

USWR 28: Obtaining Preoperative Nutritional Recommendations from a Registered Dietitian Nutritionist (RDN) in Nutritionally At-Risk Surgical Patients

MEASURE STEWARD: Academy of Nutrition and Dietetics

The Academy of Nutrition and Dietetics and Avalere partnered with the US Wound Registry to be the QCDR for this measure.

Description: Percentage of patients age 18 years and older who have undergone a surgical procedure and were identified to be at-risk for malnutrition based on a malnutrition screening OR who were referred to a registered dietitian nutritionist or clinically qualified nutrition professional and have a preoperative nutrition assessment which was documented in the medical record along with documentation of any recommended nutrition interventions.

National Quality Strategy Domain: Effective Clinical Care

Measure Type: Process

Meaningful Measure Area: Promote Effective Communication & Coordination of Care

Improvement Noted As: An increase in rate

High Priority: No

Inverse Measure: No

Traditional Measure: Yes

Proportional Measure: Yes

Risk Adjusted: No

of PERFORMANCE RATES: 1

Measure Level: Clinician Measure (Physician or Group Practice)

Numerator: Patients in the denominator who have documentation in the medical record of a preoperative nutrition assessment AND recommended nutrition interventions to address their nutrition risk. Nutrition interventions are categorized by those outlined by the Academy of Nutrition and Dietetics' nutrition intervention terminology:

1. Food and Nutrient Delivery
2. Nutrition Education
3. Nutrition Counseling
4. Coordination of Nutrition Care

Included Populations:

Excluded Populations: None

Data Elements:

- *Referral to a Nutrition Professional*
- *Completed Malnutrition Screening*
- *Malnutrition Screening At-Risk*

Denominator: All patients age 18 years and older on the date of the encounter with an eligible surgical procedure who were identified to be at-risk for malnutrition upon the completion of a malnutrition screening OR who have a referral for a nutrition consult with a registered dietitian nutritionist or clinically qualified nutrition professional. Available validated screening tools may include, but are not limited to, one of the following:

- Malnutrition Screening Tool (MST) (Wu, 2012),
- Nutrition Risk Classification (NRC) (Kovacevich, 1997),
- Nutritional Risk Index (NRI) (Honda, 2016),
- Nutritional Risk Screening 2002 (NRS-2002) (Bauer, 2005),
- Short Nutrition Assessment Questionnaire (SNAQ) (Pilgrim, 2016).

Bauer JM, Vogl T, Wicklein S, Trögner J, Mühlberg W, Sieber CC. Comparison of the Mini Nutritional Assessment, Subjective Global Assessment, and Nutritional Risk Screening (NRS 2002) for nutritional screening and assessment in geriatric hospital patients. *Z Gerontol Geriatr.* 2005;38(5):322-7.

Kovacevich DS, Boney AR, Braunschweig CL, Perez A, Stevens M. Nutrition risk classification: a reproducible and valid tool for nurses. *Nutr Clin Pract.* 1997;12(1):20-5.

Honda Y, Nagai T, Iwakami N, et al. Usefulness of Geriatric Nutritional Risk Index for Assessing Nutritional Status and Its Prognostic Impact in Patients Aged =65 Years With Acute Heart Failure. *Am J Cardiol.* 2016;

Pilgrim AL, Baylis D, Jameson KA, et al. Measuring Appetite with the Simplified Nutritional Appetite Questionnaire Identifies Hospitalised Older People at Risk of Worse Health Outcomes. *J Nutr Health Aging.* 2016;20(1):3-7.

Wu ML, Courtney MD, Shortridge-baggett LM, Finlayson K, Isenring EA. Validity of the malnutrition screening tool for older adults at high risk of hospital readmission. *J Gerontol Nurs.* 2012;38(6):38-45.

Included Populations: Patients with an eligible surgical procedure (see procedure codes) completed malnutrition screening, as defined by value set OID: 2.16.840.1.113762.1.4.1095.40 OR patients with a referral to a registered dietitian or nutrition professional

Excluded Populations: None

Denominator Exceptions: Documented patient reason for not participating in screening or patients with advanced directives

Data Elements:

- *Birthdate*
- *Encounter Type*
- *Encounter Date Time*
- *Completed Nutrition Assessment*
- *Coordination of Care by a Nutrition Professional*
- *Nutrition Care Plan*
- *Nutrition Recommendation Grouping*
- *Advanced Directives*
- *Patient Reason*
- *Surgical Procedures (Cardiac as defined by value set OIDs 2.16.840.1.113883.3.666.5.701 and 2.16.840.1.113883.3.666.5.694 and 2.16.840.1.113762.1.4.1045.67, General as defined*

