eat right®

Malnutrition Quality Improvement Initiative Data Support Continued Opportunities in Malnutrition Care

Michelle Bruno, MPP; Kirk Kerr, PhD; Christina Badaracco, MPH, RDN, LDN; Taylor Musser, MPH; Karl M. Kilgore, PhD

MALNUTRITION REMAINS prevalent among hospitalized patients in the United States and is associated with higher morbidity, mortality, and utilization costs when compared with individuals without malnutrition.[1-3] Furthermore, estimates that malnutrition affects up to 60% of hospitalized older adults,[4] yet continues to go unrecognized or undertreated,[5] highlight a need to improve care for this patient population. Quality improvement can play an integral role in generating value-based solutions and provide a path for registered dietitian nutritionists (RDNs) to be at the forefront of improving malnutrition care.

To address malnutrition for older adults in inpatient settings, the Academy of Nutrition and Dietetics, in partnership with Avalere Health and other stakeholders, spearheaded the Malnutrition Quality Improvement Initiative (MQii) in 2013.[6] The MQii supports use of a dual-pronged approach for quality improvement by providing a toolkit to help hospitals implement best-practice malnutrition care and malnutrition-focused electronic clinical quality measures (eCQMs)—which are based on data from electronic health records that reflect the Nutrition Care Process—to track performance improvement.[7-9]

Quality measures serve an increasingly important role in the US health care system. Individual providers, hospitals, health plans, and other entities delivering or coordinating care are subject to regulatory oversight and payment incentives based on quality measure performance. The development and maintenance of quality measures is completed through a scientific, evidence-based process to ensure they provide valid and reliable results. In 2021, the National Quality Forum, for the first time, endorsed a malnutrition-specific quality measure: the Global Malnutrition Composite Score (GMCS) (National Quality Forum no. 3592e).[10,11]

In August 2022, the Centers for Medicare and Medicaid Services (CMS) included the GMCS in the CMS Inpatient Prospective Payment Systems Final Rule for acute care and long-term care hospitals for FY2023. CMS adopted the GMCS eCQM as part of the Hospital Inpatient Quality Reporting Program measure set for which hospitals can self-select, beginning with CY2024 reporting period/FY2026 payment determination and for subsequent years.[12] Developed by the MQii, the GMCS is an unweighted average of four component measures for use in inpatient settings that were previously four individual eCQMs (Figure 1.) The GMCS measures the following among hospitalized individuals:[13]

- **Malnutrition screening** Proportion of inpatient hospitalizations among patients aged 65 years and older with a competed malnutrition screening within at admission;
- **Nutrition assessment** Proportion of inpatient hospitalizations among patients aged 65 years and older identified as at risk for malnutrition with a completed nutrition assessment by an RDN;
- **Malnutrition diagnosis** Proportion of inpatient hospitalizations among patients aged 65 years and older identified as malnourished with appropriate documentation of a malnutrition diagnosis; and
- **Nutrition care plan** Proportion of inpatient hospitalizations among patients aged 65 years and older identified as malnourished with a nutrition care plan.

(Note: Since the time of this analysis, the specifications of the GMCS component measures have been updated to meet requirements for reporting through the Center for Medicare & Medicaid Services quality programs. The latest version of these measures can be found here: https://ecqi.healthit.gov/ecqm/eh/pre-rulemaking/2023/cms986v1.)

Performance on these quality measures indicates the proportion of hospitalizations, ranging from zero to one, who received the care described. Further, data are collected from hospitals participating in the MQii Learning Collaborative—a collective group of hospitals independently using the toolkit and eCQMs to locally address malnutrition care in their respective institutions. Hospitals sharing data receive site-specific performance results on a quarterly basis, and collaborative-wide performance results semiannually. Improvement in performance is noted as an increase in rate over time.

