a malnutrition diagnosis code, or 2.84%. Database source: <http://hcupnet.ahrq.gov/>)

#### 2020 Target

9% of older adults (65+ years) who are malnourished and present for acute care (either hospitalized or in emergency departments) will have a coded diagnosis of malnutrition at the time of discharge.

### **RATIONALE**

(Excerpted from: Guenter P, Jensen G, Patel V, et al: Addressing disease-related malnutrition in hospitalized patients: a call for a national goal. *Jt Comm J Qual Patient Saf.* 2015;41(10):469-473. Note: Reference numbers changed for consistency)

#### **Current State of Malnutrition in Hospitalized Patients**

*"...disease-related malnutrition is defined as "undernutrition as a result of a disease process," which may be present on admission or acquired during a hospitalization. Undernutrition may occur even in the face of a high body mass index (BMI), as it is common for obese patients to be undernourished in the setting of disease or surgery.<sup>1</sup>"*

*"It is estimated that at least one third of patients in developed countries are malnourished on admission to the hospital,<sup>2-5</sup> and, if left untreated, approximately two thirds of those patients will experience a further decline in their nutrition status during their hospitalization.<sup>5,6</sup> Malnutrition continues to be underdiagnosed in many hospitals,<sup>6-9</sup> and approximately one third of patients who are not malnourished on admission may become malnourished while hospitalized.<sup>10</sup> A recently published study of the prevalence of malnutrition among older patients presenting to an emergency department found that 16% were malnourished and that 60% were either malnourished or at risk for malnutrition.<sup>11</sup>"*

*"The need to identify at-risk patients is vital in that malnutrition is associated with an increased risk of pressure ulcers and impaired wound healing, immune suppression and higher infection rates, higher treatment costs, and increased mortality.<sup>2</sup> In an epidemiologic analysis of 887,189 major surgery cases drawn from the Healthcare Cost and Utilization Project (HCUP) Nationwide [National] Inpatient Sample (NIS), malnutrition was associated with an increased risk of severe events. Patients with malnutrition were 4 times more likely to develop pressure ulcers, 2 times more likely to develop surgical site infections, 16 times more likely to develop intravascular device infections, and 5 times more likely to develop catheter-associated urinary tract infections.<sup>12</sup>"*

*"Furthermore, poor clinical outcomes associated with malnutrition contribute to higher hospitalization costs, as reflected in the longer length of stay (LOS) and increased readmissions associated with the higher rates of infections, pressure ulcers, impaired wound healing, and other adverse outcomes experienced by malnourished Patients.<sup>8,13</sup> For example, Corkins et al. found that patients diagnosed with malnutrition had hospital costs and LOS three times higher than those without this diagnosis.<sup>9</sup>"*

### **Current State of Recognition, Diagnosis, and Coding of Patients with Malnutrition**

“In 2012, according to the NIS, there were 36,484,846 hospital discharges in the United States, with an average LOS of 4.5 days, including...12,704,704 hospital discharges of patients 65 years of age or older (34.8%).<sup>14</sup> Only 1,326,300 (3.6%) of all these hospital discharges had a coded diagnosis of malnutrition, but 772,195 (58.2%) of them were in these vulnerable age categories.<sup>14</sup> This apparent undercoding (compared with earlier cited data on the incidence of malnutrition<sup>14</sup>), we believe, is due to underrecognition and underreporting, as well as underestimation of the importance of this comorbid condition on patient outcomes. According to the Agency for Healthcare Research and Quality (AHRQ), administration of enteral and parenteral nutrition was the 14th most frequent procedure in 2011, increasing in frequency by 85% from 1997, when it was not among the top 15 procedures.<sup>15</sup> The frequency of these therapies, which are given exclusively for the prevention or treatment of malnutrition, also suggest a greater incidence of malnutrition than indicated by the NIS malnutrition data.”

