

Conference Report

Conference Report: Leveraging the Global Malnutrition Composite Score for Quality Improvement, Health Equity, and Better Patient Outcomes

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Abstract

Effective January 2024, the United States Centers for Medicare & Medicaid Services (CMS) for the first time has included a nutrition-focused quality measure in the Hospital Inpatient Prospective Payment System (IPPS) Inpatient Quality Reporting (IQR) Program: the Global Malnutrition Composite Score (GMCS). The GMCS is an electronic clinical quality measure (eCQM) that hospitals can choose to report voluntarily to meet the requirements for IPPS IQR payments. The GMCS can help improve hospital malnutrition care and help advance hospital health equity goals. This conference report summarizes a panel discussion at the Academy of Nutrition and Dietetics Food and Nutrition Conference & Expo in October 2023. During the panel, four health and nutrition experts described strategies for integrating the GMCS into hospital electronic health records (EHRs). They also outlined how GMCS data can be used to facilitate successful patient transitions to post-acute care through addressing food insecurity



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and other reasons for malnutrition. Such strategies can serve to help avoid preventable complications and readmissions, improve patient outcomes and health, and meet quality and health equity objectives, while helping reduce overall healthcare costs.

Keywords

Malnutrition; health equity; quality measures; food insecurity; global malnutrition composite score (GMCS)

1. Introduction

Beginning in January 2024, the United States (U.S.) Centers for Medicare & Medicaid Services (CMS) for the first time included a nutrition-focused quality measure in its Hospital Inpatient Prospective Payment System (IPPS) Inpatient Quality Reporting (IQR) rule, enabling hospitals and clinicians to use the Global Malnutrition Composite Score (GMCS) [1] to deliver and quantify high-quality nutrition care, while also advancing health equity.

While optional, the inclusion of the GMCS among CMS-approved quality measures for hospitals demonstrates a recognition among U.S. health policymakers that malnutrition plays a significant role in determining health risks and health outcomes for older Americans, particularly in rural and underserved communities. Based on the evidence- and consensus-based nutrition care process, the GMCS provides hospitals with a compelling and comprehensive tool for assessing, quantifying, and delivering high-quality malnutrition care for patients aged 65 years and older who are at risk of malnutrition. The GMCS can also help advance health equity for those patients whose social determinants of health put them at an even higher risk of malnutrition and adverse outcomes. In addition to reducing hospital mortality and 30-day readmission rates, comprehensive nutrition care can help reduce hospital length of stay [2], a direct metric of utilization and costs.

During the Academy of Nutrition and Dietetics (Academy) annual Food and Nutrition Conference & Expo (FNCE) in October 2023, a panel discussion offered real-world advice and practical guidance on implementing the GMCS in hospital settings. Donna Belcher, Assistant Director of Clinical Nutrition & Nutrition Support at Massachusetts General Hospital in Boston, moderated the discussion with three health and nutrition professionals. This Conference Report summarizes the panel presentations, which included how and why to collect data on malnutrition screening, assessment, diagnosis, and care planning through electronic health records (EHR) processes, as well as how to integrate data into hospital quality and health equity initiatives. This Conference Report builds on a previously published report on a GMCS presentation made at the 2022 FNCE [3].

2. Global Malnutrition Composite Score Overview and Link to Health Equity

Kristi R. Mitchell, Founder and CEO of Atlas Clarity LLC and President and CEO of Health Equity Outcomes, Inc. in San Francisco, provided an historical overview of the GMCS. The GMCS was the culmination of a multi-year, multi-stakeholder effort led by the Academy [4] and Avalere Health to develop a roadmap for addressing malnutrition through standardized screening, assessment, diagnosis, and a nutrition care plan in acute hospital settings. The effort also has focused on pairing culturally appropriate interventions beyond the hospital walls in coordination with community-