This article highlights the most recent data available on the GMCS and its component measures from two hospital systems participating in the MQii Learning Collaborative, along with clinician insights from these systems on their experiences addressing malnutrition care. These two practice reviews demonstrate the value of tracking malnutrition care performance on these measures and the

Component Measure #1 Score	Component Measure #2 Score	Component Measure #3 Score	Component Measure #4 Score
Completion of a Malnutrition Screening	Completion of a Nutrition Assessment for Patients Identified as at Risk for Malnutrition	Appropriate Documentation of a Malnutrition Diagnosis	Nutrition Care Plan for Patients Identified as Malnourished after a Completed Nutrition Assessment

AVERAGE %

Global Malnutrition Composite Score
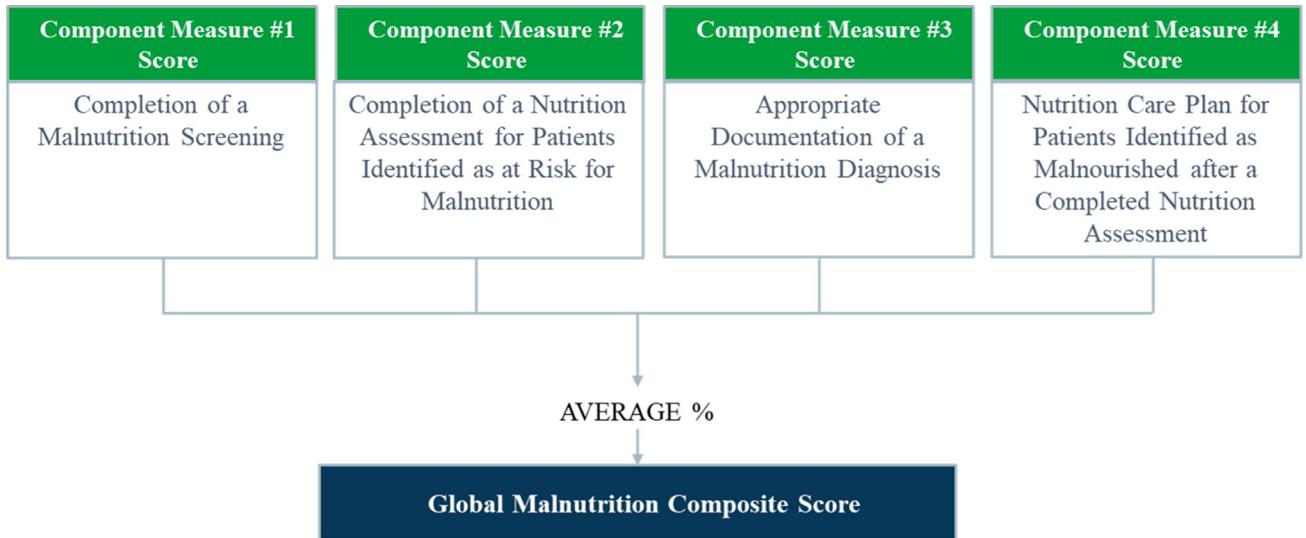
Figure 1. Elements of the Nutrition Care Process reflected by individual components of the Global Malnutrition Composite Score.

ability to use data to inform and tailor quality improvement efforts.

LATEST DATA FROM HOSPITALS PARTICIPATING IN THE MQii LEARNING COLLABORATIVE

The practice reviews presented in this section examine the data from the largest hospitals in two systems participating in the MQii Learning Collaborative: Intermountain Healthcare in Utah and UnityPoint Health-Des Moines in Iowa. The data show the quarterly performance of these two systems over time between January 2019 and June 2021 on the individual component measures as well as the GMCS.

The figures provided for Intermountain Health reflect aggregated data from five hospitals in its system and the figures for UnityPoint reflect aggregated data from three hospitals in its system. Because the hospitals have different numbers of patients for each time period, data shown represent the arithmetic average measure scores across the hospitals, weighted by the number of qualifying patient hospitalizations in each hospital.

To provide context for the factors that may have influenced performance on the measures, the authors interviewed key staff at both Intermountain Health and UnityPoint who were responsible for overseeing the process improvements for malnutrition care in their respective systems. Qualitative findings from these interviews have been incorporated into these reviews.

Practice Review 1: Intermountain Health

Intermountain Health is a nonprofit integrated delivery network, including 24 hospitals as well as a medical group, health plan, and other health services covering Idaho, Nevada, and Utah. The system represented in this article is based in Salt Lake City, Utah. Its nutrition department includes six clinical nutrition managers covering the various hospitals in the region. The hospitals in Utah contributing data include St George Regional (284 beds), Intermountain Medical Center (452 beds), LDS Hospital (262 beds), McKay Dee (320 beds), and Utah Valley (395 beds).

Intermountain Health's performance (Figure 2) indicates a modest improvement overall on 2 of the measure components (malnutrition screening, from 0.80 to 0.88, and nutrition assessment, from 0.15 to 0.20), a decrease in performance on the diagnosis documentation component (from 0.62 to 0.41), and little to no change on the care plan development component and the GMCS when comparing the baseline data point (Q1: 2019) to the final data point (Q2: 2021).