### **The Cost of Malnutrition**

“The cost of malnutrition was illustrated in two studies reporting health economic analyses of patients with disease-associated malnutrition.<sup>16,17</sup> In one study, the most costly complication associated with poor nutrition status was acute respiratory infection, which adds up to an additional \$13,350 to \$19,530 per hospitalization.<sup>16</sup> The second study estimated the annual economic burden of disease-associated malnutrition be \$156.7 billion.<sup>17”</sup>

The economic burden of disease-associated malnutrition in the U.S. for those aged 65+ is estimated to be \$51.3 billion per year.<sup>17</sup>

### **Addressing Malnutrition as a National Goal**

“Malnutrition in hospitalized patients, particularly those with acute disease-related etiology such as very advanced or severe disease states, is at times inevitable. However, it should not simply result from a lack of attention from clinicians or a lack of hospital resources. It is not that malnutrition will be a “never event,” but the absence of timely nutrition assessment, diagnosis, and implementation of a care plan in patients at risk for malnutrition or with preexisting malnutrition should be a “never event.” As one indication of growing awareness of the importance of malnutrition as a safety issue, malnutrition is one of the five patient safety risk areas represented in the 2015 Leapfrog Group Hospital Survey—the others being falls, pneumatic tourniquets, aspiration, and workforce fatigue.<sup>18”</sup>

### **Conclusion**

Although disease-related malnutrition has generally not been treated as a “patient safety” issue, the impact and scope of this condition argues for its importance as a safety concern. Its recognition as a national goal should help mobilize health care organizations and other health care stakeholders in supporting the implementation of care processes for the nutrition care of hospitalized patients, which should, in turn, thereby improve outcomes, prevent readmissions, and reduce costs.”

### **References**

1. Jensen GL, Hsiao PY. Obesity in older adults: Relationship to functional limitation. *Curr Opin Clin Nutr Metab Care*. 2010;13(1):46–51.
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. Bistran BR, Blackburn GL, Hallowell E, Heddle R. Protein status of general surgical patients. *JAMA*. 1974 Nov11;230(6):858–860.
4. Christensen KS, Gstundtner KM. Hospital-wide screening improves basis for nutrition intervention. *J Am Diet Assoc*. 1985;85(6):704–706.
5. 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.
6. Tappenden KA, Quatrara B, Parkhurst ML et al. Critical role of nutrition in improving quality of care: An interdisciplinary call to action to address adult hospital malnutrition. *JPEN J Parenter Enteral Nutr*. 2013;37(4):482–497
7. Kirkland LL, Kashiwagi DT, Brantley S et al. Nutrition in the hospitalized patient. *J Hosp Med*. 2013;8(1):52–58.
8. Singh H, Watt K, Veitech R, et al. Malnutrition is prevalent in hospitalized medical patients: Are housestaff identifying the malnourished patient? *Nutrition*. 2006;22(4):350–354.

9. Corkins MR, Guenter P, Di-Maria-Ghalili et al. Malnutrition diagnoses in hospitalized patients: United States, 2010. *JPEN J Parenter Enteral Nutr.* 2014;38(2):186–195.
10. 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.
11. Pereira GF, Bulik CM, Weaver MA et al. Malnutrition among cognitively intact, noncritically ill older adults in the emergency department. *Ann Emerg Med.* 2015;65(1):85–91.
12. Fry DE, Pine M, Jones BL, Meimban RJ et al. Patient characteristics and the occurrence of never events. *Arch Surg.* 2010;145(2):148–151.
13. Jensen GL, Mirtallo J, Compher C et al. Adult starvation and disease-related malnutrition: A proposal for etiology-based diagnosis in the clinical practice setting from the International Consensus Guideline Committee. *JPEN J Parenter Enteral Nutr.* 2010;34(2):156–159.
14. Agency for Healthcare Research and Quality. Welcome to HCUPnet. Accessed Aug 28, 2015. <http://www.hcupnet.ahrq.gov>.
15. Agency for Healthcare Research and Quality. HCUP Statistical Brief #165. Most Frequent Procedures Performed in U.S. Hospitals, 2011. Pfuntner A, Wier LM, Stocks C. Oct 2013. Accessed Aug 28, 2015. <http://hcup-us.ahrq.gov/reports/statbriefs/sb165.pdf>.
16. Cangelosi MJ, Rodday AM, Saunders T, Cohen JT. Evaluation of the economic burden of diseases associated with poor nutrition status. *JPEN J Parenter Enteral Nutr.* 2014;38(S2):35S–41S.
17. Snider JT, Linthicum MT, Wu Y et al. Economic burden of community-based disease-associated malnutrition in the United States. *JPEN J Parenter Enteral Nutr.* 2014;38(S2):77S–85S.
18. The Leapfrog Group. Leapfrog Hospital Survey Hard Copy: Questions & Reporting Periods, Endnotes, Measure Specifications, FAQs. Aug 2015. Accessed Aug 28, 2015. <https://leapfroghospitalsurvey.org/web/wp-content/uploads/survey.pdf>.