- by value set 2.16.840.1.113883.3.117.1.7.1.255, GI as defined by value set OID :
 2.16.840.1.113883.3.666.5.1815, Knee/Hip Surgeries as defined by value set OIDs:
 2.16.840.1.113883.3.117.1.7.1.261 and 2.16.840.1.113883.3.117.1.7.1.259 and
 2.16.840.1.113883.3.117.1.7.1.258; Surgery with a Scope as defined by value set OID:
 2.16.840.1.113762.1.4.1045.51
- *Surgical Site Complications or Bleeding (as defined by value set OID:
 2.16.840.1.113762.1.4.1206.10)*
 - *Diagnoses of Diabetes as defined by value set OID:
 2.16.840.1.113883.3.464.1003.103.11.1002, Septicemia as defined by value set OID:
 2.16.840.1.113883.3.666.5.954, UTI as defined by value set OID:
 2.16.840.1.113883.3.464.1003.112.11.1018, COPD as defined by value set OID:
 2.16.840.1.113883.3.464.1003.102.11.1021, Acute Kidney Failure as defined by value set
 OID: 2.16.840.1.113762.1.4.1146.902, Pneumonia as defined by value set OID:
 2.16.840.1.113883.3.464.1003.102.11.1045*

Clinical Recommendation Statement: Screening for malnutrition risk is the preliminary step to identify individuals who require a nutrition assessment performed by a registered dietitian nutritionist. By completing a malnutrition screening, patients at-risk of malnutrition are identified and can be referred to a dietitian to complete a nutrition assessment. The early and rapid identification of malnutrition risk allows for early treatment of malnutrition which is associated with reduced, risk of hospitalization and readmission, and overall healthcare costs. Furthermore, by completing a nutrition assessment for patients at-risk of malnutrition (typically first identified by screening for risk or via referral from a physician), a dietitian can subsequently recommend a nutrition care plan that includes appropriate interventions to address the patient’s malnutrition. The early and rapid identification of malnutrition allows for early treatment of malnutrition which is associated with reduced risk of hospitalization or 30-day readmission rate, and overall healthcare costs.

Charuhas macris P, Schilling K, Palko R. Academy of Nutrition and Dietetics: Revised 2017 Standards of Practice and Standards of Professional Performance for Registered Dietitian Nutritionists (Competent, Proficient, and Expert) in Oncology Nutrition. J Acad Nutr Diet. 2018;118(4):736-748.e42.

Mueller C, Compher C & Druyan ME and the American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) Board of Directors. A.S.P.E.N. Clinical Guidelines: Nutrition Screening, Assessment, and Intervention in Adults. J Parenter Enteral Nutr. 2011;35: 16-24.

J. Kondrup, S. P. Allison, M. Elia, B. Vellas, and M. Plauth, “ESPEN guidelines for nutrition screening 2002,” Clinical Nutrition, vol. 22, no. 4, pp. 415–421, 2003.

National Institute for Health and Care Excellence. NICE Quality Standard [Q24] Nutrition Support in Adults. Retrieved from: <https://www.nice.org.uk/guidance/qs24/chapter/quality-statement-1-screening-for-the-risk-of-malnutrition>; Published November 2012.

Rationale: Recent evidence finds that older adult patients’ prevalence of malnutrition ranging from 5.8 - 30% in the community (Snider, 2014) and more specifically, risk of malnutrition is more prevalent in communities facing health disparities (Sheean, 2019). Malnourished patients are more likely to require hospitalization and be readmitted after discharge (Streicher, 2018, Abizanda, 2016). Malnutrition is also associated with important adverse patient safety outcomes such as increased risk of complications (Choi, 2016), and readmissions (Lim, 2012) and conditions such as frailty (Verlaan, 2017). Patients who experience these increased risks are also associated with a significant increase in costs (Goates, 2016). Referral rates for dietetic assessment and treatment of malnourished patients have proven to be

suboptimal, thereby increasing the likelihood of patients developing such complications (Gomes, 2016, Cereda, 2015, Corkins, 2014, Barker, 2011, Lim, 2012, Amaral, 2008, Kruizenga, 2005).

For patients undergoing surgery specifically, an optimal nutritional status allows for a faster and more efficient recovery from surgery. Furthermore, malnutrition is related to a worse surgery outcome and to a higher prevalence of comorbidities, both 30- and 60-day mortality, readmissions, and surgical complications (Tsantes, 2019; Mignini, 2018; Sagawa, 2018; Whittle, 2018; Ho, 2015).

Gap in Practice: Screening for the risk of malnutrition in care settings is important to enable early and effective interventions for patients who are malnourished or at-risk of malnutrition (Mueller, 2011, White, 2012). These screenings are the first step in providing optimal, evidence-based malnutrition care for patients. With regard specifically to screening, a study by Sherry et. al (2017) demonstrated that only 65% of patients who screened positive for malnutrition risk received any referral to a nutrition professional or an order for nutritional support.

Other evidence demonstrates that there is a lack of nutrition support and focus on nutritional status in patients with major hip fracture awaiting surgery (Dixon, 2019).

Risk Adjustment: No

Sampling: None

Data Reported As: Aggregated rate generated from count data reported as a proportion (numerator/denominator)

References:

Amaral TF, Antunes A, Cabral S, Alves P, Kent-Smith L. An evaluation of three nutritional screening tools in a Portuguese oncology centre. *Journal of human nutrition and dietetics : the official journal of the British Dietetic Association.* 2008;21(6):575-583.