The clinical nutrition manager at Intermountain Health shared that her nutrition department had implemented quality improvement strategies for malnutrition during 2017 that aligned with joining the MQii Learning Collaborative in the spring of 2017. However, it was not until 2019 that the nutrition staff decided to take stock of

their performance and begin reviewing their data reports more carefully. As a result, when the data across five facilities were reviewed and showed a similar downward trend in measure performance, a decision was made to review the data on a more regular basis and direct clinical workflow to focus on improving their performance. The team was particularly focused on improving Intermountain's rate of documented malnutrition diagnoses and engaged programmers to further assess their clinical data on documentation. They identified that a key aspect of documenting malnutrition relied on physicians "moving" the malnutrition diagnosis established by RDNs into the problem list of a patient's health record. A primary solution has since been to flag malnutrition diagnoses for physician action in the electronic health record system. Other solutions have been to conduct chart audits by peers to ensure malnutrition criteria for diagnoses are accurate, and to present malnutrition standards and diagnosis practices during on-boarding training for new staff. Efforts to similarly improve establishment of nutrition care plans include RDNs attending all physician-led patient rounds and proactively discussing and confirming care plans for all patients experiencing malnutrition during those rounds.

During 2020, an internal dashboard was created to continue to monitor the eCQM data, which is shared with the five participating facilities on a regular monthly basis. Therefore, the upward
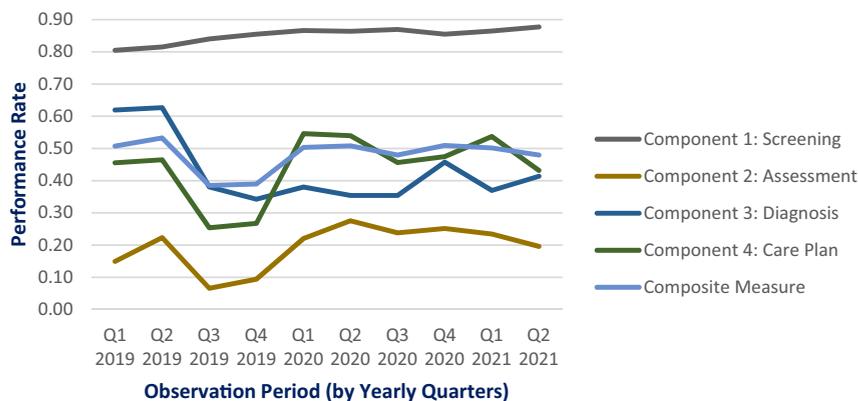
Figure 2. Intermountain Health component and composite measure performance, 2019-2021.

trend in eCQM performance beginning in late 2019 can likely be attributed to bringing the audit and feedback cycle closer to the point of care and reflecting more timely malnutrition eCQM data that ultimately strengthened the hospital team's commitment to quality improvement for malnutrition care.

Practice Review 2: UnityPoint

UnityPoint Health is a nonprofit network of hospitals, clinics, and home care services spanning Iowa, Illinois, and Wisconsin. It includes a total of 32 hospitals. This review examines data from the UnityPoint Health—Des Moines, Iowa, affiliate, which encompasses Iowa Methodist Medical Center (482 beds), Methodist West Hospital (95 beds), and Iowa Lutheran Hospital (208 beds).

UnityPoint's experience illustrates how tracking performance of a composite measure on its own may not tell a complete story (see Figure 3). Although

performance on the GMCS is relatively high and stable over time—>0.80 across the entire observation period—performance on the individual component measures reveal opportunities for further improvement. Figure 3 shows overall improvements over time on two of the measure components (nutrition assessment from 0.57 to 0.65, and care plan development from 0.76 to 0.83) and slight perceived declines over time, but no meaningful change on the high-performance rates of the other two measure components (nutrition screening from 0.94 to 0.90, and diagnosis documentation from 0.99 to 0.97).