## ***Add a new objective for Older Adults***

### **PROPOSED OBJECTIVE**

Reduce the rate of sarcopenia among older community-dwelling adults

#### 2020 Baseline

For the years 1999-2004, 27.8% of men aged 60+ had sarcopenia and 19.3% of women aged 60 years or older had sarcopenia (As reported by Batsis et al 2015,<sup>1</sup> using the NHANES database)

#### 2020 Target

Reduce sarcopenia rates to 25% of men aged 60+ and 17% of women aged 60+

### **RATIONALE**

#### **Sarcopenia and Health Outcomes**

Sarcopenia is generally defined as the loss of muscle mass and strength with aging and is associated with functional decline. It is linked to malnutrition<sup>2</sup> and recommendations to help prevent and treat sarcopenia include specific nutrition and activity recommendations, particularly a focus on protein and energy and resistance and aerobic exercise.<sup>3</sup>

Sarcopenia is a strong predictor of adverse health outcomes<sup>4</sup> and has a direct and negative impact on older adults' quality of life, including:

- Increased length of stay<sup>5</sup>
- Decline in daily activities and ambulatory function<sup>5</sup>
- Increased risk of illness and infection<sup>6,7</sup>
- Reduced recovery from surgery, illness, and injury<sup>6,7</sup>
- Poor wound healing<sup>7</sup>
- Increased mortality.<sup>7</sup>

#### **Cost of Sarcopenia**

Sarcopenia is associated with higher healthcare costs.<sup>8</sup>

- The estimated direct U.S. healthcare costs of sarcopenia were estimated to be \$18.5 billion in 2000 (1.5% of total healthcare expenditures for the year.)<sup>9</sup>
- U.S. healthcare expenditures due to sarcopenia are estimated to be \$900 per person per year.<sup>10</sup>

#### **Prevalence of Sarcopenia**

Sarcopenia is estimated to impact 30% of people over the age of 60 and more than 50% of people over the age of 80.<sup>11</sup>

## References

1. Batsis JA, Mackenzie TA, Lopez-Jimenez F, Bartels SJ: Sarcopenia, sarcopenic obesity and functional impairments in older adults: NHANES 1999-2004, *Nutrition Research*. 2015.
2. Vandewoude MFJ, Alish C, Sauer A, Hegazi R: Malnutrition-sarcopenia syndrome: is this the future of nutrition screening and assessment for older adults? *J Aging Research*. 2012:1-8
3. Dorner B, Posthauer ME: Nutrition's role in sarcopenia prevention. *Today's Dietitian*. 2012;14(9):62.
4. Cruz-Jentoft AJ, Baeyens JP, Bauer JM, et al. Sarcopenia: European consensus on definition and diagnosis: report of the European Working Group on Sarcopenia in Older People. *Age Ageing*. 2010;39(4):412-423.
5. Pitchard C, Kyle UG, Morabia A, Perrier A, Vermeulen B, Under P. Nutritional assessment: lean body mass depletion at hospital admission is associated with an increased length of stay. *Am J Clin Nutr*. 2004;79:613-618.
6. Wolfe RR. The underappreciated role of muscle in health and disease. *Am J Clin Nutr*. 2006;84(3):475-482.
7. Demling RH. Nutrition, anabolism, and the wound healing process: an overview. *Eplasty*. 2009;9:65-94.
8. Tappenden KS, Quatrara B, Parkhurst ML. Critical role of nutrition in improving quality of care: an interdisciplinary call to action to address adult hospital malnutrition. *JPEN J Parenter Enteral Nutr*. 2013;37:482-497.
9. Janssen I, Shepard DS, Katzmarzyk PT, Roubenoff R. The healthcare costs of sarcopenia in the United States. *J Am Geriatr Soc*. 2014;52:80-85.
10. Marcell. Sarcopenia: causes, consequences, and preventions. *The Journals of Gerontology*. 2003;58:M911-M916.
11. Baumgartner RN, Koehler KM, Gallagher D, et al. Epidemiology of sarcopenia among the elderly in New Mexico. *Am J Epidemiol*. 1998;147:755-763.