based organizations to address malnutrition and food insecurity. This work started with development of the Malnutrition Quality Improvement Initiative (MQii), which endeavored to develop consistent, systematic electronic clinical quality measures (eQMs) for malnutrition care. The initial malnutrition eQMs, along with an electronic toolkit, were tested through an MQii Learning Collaborative. By the end of 2022, the MQii Learning Collaborative had expanded to over 325 participating hospital sites across 38 U.S. states and Puerto Rico, as well as 25 health trusts in the United Kingdom [5]. Based on CMS guidance, the MQii further worked to combine and test the individual malnutrition eQMs as a single composite measure: the GMCS. In 2022, CMS adopted the GMCS for its IPPS IQR, providing hospitals and clinicians with a single value that comprehensively assessed malnutrition care quality.

The GMCS includes four components [6] that correspond with the basic elements of the nutrition care process (Figure 1):

- 1) Screen for malnutrition risk;
- 2) Conduct a nutrition assessment;
- 3) Document medical diagnosis of malnutrition; and
- 4) Develop a nutrition care plan.

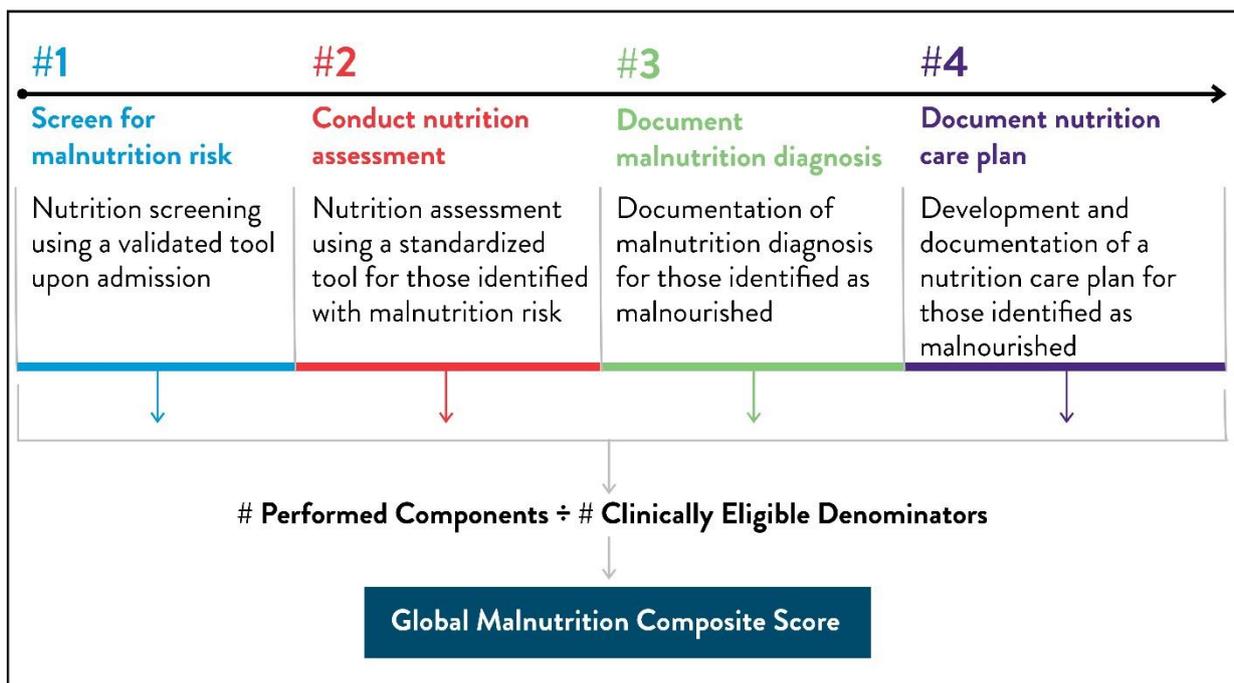


Figure 1 Individual components of the Global Malnutrition Composite Score (GMCS) [6]. Used with permission from the Malnutrition Quality Improvement Initiative (MQii). (Figure accessed March 2024).