While speaking with key personnel at UnityPoint Health, including the clinical nutrition manager covering these three hospitals, the authors learned that the RDNs on her team have been committed to improving malnutrition care since 2016, before joining the MQii Learning Collaborative during fall 2018. At that time, its nutrition department was working to consistently implement the
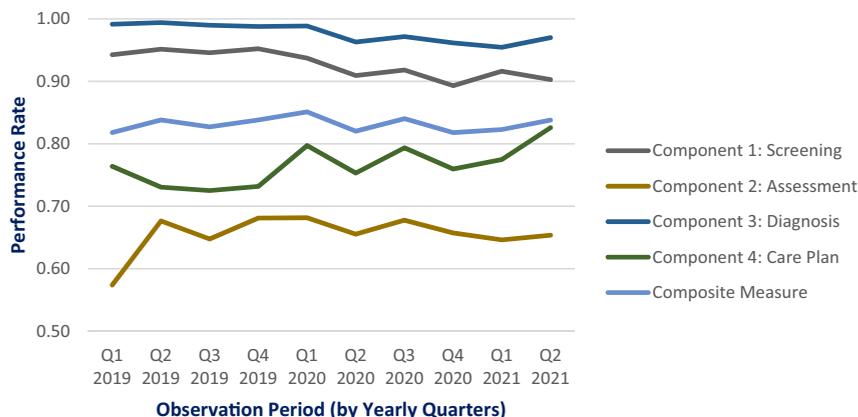
Malnutrition Screening Tool and train all RDNs to conduct Nutrition Focused Physical Exams. However, outside of the nutrition department, awareness of RDNs' efforts to address malnutrition care remained low. It was not until internal data on the financial revenue gains associated with treating malnutrition was brought to the attention of hospital administrators and executive leaders that malnutrition became an area of focus for other hospital departments.

To support that work, UnityPoint joined the MQii in 2018, gaining access to the data provided on the initiative's eCQMs. Review of data from its first year of performance indicated that further care improvements could be made. In comparing clinical documentation with claims data, UnityPoint's Health Information Integrity Specialists observed that documentation of nearly all their malnutrition processes were less than optimal. Upon learning this, the nutrition department chose to focus attention on improving the documentation of malnutrition diagnoses. The hospital implemented an educational program targeted toward physicians and midlevel providers, which was well received. The program included instructions from information technology staff via remote conference calls on how to record a malnutrition diagnosis in the malnutrition template of the electronic health record (which contains recommended nutrition diagnosis and related notes from RDNs), followed by e-mail evaluations and feedback on performance. These efforts help explain the high rates of performance for malnutrition diagnosis documentation sustained by UnityPoint during the observation period. The physician documentation support team continues to monitor the documented rate of malnutrition conditions by specialty group and individual physicians. This includes ongoing education and feedback to physicians as well as collaboration with the manager of nutrition and dietetics.

In addition, in 2019, the nutrition and dietetics department switched its reporting structure to reside under the nursing department instead of within integrated services. This change enabled the nutrition and dietetics department to request additional staff and obtain the support needed to augment its team of RDNs. The
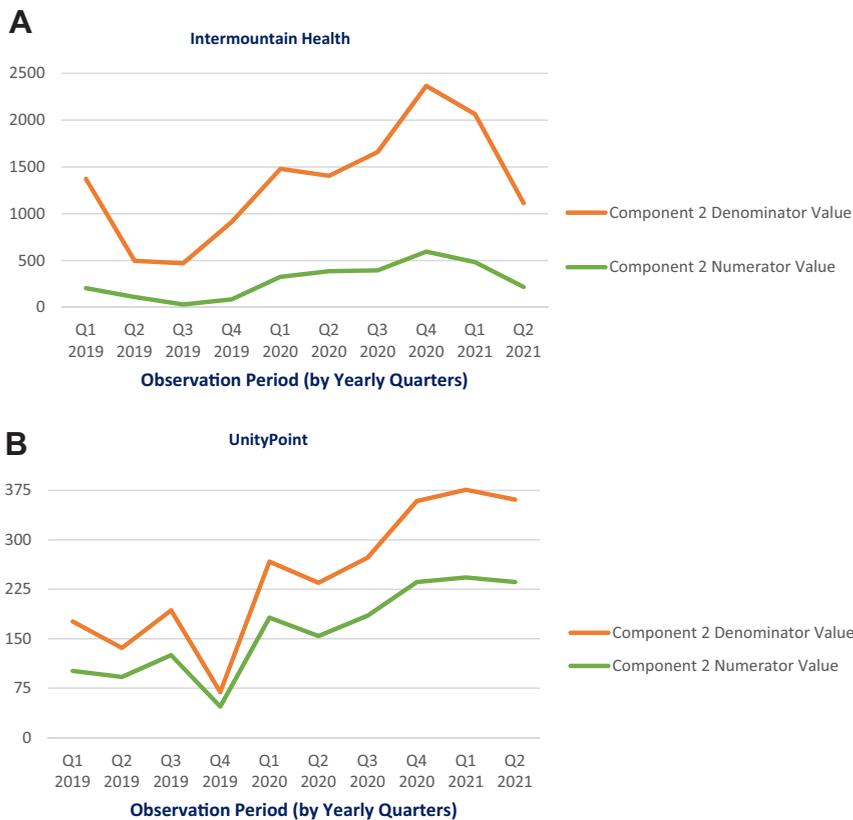

Figure 3. UnityPoint component and composite measure performance, 2019-2021.