## ***How these new objectives meet the Healthy People 2020 objective selection criteria***

### **1) The result to be achieved should be important and understandable to a broad audience and support the Healthy People 2020 goals.**

The *Healthy People 2020* goals were the first to be expanded to include objectives specific to Older Adults, one of the fastest growing age groups. While there are a series of nutrition goals in the *Healthy People 2020* Nutrition and Weight Status topic area, their focus is primarily on healthy eating and reducing obesity and there are no nutrition objectives specific to older adults. Yet identifying and treating malnutrition are critical for healthy aging something which adults and caregivers readily understand. A recent national study about older adult malnutrition commissioned by the Gerontological Society of America documented 4 out of 5 respondents believed good nutrition was very important for older adults' overall health and quality of life.<sup>1</sup>

Malnutrition is a growing but under-recognized problem facing older adults in the U.S. It is related to an excessive or imbalanced diet, a diet that lacks essential nutrients, or it can be tied to clinical conditions that impair the body's absorption and/or use of food. Older adults with malnutrition may be underweight, normal weight, overweight, or even obese. Importantly, there has been a public health focus on issues related to senior hunger and food insecurity among older adults. However, malnutrition is an even more consequential problem. It is estimated that disease-associated malnutrition costs the U.S. \$51.3 billion annually for those aged 65 years and older.<sup>2</sup>

### **2) Objectives should be prevention oriented and should address health improvements that can be achieved through population-based and individual actions, and systems-based, environmental, health-service, or policy interventions.**

At the 2015 White House Conference on Aging, U.S. Surgeon General Vice Admiral Vivek Murthy commented "The way to build the foundation for a stronger America is to create a culture of prevention that has three pillars to it. And those being **strong and healthy nutrition**, being physical activity, and also emotional and mental well-being. We have to build and support and sustain those pillars if we want to really create a culture of prevention."<sup>3</sup>

The challenge of malnutrition in older adults can be approached through a social-ecological model, a theory-based framework for understanding interactive effects of personal and environmental factors that determine health behaviors. The social-ecological approach to malnutrition was presented during the 2015 HHS Healthy Aging Summit and identified five levels of action for health improvement:

- 1) Individual: Educate families, patients, and caregivers about malnutrition
- 2) Interpersonal: Build routine nutrition screening and malnutrition intervention skills into healthcare professionals' training, education, and practice
- 3) Organizational: Establish systematic malnutrition screening and intervention models and standards
- 4) Community: Engage independent organizations, local jurisdictions, and states
- 5) Policy: Make malnutrition screening and intervention a policy priority.

The model further outlined specific opportunities and resources related to malnutrition for each of these five levels. In addition, the model specifically called for adding malnutrition identification, prevention and intervention into the *Healthy People 2020* objectives.<sup>4</sup>

### **3) Objectives should drive actions that will work toward the achievement of the proposed targets (defined as quantitative values to be achieved by the year 2020).**

We know that one in three patients are malnourished upon hospital admission<sup>5-7</sup> and 38 percent of well-nourished U.S. patients experience declines in their nutritional state during their hospital stay.<sup>8</sup> Yet for older adults, fewer than 8 percent actually have an in-patient diagnosis of malnutrition.<sup>9</sup> Identifying and treating the problem is important because malnutrition increases the risk for infections, delays wound healing, increases the length of hospital stays, increases hospital readmissions, and increases healthcare costs. Further related to malnutrition is sarcopenia (loss of muscle mass), which is linked to a higher risk of falls<sup>10</sup> and therefore, functional impairment as well as mortality in older adults.

As the problems associated with malnutrition become better known, we must provide better solutions. A national objective related to malnutrition diagnosis will help promote better recognition of the true magnitude of this critical problem. This will help drive improved and consistent methods for malnutrition assessments in older adults to identify those who would benefit from aggressive nutritional intervention or who may be at risk for developing malnutrition. A national objective will specifically help increase documentation of malnutrition diagnoses, which will support better implementation of malnutrition treatment plans with appropriate malnutrition intervention and monitoring.

A.S.P.E.N., the American Society for Parenteral and Enteral Nutrition, has established a Malnutrition Awareness Week™ and recently called for a national goal to reduce malnutrition in the U.S. in a new article published in the *Joint Commission Journal on Quality and Patient Safety*.<sup>11</sup>

“A national goal, combined with a series of specific actions to address disease-related malnutrition, has the potential to improve patient outcomes by reducing readmissions, morbidity, mortality, and cost,” said Gordon Jensen, MD, PhD, Professor, Head of Nutritional Sciences at the Pennsylvania State University, and one of the article’s lead authors.