Implementing the GMCS can be a key element of work by hospitals and clinicians to advance health equity in their communities, while also meeting CMS eQCM quality reporting requirements.

As a growing number of hospitals have adopted malnutrition quality measures, the MQii has amassed nearly 2 million patient records that demonstrate the value and benefits of screening, assessing, diagnosing, and instituting a care plan to treat malnutrition as a key component in providing high-quality care. The MQii data also has spotlighted malnutrition-related disparities, not

only in the identification of malnutrition among different patient populations, but in their 30-day readmission rates as well. Patients with malnutrition identified as non-Hispanic Black have a 26 percent readmission rate compared to less than 19 percent for their non-Hispanic White counterparts [2].

Societal, environmental, and economic differences put some groups of patients at a disadvantage when navigating the health system. From screening and diagnosis to treatment and outcomes, these health disparities cut across age, gender, race, language, and geography and are exacerbated by social determinants of health, including a patient's ability or inability to access housing, transportation and/or nutritious food.

The MQii partnered with the National Minority Quality Forum [7] to explore and gain a better understanding of how addressing malnutrition could also advance health equity by connecting disadvantaged populations with appropriate resources in the community. It is important to understand the connection between social determinants of health, access to care, chronic disease and other nutrition problems that have a profound impact on patient outcomes, particularly if those patients are also malnourished. The ideal approach for hospital clinicians is to ensure that when patients with malnutrition are being discharged, there is a follow up plan to address malnutrition, including food insecurity when identified.

Hospitals and clinicians often face hurdles in addressing malnutrition and health equity. To begin overcoming these hurdles, clinicians must increase awareness and knowledge among health care providers about the impact of malnutrition on patient outcomes and the need to close the gaps in screening and diagnosis of malnutrition. They can improve discharge planning by getting the right people to work together to support a better, more effective discharge process that connects patients to appropriate community resources and support services. Too often, patients and/or their family members are left to problem-solve on their own, but they may not have the knowledge or time to coordinate an appropriate and feasible plan. If a community lacks the resources and services to provide needed support, the hospital or health system can be a driver of innovation and collaboration to foster better programs in the community.

There are a number of points along the malnutrition care pathway during which malnutrition and food insecurity can be assessed and addressed. Capturing, recording, and analyzing data at every point along the pathway is critical for identifying gaps that exist, offering opportunities to address those needs, and also documenting effective solutions. The GMCS anchors the entire workflow, starting in the hospital, because it provides the process, measurements, and data to identify and assist patients who are malnourished or at risk of being malnourished.

3. Building Systems and Establishing Processes for Quality Malnutrition Care Success

To provide an example of the GMCS workflow, Margaret Dittloff, MS, RDN, Head of Product for Junum in San Antonio, Texas shared a case example to demonstrate the process and timeline of a high-quality malnutrition care encounter, using a real-world scenario and data (Figure 2).