A

Intermountain Health

B

UnityPoint

Figure 4. Differences over time between numerator and denominator counts of nutrition assessment (Measure Component 2) at Intermountain Healthcare and UnityPoint.

repositioning was also critical for improving the coordination with nursing and physician teams to further close gaps in nutrition care. These organizational changes may explain the improvements that UnityPoint facilities saw related to conducting nutrition assessments and nutrition care planning during the observation period.

Opportunities for Continued Improvement

Overall, the system-level data in Figures 2 and 3 show wide variation in performance across the individual measures and over time, illustrating the challenges and dynamic nature of conducting quality improvement in clinical settings. Several variables can influence the ability to change any one aspect of care or clinical workflow. Moreover, the effort required to educate all staff on new processes and to ensure interdisciplinary coordination can be substantial and may take

several attempts before all team members are aware, bought in, and comfortable with new approaches. Nonetheless, change and improvement are possible. The examples from Intermountain Healthcare and UnityPoint Health highlight not only the value of using data to understand how clinical care teams are performing, but also the importance of effectively communicating the data to the relevant care teams to impact workflow changes. These practice reviews also reinforce the potential value and benefit that use of malnutrition measures can have on clinical performance and outcomes.[14]

A Closer Look at Conducting Nutrition Assessments

Amidst the progress each system has made to improve key components of its malnutrition care, opportunities remain to continue improving performance. Notably, conducting nutrition assessments is a component on which

both health systems had the lowest performance rates.

To better understand the lower performance rate of this component for both health systems, the authors examined the numerator (ie, the number of completed nutrition assessments) and denominator (ie, the hospitalizations among patients who screened positively for malnutrition) values of this component for each system. Given what is known about the burden of the coronavirus disease (COVID-19) pandemic on Americans' health and access to healthy food, the authors suspected that the denominator values might have increased more rapidly than clinical RDNs' ability to perform assessments and accurately identify malnutrition. Indeed, this seems to be the case; Figure 4 shows that the values of both numerators and denominators across all data-reporting facilities in these systems changed at different rates.

Intermountain has not changed its nutrition staff level in recent years but communicated that several of its major hospitals are short-staffed due to changes in the patient population. Additionally, during the COVID-19 pandemic, RDNs were prohibited from entering the rooms of patients infected with the virus; this restriction limited their ability to perform nutrition assessments. This may further explain the widening gap between numerator and denominator counts from 2020 into 2021 (Figure 4A). UnityPoint, on the other hand, has increased the size of its clinical nutrition staff over the past 4 years yet still shows a slightly widening gap, indicating that the nutrition department may have been unable to keep up entirely with the growing patient case load (Figure 4B). Similar to the Intermountain Health system during the COVID-19 pandemic, the RDNs at UnityPoint were unable to go into patient rooms during the first year of the pandemic. But after the first year, they were fit-tested for N-95 respirator masks and powered air-purifying respirators that allowed them to resume conducting full in-person nutrition assessments for the remainder of the pandemic. This re-access to patients may have helped avoid further decreases in their performance for this measure and serves to highlight the importance of the

physical exam component of nutrition assessments for providing quality care.

Increasing the staff of clinical RDNs, seeking ways to further automate RDNs' documentation (enabling them to see more patients), and/or increasing attention on reducing admissions (and readmissions) through community-based interventions may help to reduce the burden of increased demand. Of course, each hospital or hospital system will need to determine the most appropriate and feasible means to address malnutrition and readmissions in its patient populations. Continued communication with administrative departments and coordination with physician teams will help ensure that continued improvement efforts for malnutrition care are well supported. Involvement of quality teams will also be important to help drive performance measurement, provide data on progress, and identify areas for future improvement.