**4) Objectives should be useful and reflect issues of national importance. Federal agencies, states, localities, non-governmental organizations, and the public and private sectors should be able to use objectives to target efforts in schools, communities, work sites, health practices, and other environments.**

Malnutrition and sarcopenia objectives for older adults can help strengthen community nutrition programs. The Older Americans Act is past due for reauthorization. Its community nutrition programs, meals, and nutrition education are effective preventative measures against malnutrition. The programs already serve 2.6 million seniors per year and could serve more if expanded.

Malnutrition is a key indicator of older adult health and needs to be recognized as such. With a national objective on malnutrition there could be modifications through the Affordable Care Act to focus greater emphasis on malnutrition screening and intervention in care transition grants as well as expanding the definition of essential health benefits to include malnutrition screening and therapy. It is especially important going forward to include nutrition status information, particularly malnutrition screening and intervention, in electronic health records. In addition, a malnutrition-related objective supports the Elder Justice Act, as one of the fastest growing forms of elder abuse is self-neglect which can be caused by the inability to maintain a proper (or any) diet, leading to malnutrition.

A number of states, including Massachusetts, Louisiana, Florida, Georgia, and Texas have introduced legislation for malnutrition commissions or resolutions designating days or a week for malnutrition awareness. These efforts will be strengthened with a national objective, and could include expanding to address sarcopenic malnutrition in state obesity plans. Malnutrition Awareness Week™ is on the National Health Observances Calendar and during the recent 2015 week, five U.S Congressional members cited this initiative in the Congressional Record.

**5) Objectives should be measurable and should address a range of issues, such as: behavior and health outcomes; availability of, access to, and content of behavioral and health service interventions; socio-environmental conditions; and community capacity – directed toward improving health outcomes and quality of life across the life span. (Community capacity is defined as the ability of a community to plan, implement, and evaluate health strategies.)**

Because malnutrition care is not a consistently applied standard of medical care, it is often limited or even absent across the spectrum of healthcare. Malnutrition negatively impacts older adults with chronic conditions and is a risk factor for falls and poorer health outcomes, making malnutrition a patient safety risk. Sarcopenia can increase protein needs and has become a new public health problem for older adults—even among those who are overweight or obese—as loss of muscle mass puts older adults at risk for increased disabilities and



complications. Yet there are effective malnutrition interventions available, like oral nutrition supplements, which have been shown to decrease the probability of hospital readmission<sup>12</sup> and reduce length of stay<sup>13</sup> and costs<sup>14</sup> among older adults. National objectives on malnutrition and sarcopenia could bring greater focus to the need for systematic nutrition intervention.

In January, the 2015 White House Conference on Aging joined the Academy of Nutrition and Dietetics and the National Association of Nutrition and Aging Services Programs in a national listening session, *Nutrition = Solutions to Healthy Aging and Long-term Services and Supports*. The session highlighted that:

- . Malnutrition impacts can include: increased risk of infection, longer length of hospital stay, functional limitations, increased medical complications, increased rate of hospital readmissions, higher care costs, and decline in cognition and mental health
- . Caregivers often have limited knowledge and skills to provide adequate nutrition
- . Most care transition models lack a nutrition component, even though there is evidence that nutrition helps reduce readmissions
- . There have been limited quality improvement efforts in the U.S. to address malnutrition care
- . Malnutrition care is further inhibited by a lack of robust quality measures
- . A national malnutrition quality improvement initiative has been launched that aims to address gaps and barriers to quality care.<sup>15</sup>

New national objectives related to malnutrition and sarcopenia will help resolve these issues and improve health outcomes and quality of life for older adults.

**6) Continuity and comparability of measured phenomena from year to year are important, thus, when appropriate, retention of objectives from previous Healthy People iterations is encouraged. However, in instances where objectives and/or measures have proven ill-suited to the purpose or are inadequate, new improved objectives should be developed. Whether or not an objective has met its target in a previous Healthy People iteration should not be the sole basis for retaining or archiving an objective.**

The proposed new objectives related to inpatient diagnosis of disease-related malnutrition in older adults and sarcopenia in older adults living in the community build on the growing recognition of the problems of malnutrition and sarcopenia in older adults. Because lack of awareness, but not lack of tools and measures, is a core issue for both of these new objectives, it is reasonable to assume that it will be possible to maintain continuity and comparability of measured phenomena from year to year.