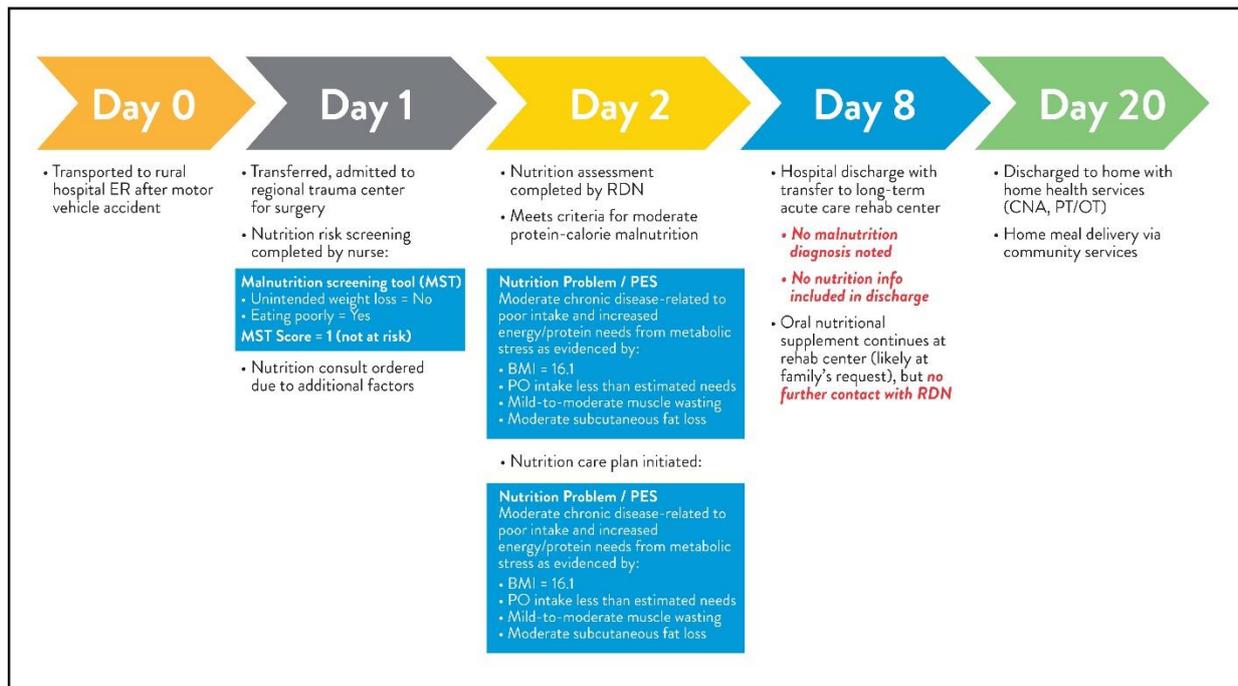


Figure 2 Serena’s Story: Timeline and Documentation.

Case Example: Serena is a 69-year-old female who was in a car accident. She also has a chronic condition—chronic obstructive pulmonary disease (COPD)—and was already frail and at risk for malnutrition before sustaining serious injuries in the traumatic event. She requires orthopedic surgery to repair her tibia and wrist. Though the initial screening with the Malnutrition Screening Tool (MST) [8] does not indicate Serena is at risk for malnutrition, her nurse asks additional questions to better understand her history and social circumstances. Based on Serena’s responses, the nurse orders a nutrition consultation. The registered dietitian nutritionist (RDN) completes a thorough nutrition assessment and develops a nutrition care plan. Both are included in the nutrition note in the EHR and nutrition interventions, including an oral nutrition supplement, are initiated based on the nutrition care plan. When Serena is ready to be discharged from the acute care facility, however, the EHR unfortunately does not include a medical diagnosis of malnutrition, and no one notes nutrition information in the discharge summary or transfer of care plan. This is an important and missed opportunity to transfer Serena’s nutrition data to the next set of caregivers and better support her in the community. However, Serena and her family advocate to continue her oral nutrition supplementation as Serena moves into recovery and rehabilitation. When Serena eventually is discharged to go home, she has ongoing services including home health visits, physical and occupational therapy care, and regional home meal delivery that support her continued recovery.

This case study illustrates several positive steps as well as missed opportunities for providing quality malnutrition care (Box 1).

Box 1 Serena's experience details the hits and misses of her malnutrition care journey.