CONCLUSIONS

The reviews presented here support the need for continued monitoring of malnutrition care in hospitals and education of interdisciplinary care teams. They emphasize the benefit of using the GMCS and its component measures developed through the MQii and stewarded by the Academy of Nutrition and Dietetics to identify and address malnutrition among hospitalized older adults. The participating staff at these hospitals clearly shared the importance of accurate malnutrition diagnosis and how use of data can influence communication with interdisciplinary care teams to drive change in malnutrition care. The reviews also illustrate how data can be used to inform decisions regarding where to apply future improvement efforts, such as examining data on health disparities to pinpoint other areas of need. Furthermore, the RDNs on these practice review teams played integral roles to improve the larger teams' care processes, serving as a model of leadership by raising awareness and taking action to advance malnutrition care.

References

1. Guenter P, Abdelhadi R, Anthony P, et al. Malnutrition diagnoses and associated outcomes in hospitalized patients: United States, 2018. *Nutr Clin Pract*. 2021;36(5):957-969.
2. Tobert CM, Mott SL, Nepple KG. Malnutrition diagnosis during adult inpatient hospitalizations: analysis of a multi-institutional collaborative database of academic medical centers. *J Acad Nutr Diet*. 2018;118(1):125-131.
3. Lengfelder L, Mahlke S, Moore L, Zhang X, Williams G 3rd, Lee J. Prevalence and impact of malnutrition on length of stay, readmission, and discharge destination. *J Parenter Enteral Nutr. December 29, 2021* [Epub ahead of print]. December 29, 2021. https://doi.org/10.1002/jpen.2322
4. Agarwal E, Miller M, Yaxley A, Isenring E. Malnutrition in the elderly: a narrative review. *Maturitas*. 2013;76(4):296-302.
5. Sauer AC, Alish CJ, Strausbaugh K, West K, Quatrara B. Nurses needed: identifying malnutrition in hospitalized older adults. *NursingPlus Open*. 2016;2:21-25.
6. Malnutrition Quality Improvement Initiative. About the MQii. Updated 2022. Accessed June 17, 2022. https://malnutritionquality.org/about-mqii/
7. Fitall E, Pratt K, McCauley S, et al. Improving malnutrition in hospitalized older adults: the development, optimization, and use of a supportive toolkit. *J Acad Nutr Diet*. 2019;119(9 Suppl 2):S25-S31.
8. Nepple K, Tobert C, Valladares A, Mitchell K, Yadrick M. Enhancing identification and management of hospitalized patients who are malnourished: a pilot evaluation of electronic quality improvement measures. *J Acad Nutr Diet*. 2019;119(9 Suppl 2):S32-S39.
9. Academy of Nutrition and Dietetics. Clinical malnutrition. Accessed June 17, 2022. https://www.eatrightpro.org/practice/practice-resources/clinical-malnutrition
10. National Quality Forum. Measure List: Global Malnutrition Composite Score. Updated 2022. Accessed June 17, 2022. https://www.qualityforum.org/Qps/QpsTool.aspx#
11. National Quality Forum. Prevention and Population Health Final Report—fall 2020 cycle. Published 2021. Accessed June 17, 2022. https://www.qualityforum.org/Publications/2021/10/Prevention_and_Population_Health_Final_Report_-_Fall_2020_Cycle.aspx
12. 42 CFR Parts 412, 413, 482, 485, and 495. Medicare Program; Hospital Inpatient Prospective Payment Systems for Acute Care Hospitals and the Long-Term Care Hospital Prospective Payment System and Policy Changes and Fiscal Year 2023 Rates; Quality Programs and Medicare Promoting Interoperability Program Requirements for Eligible Hospitals and Critical Access Hospitals; Costs Incurred for Qualified and Non-qualified Deferred Compensation Plans; and Changes to Hospital and Critical Access Hospital Conditions of Participation. Final rule (FR DOC #2022-16472) US Department of Health and Human Services, Centers for Medicare and Medicaid Services. Accessed August 2, 2022. https://public-inspection.federalregister.gov/2022-16472.pdf
13. Valladares AF, McCauley SM, Khan M, D'Andrea C, Kilgore K, Mitchell K. Development and evaluation of a Global Malnutrition Composite Score. *J Acad Nutr Diet*. 2022;122(2):251-253.
14. Valladares AF, Kilgore K, Partridge J, Sulo S, Kerr KW, McCauley S. How a Malnutrition Quality Improvement Initiative furthers malnutrition measurement and care: results from a hospital Learning Collaborative. *J Parenter Enteral Nutr*. 2021;45(2):366-371.