**7) The objectives should be supported by the best available scientific evidence. The objective selection and review processes should be flexible enough to allow revisions to objectives in order to reflect major updates or new knowledge.**

Research continues to document that chronic disease increases the risk of malnutrition in older adults. Studies estimate the prevalence of malnutrition in cancer patients is 30-87 percent,<sup>16</sup> in chronic kidney disease is 20-50 percent<sup>17</sup>, and in chronic obstructive pulmonary disease is 19-60 percent.<sup>18</sup> Malnutrition is a patient safety risk as those who are malnourished are more likely to experience a healthcare acquired condition. Malnutrition is linked to increased rates of hospital morbidity, increased incidence of hospital-acquired pressure ulcers<sup>19</sup> and infections, falls, delayed wound healing,<sup>20</sup> decreased respiratory and cardiac function, poorer outcomes for chronic lung diseases, increased risk of cardiovascular and gastrointestinal disorders, reduced physical function, development of nosocomial infections,<sup>8</sup> and impairment of non-specific and cell-mediated immunity.<sup>21</sup> Malnutrition has also been identified as the strongest independent risk factor predicting short-term mortality in elderly patients visiting the emergency department.<sup>22</sup> And poor nutrition has been identified as a contributor to the recently characterized post-hospital syndrome, which is linked to risk for increased re-hospitalization.<sup>23</sup>

Malnutrition intervention is a low-risk and low-cost solution to help improve the quality of clinical care and care transitions. Prompt nutrition intervention can significantly improve patient outcomes, with:

- 28% decrease in avoidable readmissions,<sup>12</sup>
- 25% reduction in pressure ulcer incidence,<sup>24</sup>
- 4% fewer overall complications,<sup>25</sup>
- Reduced average length of stay of approximately 2 days,<sup>26,27</sup>
- Decreased mortality,<sup>28-33</sup> and
- Improved quality of life.<sup>19,34-39</sup>

**8) Objectives should address population disparities. These include populations categorized by race/ethnicity, socioeconomic status, gender, disability status, sexual orientation, and geographic location. For particular health issues, additional special populations should be addressed, based on an examination of the available evidence on vulnerability, health status, and disparate care.**

Because malnutrition in older adults is often linked to economic and social factors, it can lead to more health disparities. The Congressional Black Caucus Institute in their *21<sup>st</sup> Century Council 2015 Annual Report* noted that “The most benefit will occur when malnutrition care becomes a priority and routine standard of medical care.” One of the steps outlined to accomplish this was “Integrating malnutrition screening and treatment into the development of evidence-based care models, such as intervention strategies to improve patient care transitions.”<sup>40</sup>

The National Black Nurses Association recently passed a new resolution on *Nutrition as a Vital Sign* for older adults. They identified “older age and chronic disease are often associated with malnutrition and as older African Americans have increased rates of chronic diseases they have also been found to have a significantly higher risk of malnutrition.”<sup>41</sup> Specific actions called for by the resolution included malnutrition be recognized as a key indicator of older adult health, nutrition becomes a vital sign for older adults, and the addition of new objectives specifically related to malnutrition screening and intervention in national health goals, such as the *Healthy People 2020* goals.

The link between hunger, food insecurity, malnutrition, and health outcomes is also strong. Feeding America and the National Foundation to End Senior Hunger’s recent report, *Spotlight on Senior Health Adverse Health Outcomes of Food Insecure Older Americans*, highlighted that “food insecure seniors are more likely to have lower nutrient intakes and higher risk for chronic health conditions and depression than their food secure counterparts.”<sup>42</sup>

**9) *Healthy People 2020*, like past versions, is heavily data driven. Valid, reliable, nationally representative data and data systems should be used for *Healthy People 2020* objectives. Each objective must have 1) a data source, or potential data source, identified, 2) baseline data and 3) assurance of at least one additional data point throughout the decade**

Data sources for malnutrition and sarcopenia objectives, while limited, do exist. The HCUP NIS data published annually lists in-hospital diagnoses for all age groups and includes documentation of specific diagnoses for malnutrition. The NHANES data, which is now collected on a continual basis, includes nutrition and health measures that have been used to identify rates of sarcopenia in the older adult community-based population.