- **Day 0:** On the day of the accident, Serena is transported to a local rural hospital, evaluated in the emergency department, then transported to a regional trauma center for surgery the next day.
- **Day 1:** A nurse performs a malnutrition risk screening, using the Malnutrition Screening Tool [8] during Serena's pre-surgical assessment. Serena has not had recent weight loss or a poor appetite and thus is not identified as at risk for malnutrition. However, based on Serena's low body weight, self-reported poor eating habits, and constant struggle to breathe, the nurse sees how these problems, combined with living alone in a rural area, put Serena at risk for malnutrition; the nurse consults the registered dietitian nutritionist (RDN) for a comprehensive nutrition assessment.
- **Day 2:** Post-surgery, the RDN conducts a nutrition assessment, finds Serena meets the criteria for moderate protein calorie malnutrition and documents all the signs and symptoms: Serena is 5'7" tall, weighs 103 pounds, has a BMI of 16.1 and she exhibits severe muscle wasting and fat loss.
- **Days 2-8:** A nutrition care plan is outlined in the online nutrition note in the EHR and nutrition interventions are initiated, including oral nutrition supplementation and nutrition education to help Serena look ahead at how she will feed herself when she is discharged and what kind of support she may need. Discharge planning and conversations must start early and be documented in the EHR.
- **Day 8:** When Serena is ready to be discharged from the acute care facility, she needs to be transferred to a rehabilitation hospital because her injuries left her unable to care for herself. Her EHR unfortunately does not show a medical diagnosis of malnutrition, nor was nutrition information included in the discharge summary or transfer of care. This is an important (and missed) opportunity to transfer Serena's nutrition data and other information to the next set of caregivers down the line and out in the community. However, Serena and her family advocated to maintain the oral nutrition supplementation as she continued her recovery and rehabilitation.
- **Day 20:** Serena is discharged to go home, with ongoing services including home health visits, physical and occupational therapy care, and regional home meal delivery services, wrapped around to support her continued improvement. Serena's successful recovery and healthier nutrition status would not be possible if the important screening, diagnostic and planning steps were missed.

Using the GMCS dashboard in the hospital's EHR, Serena's care team completed 3 out of the 4 components of the GMCS, giving her an encounter-level score of 75 percent on the GMCS, which enables her clinicians to identify gaps and opportunities (Figure 3). In Serena's case example, the opportunity for improvement is in the provider documentation.

Total Malnutrition Composite Score as Percentage GMCS Average						75%
Patient	Component 1 Screening Documented? (Y=1, N=0)	Component 2 Assessment Documented? (Y=1, N=0)	Moderate or Severe Malnutrition Identified? Y/N	Component 3 Provider Diagnosis Documented? (Y=1, N=0)	Component 4 Nutrition Care Plan Documented? (Y=1, N=0)	Episode GMCS* (Total Measure Components Score / Eligible Denominators)
(Serena)	1	1	Y (Moderate)	0	1	75% (3/4)
-----	1	1	Y (Severe)	1	1	100% (4/4)
-----	1	1	N	N/A	N/A	100% (2/2)
-----	0	1**	Y (Moderate)	1	1	75% (3/4)**
-----	1	0	N/A	0	0	25% (1/4)

*Example scores are based on current measure specification logic, which may change; for updates, refer to Commission on Dietetic Registration website.

** Hospital Dietitian Referral was ordered so remaining components are included for calculation; else total score would be 0% due to missing screen at risk result.

Figure 3 Global Malnutrition Composite Score (GMCS) Reporting: Finding the Gaps.

Identifying gaps and acting on opportunities are important parts of implementing the GMCS. Dittloff explained how improving communication and automating workflow is critical to this process. Quality improvement efforts require leaders to look at the big picture to understand both the systems and the human components that can impact effectiveness. Communication is often one area to target for improvement. Research by Humphrey has shown the health care system is frequently fraught with miscommunication and disconnects among team members. Specifically, through an examination of medical malpractice claims over a 10-year period the researchers found that 40 percent of communication failures occurred during a patient handoff [9].

These communication breakdowns can occur during any handoff in the care process, whether from the nurse involved in admission and early screening, or the RDN involved in the nutrition assessment, or the providers who must make and document the diagnosis. Research has shown the types of information most frequently miscommunicated include contingency plans, diagnosis, and/or illness severity [9]. In addition to leading to potentially serious patient concerns, these communication breakdowns contribute to inefficiencies that may delay timely order entry, which may impact the start of needed nutrition interventions. Each member of the care team, as well as the patient and family members, often become frustrated when delays or inefficiencies prevent the delivery of the quality nutrition care that everyone wants.