Barrett ML, Bailey MK, Owens PL. Non-maternal and Non-neonatal Inpatient Stays in the United States Involving Malnutrition, 2016. ONLINE. August 30, 2018. U.S. Agency for Healthcare Research and Quality. Available: www.hcupus.ahrq.gov/reports.jsp.

Choi WJ, Kim J. Nutritional Care of Gastric Cancer Patients with Clinical Outcomes and Complications: A Review. *Clin Nutr Res.* 2016;5(2):65-78.

Dixon J, Channell W, Arkley J, Eardley W. Nutrition in Hip Fracture Units: Contemporary Practices in Preoperative Supplementation. *Geriatr Orthop Surg Rehabil.* 2019;10:2151459319870682.

Goates S, Du K, Braunschweig CA, Arensberg MB. Economic Burden of Disease-Associated Malnutrition at the State Level. *PLoS ONE.* 2016;11(9):e0161833.

Ho JW, Wu AH, Lee MW, et al. Malnutrition risk predicts surgical outcomes in patients undergoing gastrointestinal operations: Results of a prospective study. *Clin Nutr.* 2015;34(4):679-84.

Kruizenga HM, Van Tulder MW, Seidell JC, Thijs A, Ader HJ, Van Bokhorst-de van der Schueren MAE. Effectiveness and cost-effectiveness of early screening and treatment of malnourished patients. *Am J Clin Nutr.* 2005 Nov;82(5):1082-9.

Lim SL, Ong KC, Chan YH, Loke WC, Ferguson M, Daniels L. Malnutrition and its impact on cost of hospitalization, length of stay, readmission and 3-year mortality. *Clinical nutrition (Edinburgh, Scotland).* 2012;31(3):345-350.

Lopez-delgado JC, Muñoz-del rio G, Flordelís-lasierra JL, Putzu A. Nutrition in Adult Cardiac Surgery: Preoperative Evaluation, Management in the Postoperative Period, and Clinical Implications for Outcomes. *J Cardiothorac Vasc Anesth.* 2019;33(11):3143-3162.

Mignini EV, Scarpellini E, Rinninella E, et al. Impact of patients nutritional status on major surgery outcome. *Eur Rev Med Pharmacol Sci.* 2018;22(11):3524-3533.

Mueller C, Compher C & Druyan ME and the American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) Board of Directors. A.S.P.E.N. clinical guidelines: nutrition screening, assessment, and intervention in adults. *J Parenter Enteral Nutr.* 2011;35: 16-24.

Sagawa M, Yoshimatsu K, Yokomizo H, et al. Pulmonary Dysfunction Function and Poor Nutritional Status are Risk Factors for Remote Infections Following Surgery for Colorectal Cancer. *J Nippon Med Sch.* 2018;85(4):208-214.

Sheean P, Farrar IC, Sulo S, Partridge J, Schiffer L, Fitzgibbon M. Nutrition risk among an ethnically diverse sample of community-dwelling older adults. *Public Health Nutr.* 2019;22(5):894-902.

Snider J, et al. Economic burden of community-based disease-associated malnutrition in the United States. *JPEN J Parenteral Enteral Nutr.* 2014;38:55-165.

Streicher M, Van zwiene-pot J, Bardon L, et al. Determinants of Incident Malnutrition in Community-Dwelling Older Adults: A MaNuEL Multicohort Meta-Analysis. *J Am Geriatr Soc.* 2018;66(12):2335-2343.

Tsantes AG, Papadopoulos DV, Lytras T, et al. Association of malnutrition with surgical site infections following spinal surgeries: systematic review and meta-analysis. *J Hosp Infect.* 2019;

Verlaan S, Ligthart-melis GC, Wijers SLJ, Cederholm T, Maier AB, De van der schueren MAE. High Prevalence of Physical Frailty Among Community-Dwelling Malnourished Older Adults-A Systematic Review and Meta-Analysis. *J Am Med Dir Assoc.* 2017;18(5):374-382.

Volkert D, Saeglit C, Gueldenzoph H, Sieber CC, Stehle P. Undiagnosed malnutrition and nutrition-related problems in geriatric patients. *J Nutr Health Aging.* 2010;14(5):387-92.

White, J. V., Guenter, P., Jensen, G., Malone, A., & Schofield, M. (2012). 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). *Journal of the Academy of Nutrition and Dietetics*, 112(5), 730-738.

Whittle J, Wischmeyer PE, Grocott MPW, Miller TE. Surgical Prehabilitation: Nutrition and Exercise. *Anesthesiol Clin.* 2018;36(4):567-580.

Wischmeyer PE, Carli F, Evans DC, et al. American Society for Enhanced Recovery and Perioperative Quality Initiative Joint Consensus Statement on Nutrition Screening and Therapy Within a Surgical Enhanced Recovery Pathway. *Anesth Analg.* 2018;126(6):1883-1895.