## References

1. The Gerontological Society of America, National Academy on an Aging Society: *Profiles of an Aging Society: What We Know and Can Do About Malnutrition*. Fall 2015, Washington D.C.
2. Snider JT, Linthicum MT, Wu Y et al. Economic burden of community-based disease-associated malnutrition in the United States. *JPEN J Parenter Enteral Nutr*. 2014;38(S2):77S–85S.
3. U.S. Surgeon General Vice Admiral Vivek Murthy during the 2015 White House Conference on Aging, Washington D.C. (Accessed October 2015 at: <https://www.youtube.com/watch?v=cJyL3iESDjM>)
4. Bales CW, Blancato R. The challenge of malnutrition in older adults: approaching the problem with a social-ecological model, Poster at the Health and Human Services Healthy Aging Summit, July 2015. (Accessed October 2015 at: [https://www.geron.org/images/gsa/malnutrition/Malnutrition\\_Poster.jpg](https://www.geron.org/images/gsa/malnutrition/Malnutrition_Poster.jpg))
5. Coats KG, Morgan SL, Bartolucci AA, Weinsier RL. Hospital-associated malnutrition (a reevaluation 12 years later). *J Am Diet Assoc*. 1993;93:27-33.
6. Giner M, Laviano A, Meguid MM, Gleason JR. In 1995 a correlation between malnutrition and poor outcome in critically ill patients still exists. *Nutr*. 1996;12(1):23-29.

7. Thomas DR, Zdrowski CD, Wilson M, et al. Malnutrition in subacute care. *Am J Clin Nutr.* 2002;75:308–313
8. Braunschweig C, Gomez S, Sheehan PM. Impact of declines in nutritional status on outcomes in adult patients hospitalized for more than 7 days. *J Am Diet Assoc.* 2000;100:1316-1322; quiz 1323-1324
9. Calculation: Based on 2013 HCUP NIS data, 12,488,372 in-hospital stays of adults 65 years and older and 942,595 had a malnutrition diagnosis code, or 7.55%. Database source: <http://hcupnet.ahrq.gov/>
10. Landi F, Liperoti R, Russo A, et al. Sarcopenia as a risk factor for falls in elderly individuals: results from the iSIRENTE study. *Clin Nutr.* 2012; 31(5):652-659.
11. Guenter P, Jensen G, Patel V, et al. Addressing disease-related malnutrition in hospitalized patients: a call for a national goal. *Jt Comm J Qual Patient Saf.* 2015;41(10):469-473.
12. Gariballa S, Forster S, Walters S, Powers H. A randomized, doubleblind, placebo-controlled trial of nutritional supplementation during acute illness. *Am J Med.* 2006;119(3):693-699.
13. 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.
14. Lawson RM, Doshi MK, Barton JR, Cobden I. The effect of unselected post-operative nutritional supplementation on nutritional status and clinical outcome of orthopedic patients. *Clin Nutr.* 2003;22(1):39-46.
15. 2015 White House Conference on Aging National Listening Session: Nutrition = Solutions to Healthy Aging and Long-term Services and Supports. January 29, 2015. (Accessed October 2015 at: <http://www.eatrightpro.org/resource/career/professional-development/distance-learning/nutrition-healthy-aging-and-long-term-services-and-supports>)
16. Kumar NB. *Nutritional Management of Cancer Treatment Effects.* 2012.
17. Pupim, LB, Cuppari L, Ikizler TA. Nutrition and metabolism in kidney disease. *Seminars in Nephrology* 2006;26:134-157.
18. Hunter AM, Carey MA, Larsh HW. The nutritional status of patients with chronic obstructive pulmonary disease. *Am Rev Respir Dis.* 1981;124(4):376–381.
19. Jensen GL, Mirtallo J, Compher C, et al. Adult starvation and disease-related malnutrition: A proposal for etiology-based diagnosis in the clinical practice setting from the International Consensus Guideline Committee. *JPEN J Parenter Enteral Nutr.* 2010; 34:156-159.
20. 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;8:514-527.
21. Beattie AH, Prach AT, Baxter JP, Pennington CR. A randomised controlled trial evaluating the use of enteral nutritional supplements postoperatively in malnourished surgical patients. *Gut* 2000;46:813-818.
22. Gentile S, Lacroix O, Durand AC et al. Malnutrition: a highly predictive risk factor of short term mortality in elderly presenting to the emergency department. *J Nutr Health Aging.* 2013;17(4):290-4.
23. Krumholz HM. Post Hospital Syndrome-an acquired, transient condition of generalized risk. *N Engl J Med.* 2013;368:100-102.
24. Stratton RJ, Ek AC, Engfer M et al. Enteral nutritional support in prevention and treatment of pressure ulcers: a systematic review and meta-analysis. *Ageing Res Rev.* 2005;4(3):422-450.
25. Milne AC, Potter J, Vivanti A, Avenell A. Protein and energy supplementation in elderly people at risk from malnutrition. *Cochrane Database Syst Rev.* 2009;15(2):CD003288.
26. Brugler L, DiPrinzio MJ, Bernstein L. The five-year evolution of a malnutrition treatment program in a community hospital. *Jt Comm J Qual Improv.* 1999;25(4):191-206
27. Smith PE, Smith AE. High-quality nutritional interventions reduce costs. *Healthcare Financial Management* 1997;51:66-69.
28. Austrums E, Pupelis G, Snippe K. Postoperative enteral stimulation by gut feeding improves outcomes in severe acute pancreatitis. *Nutrition.* 2003;19:487-491.
29. Akner G, Cederholm T. Treatment of protein-energy malnutrition in chronic nonmalignant disorders. *Am J Clin Nutr.* 2001;74:6.
30. Potter J, Langhorne P, Roberts M. Routine protein energy supplementation in adults: systematic review. *Br Med J.* 1998;317:495-501.
31. Potter JM, Roberts MA, McColl JH, Reilly JJ. Protein energy supplements in unwell elderly patients – a randomized controlled trial. *JPEN J Parenter Enteral Nutr.* 2001;25:323-329.
32. Delmi M, Rapin CH, Bengoa MJ, et al. Dietary supplementation in elderly patients with fractured neck of the femur. *Lancet.* 1990;335:1013-1016.
33. Lacson E, Wang W, Zebrowski B et al. Outcomes associated with intradialytic oral nutritional supplements in patients undergoing maintenance hemodialysis: a quality improvement report. *Am J Kidney Dis.* 2012.
34. Stratton RJ, Elia M. Are oral nutritional supplements of benefit to patients in the community? Findings from a systematic review. *Curr Opin Clin Nutr Metab Care.* 2000;3:311-315.