To overcome obstacles to high quality malnutrition care, organizations must recognize how many different clinicians participate in the process, including nurses, RDNs, and often multiple physicians and other providers. Since it is not feasible to have a single staff member writing and tracking all the clinical notes, it requires communication and clarity among care team members, as well as EHR optimization that automates the workflow and enables each care team member to document patient notes at every step of the malnutrition care journey. This requires working with the hospital’s informatics or information technology (IT) staff to tailor the EHR technology so workflow and documentation processes are streamlined, and each measure is appropriately weighed for the GMCS score.

Healthcare organizations also must implement effective policies and procedures to clearly define expectations for all care team members and then cross-train and educate all team members to ensure they are aligned on the terminology and understand their roles and responsibilities. Additionally, it is imperative that teams plan for discharge to ensure patients will continue to have

appropriate nutrition support services after leaving the hospital, with the understanding that referrals and resources outside of the hospital may require the use of entirely different systems and processes.

Once the organization has implemented and optimized process and workflow, it is essential for the team to use a continuous quality improvement cycle to validate data and iterate as needed. It is especially important to evaluate how the data links to the terminology (codes) used in the workflow and identify opportunities to automate the flow of both human and machine-readable information. This can help improve the handoffs and communications among care team members.

Everything about integrating the GMCS into the EHR involves optimizing the data coming in and the data going out (Figure 4):

- Structured data is the standardized, clearly defined, and searchable quantitative data used for measurement and reporting. For example, structured data will show a date and timestamp for the malnutrition risk screening completed by the nurse.
- Unstructured, qualitative data provides context and richness to clinicians’ notes, which is also important for documenting the patient’s experiences and outcomes. Though unstructured data is harder to search and track for reporting purposes, artificial intelligence shows promise for the future.

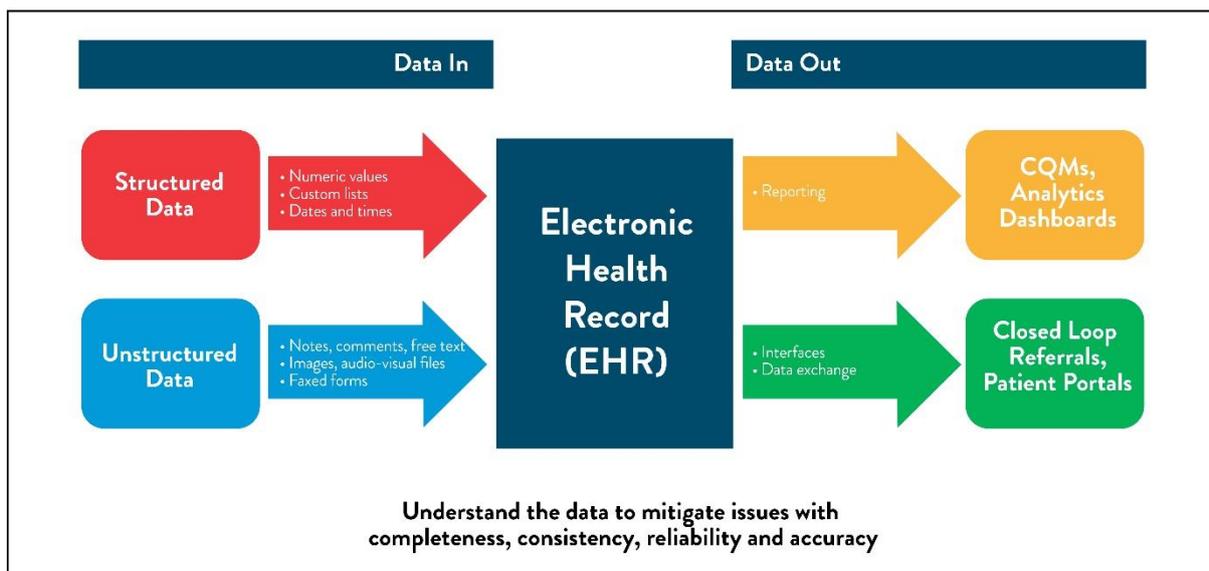


Figure 4 Impact of Data, Terminology and Workflow Automation.

Building systems and processes to capture the data coming in will facilitate the data being reported out, which will set the stage for eCQMs like the GMCS. It is important to program eCQMs into the EHR to ensure the terminology and data coming in align with the data that needs to be reported out to CMS. Clinicians and quality team members can pull needed information based on value sets and terminology that can recognize whether the nutrition assessment was performed by matching the nutrition note with the Logical Observation Identifiers Names and Codes (LOINC) code or Systemized Nomenclature of Medicine Clinical Terms (SNOMED CT) code for a nutrition assessment. When the EHR system is programmed correctly, these steps occur behind the scenes. To ensure correct functionality, the team must bring in the organization’s informatics professionals on the front end of the planning process to think through the EHR and systems programming

requirements that will need to be performed to capture and analyze the data effectively, not only for reporting eQMs, but most importantly for measuring the quality of malnutrition care that patients are receiving.

When implementing the GMCS, it is also vital that teams use proper nutrition care terminology and update documentation templates, gathering feedback from the health care providers and other staff members on the team who will be responsible for documentation. Additional steps include: 1) facilitating team communications; 2) looking at other ways structured communication is used with multidisciplinary teams, such as pre-surgery checklists, in which team members need to identify, "What do I need to convey to the provider in the moment?" 3) structuring the communication to "right-size" the information for the person receiving it; and 4) communicating what that provider's role is in performing the next step. Proactive planning and coordination will help build trust in the process and in the data clinicians and others will use. In addition, it will mitigate future concerns that may be raised suggesting the data is incomplete, unreliable, or inaccurate.

To spur change and begin to implement the GMCS, Jasmine Larson, MBA, Senior Director of Global Clinical Solutions at Abbott, of Maple Grove, MN, reminded clinicians they also need to be able to make the case for why GMCS implementation makes sense for their hospital. As noted earlier, the GMCS is an eQm, and eQm reporting is required for hospitals. In fact, hospitals are required to report on six eQMs in order to qualify for CMS payment. CMS chooses three, and the hospital may choose three eQMs from a library of options, with the GMCS being one of the options [10]. The GMCS also meets both clinical quality and health equity metrics.

Though CMS initially only requires hospitals to participate in the reporting of eQm data in order to avoid payment penalties, metrics included in CMS "pay for reporting" programs often progress to inclusion in other programs designed to incentivize improvement and high performance. Starting with public reporting, CMS may begin reporting the results publicly in the future, making it available for use by patients, advocacy groups, communities, and other payers. Reputational risk or benefit for the hospital comes with that information being made available. CMS also has "pay for improvement" and "pay for performance" programs, incentivizing through value-based purchasing, where hospitals can get a bonus if they are improving or performing in the top tier of hospitals, or be penalized if they are not. Any expansion of the use of these measures goes through the annual rule-making process that includes a public comment period before finalization.

Implementing the GMCS is beneficial for patients. The data gathered through eQMs provides hospitals and clinicians with a lens into the quality of their malnutrition care practices, establishes the foundation for continued improvements in the delivery of quality care, and most importantly, leads to better health outcomes for patients, including for those who are at higher risk for malnutrition. In addition to meeting health equity measures, delivering better malnutrition care with the GMCS could support improved performance on the hospital's 30-day mortality and readmission metrics, which already affect hospital payments. The basic steps for implementing the GMCS are summarized in (Box 2).

Box 2 Clinicians seeking to implement the GMCS in their organization should take these steps.