35. Davidson W, Ash S, Capra S, Bauer J. Weight stabilization is associated with improved survival duration and quality of life in unresectable pancreatic cancer. *J Clin Nutr.* 2004;22:239-247.
36. Moses AW, Slater C, Preston T, et al. Reduced total energy expenditure and physical activity in cachectic patients with pancreatic cancer can be modulated by an energy and protein dense oral supplement enriched with n-3 fatty acids. *Br J Cancer.* 2004;90:996-1002.
37. Moses AGW, Slater C, Barber MD et al. An experimental nutrition supplement enriched with n-3 fatty acids and antioxidants is associated with an increased physical activity level in patients with pancreatic cancer cachexia. *Clin Nutr.* 2001;20(suppl3):S21.
38. Payette H, Boutier V, Coulombe C, Gray-Donald K. Benefits of nutritional supplementation in free-living, frail, undernourished elderly people. *J Am Diet Assoc.* 2002;102:1088-1095.
39. Isenring EA, Capra S, Bauer JD. Nutrition intervention is beneficial in oncology outpatients receiving radiotherapy to the gastrointestinal or head and neck area. *Br J Cancer.* 2004;91:447-452.
40. Congressional Black Caucus Institute 21<sup>st</sup> Century Council: *2015 Annual Report, 2015*: Washington D.C. (accessed October 2015 at: <https://cbcinstitute.org/wp-content/uploads/2015/03/CBCI-Annual-ReportPRINT.pdf>)
41. National Black Nurses Association Resolution: *Nutrition as a Vital Sign.* (Accessed October 2015 at <http://www.nbna.org/files/NBNA%20Resolution%20-%20Nutrition%20as%20a%20Vital%20Sign.pdf>)
42. Feeding America and National Foundation to End Senior Hunger. *Spotlight on Senior Health Adverse Health Outcomes of Food Insecure Older Americans Executive Summary.* 2014, Alexandria, Virginia (Accessed October 2015 at: <http://www.feedingamerica.org/hunger-in-america/our-research/senior-hunger-research/or-spotlight-on-senior-health-executive-summary.pdf>)