- Identify all internal stakeholders who need to be involved, including relevant clinicians and providers, as well as informatics and information technology (IT) staff, electronic health record (EHR) vendors and quality assurance leaders and vendors. Build a coalition of committed colleagues within the organization that includes four key roles:
 - **The Champion:** Ideally someone in hospital administration or close enough to leadership to provide insights on how decisions are made, guidance on which “why” messages will be most effective, and making connections with decision-makers.
 - **The Quality Team:** Quality aficionados within the organization whose enthusiasm and expertise can help guide methodology, processes, and appropriate vendors to bring the project to fruition.
 - **The Employees:** Frontline staff whose workflows will be affected by the project and whose valuable insights and feedback will inform decisions about workflow and process improvements.
- **The EHR Builders:** Informatics or IT staff who lead EHR workflow and documentation customization can provide insights about how to manage change requests, where there is already work going on in this workflow or whether this could be latched on to another project.
- Get familiar with the Global Malnutrition Composite Score (GMCS) specifications to be able to communicate how GMCS will benefit the organization and align with its goals and to be able to identify the right resources needed both internally and externally.
- Consider and be open to new technologies. Consider how making the case for updating outdated technological infrastructure could improve processes, care delivery, and quality reporting for the organization.
- Cross-train, educate, and utilize dashboards or tools to analyze and monitor results. Share that information back with all the clinicians who are involved. Make it visible. The more public and accessible the GMCS data is to everyone who is involved, the more they will be engaged to openly discuss and make needed changes.
- Map the workflow based on the current situation to identify opportunities and a plan to incorporate and track changes to work toward the desired goals.

4. Conclusion

The GMCS is a beneficial tool for hospitals and the patients they serve, providing processes and data that drive the delivery of quality malnutrition care, lead to better health outcomes for patients who have or are at risk for malnutrition, advance health equity, and help improve the hospital’s performance on 30-day mortality and readmission measures to report to CMS.

As with other eQMs, incorporating the GMCS into the hospital's reporting capabilities and pursuing plans for submission to CMS is a time-consuming process. Though eQMs require detailed technical work that must be implemented before clinical teams can systematically report on their metrics and performance, CMS allows a hybrid workflow [11] that allows for manual abstraction that can be entered into the reportable fields in the EHR. This enables organizations to start small, even as they work toward a more comprehensive eQCM program. Clinicians and quality leaders can

begin by establishing bedside workflows, looking at patient charts, abstracting the data, and doing manual sample calculations. The sample does not have to be large, just the minimum size needed to identify patterns and set department goals to improve performance. Clinicians should make this a priority even if they are working on a smaller team, because as the malnutrition data becomes visible, it becomes important, and it enables the team to influence the hospital's decision-making and prioritization on how to pursue required CMS eQMs. This is an iterative process that teams can and should implement in stages, celebrating and learning from the successful completion of each step, as their hospital works toward the delivery of consistent, measurable, and high-quality malnutrition care.

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Author Contributions

Mitchell, Dittloff, Larson and Belcher conceptualized the panel presentation topics. Mitchell provided historical background and research on the development of the GMCS and its link to health equity. Dittloff provided the case study and sample calculations. Larson provided how GMCS fits into the regulatory framework of hospital quality reporting and reimbursement. Belcher contributed introductory overview and summary conclusions with takeaways for clinicians. All authors reviewed and edited the final manuscript.

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Competing Interests

Kristi R. Mitchell, MPH serves as president and CEO of Health Equity Outcomes, Inc., is a board member for the DC Collaboration for Equity Health Engagement Council and is an employee of ATLAS CLARITY, LLC.

Margaret Dittloff, MS, RDN served on ASPEN's Clinical Nutrition Informatics Committee and is president of the Texas Alamo Chapter of ASPEN. She is an employee of Junum, a former employee of the Academy of Nutrition and Dietetics, and a member of the speakers' bureau for Abbott Nutrition Health Institute.

Jasmine Larson, MBA is an employee and stockholder of Abbott.

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